

HONDURAS:
PUERTO CORTES SEWERAGE PROJECT
(HO0128)

EXECUTIVE SUMMARY

BORROWER: Municipality of Puerto Cortés

GUARANTOR: Government of Honduras

EXECUTING AGENCY: Municipality of Puerto Cortés

AMOUNT AND SOURCE: IDB: US\$13.80 million (FSO)
Counterpart: US\$ 2.40 million
Total: US\$16.20 million

FINANCIAL Amortization period: 40 years
TERMS AND Disbursement period: 4 years
CONDITIONS: Grace Period: 4 years 6 months
Interest rate: 1% for first 10 years,
thereafter 2%
Inspection and supervision: 1% per year
Credit fee: 0.5%

OBJECTIVES: The overall aim of the project is to contribute towards the design of an efficient model for potable water and sanitation services in Honduras at a local level. The Project is a precursor to a Potable Water and Sanitation Investment Program being prepared by the Government of Honduras for a future loan from the IDB (HO0072). The Project will demonstrate autonomy of the service provider, regulation, financial sustainability and community involvement, all of which will be applied to the design of the Investment Program. The Project will ensure that Puerto Cortés itself has an efficient and sustainable arrangement for potable water supply and wastewater disposal services, including the sewerage infrastructure to ensure the safe, environmentally acceptable disposal of liquid waste.

DESCRIPTION: The Municipality has embarked on the reform of the potable water and sanitation service provision in Puerto Cortés. The Municipal water division, DAMCO, will be converted into a commercial company, owned by the Municipality and the private sector. This company will be created for the sole purpose of providing water and waste water services and it will sign an agreement with the Municipality for the leasing of the water and sewerage infrastructure. The municipality will retain ownership of the infrastructure.

The operation itself is divided into the following components: 1) Administration and Engineering (US\$1.39m). This component will cover the hire of a Project Manager for the overall implementation of the Project, a Short Term Consultant to initiate the Project and a Works Consultant for the construction phase. 2) Institutional Development: (US\$784,000). This component will cover the consultancy work necessary to convert DAMCO into the new water and sewerage company, to draft the leasing agreement and to put the entire new institutional arrangement into operation. The component will also contain activities related to environmental management. 3) The construction of sewerage system: (US\$10.87m). This is the largest component which will be undertaken when the institutional development is largely completed. Also included is the fund that will be used to contract local plumbers to make the household connections to the new sewerage system. 4) Complementary activities: (US\$546,000). This component comprises activities necessary for the acquisition of the land and the resettlement of families that are living on the land without formal title.

**ENVIRONMENTAL
CLASSIFICATION:**

The Committee of Environmental and Social Impact (CESI) approved the Environmental and Social Impact Brief for the Project at their meeting of April 4th, 1997.

The Environmental Impact Assessment (EIA) was produced and the results were made public through open council meetings in Puerto Cortés on September 8th and 11th, 1997.

The CESI approved the Environmental and Social Impact Report for the Project at their meeting of September 19th, 1997.

BENEFITS:

The fundamental institutional changes that are supported and consolidated by the Project will lead to the efficient and sustainable potable water supply and wastewater disposal services for the people of Puerto Cortes in the long run. The Project is constructed to ensure managerial and financial autonomy. The tariffs are within the ability of the population to pay for the service and are sufficient to cover the total costs of services at least until the year 2015.

Considerable immediate and long-term benefits will accrue from the construction of the sewerage system. The health and the general quality of life of the people will be increased as the contamination caused

by the lack of any proper disposal system is removed. The contamination of surface water, groundwater and the sea will be significantly reduced.

RISKS:

The purpose of the Project will not be achieved if the potable water and sewerage sector in Puerto Cortés is not reformed. However, the Project is structured with a strict sequencing of events to ensure that the essentials of reform are the first activities undertaken. The new water company must be operating its Leasing Agreement with the Municipality prior to the start of construction.

The failure of the Municipality to honor its repayments to the IDB is regarded as a risk. Both the water company and the Municipality are in a reasonably strong financial situation. In addition, the Municipality will be required to ensure that the Trust Fund through which funds for the Project will be channeled has, at all times, a positive balance equivalent to debt service requirements and counterpart funds for the following twelve months:

One of main risks to the Project is related to a possible delay in the implementation of construction of the sewerage system and of other investments. The contracting of a private Project Manager, and the letting of turnkey construction contracts will be the most important measures to mitigate this risk. There is precedent for the use of a Project Manager on other projects in Honduras, notably for the completion of a much-delayed project for potable water in Tegucigalpa.

The Project is dependent on the installation of household meters for its success. The financial modeling makes assumptions about demand control that can only be achieved with universal metering. In addition to this, the tariff structure depends on the consumption being measured. The Municipality has embarked on a plan for the installing of meters, but, as yet, only a small proportion of the population is covered. The plan envisages that the majority of the population will be covered in 1998 and the whole of the population by the end of 1999. The coverage of a proportion of the population with household meters will be a condition precedent to the commencement of construction.

The Project will not be able to deliver the benefits anticipated in terms of reduction of contamination if a significant number of households do not connect to the system. There will be two incentive mechanisms to maximize the number of connections. Firstly, once there is sewerage available in a given street its use will be compulsory and the customers will be charged

for the service whether they are connected or not. Secondly there will be no separate charge for making residential connections, the cost of which will be covered in the overall tariff. The connection of industry to the sewerage system will likewise have a big impact. There will be increased vigilance on the part of the Municipal Environmental Unit and the enforcement of penalties for pollution to ensure that industry participates in full.

**THE BANK'S
COUNTRY AND
SECTOR STRATEGY:**

The IDB is taking a two-pronged approach to the sector in Honduras, supporting, a) the central reform as expressed in the draft law, and b) reform at a local level. The most recent Country Paper for Honduras included future projects for each part of the strategy. The IDB assisted with the preparation of the draft law and, if requested, will continue to work with the authorities through a Technical Cooperation loan to support its implementation. A Program of Investment in Potable Water and Sanitation (HO0072) is being designed to promote and consolidate reform at the local level, using Puerto Cortés as a pilot.

The Puerto Cortés Sewerage Project is consistent with the IDB's commitment to reform of the sector in Honduras. The preparation of the Investment Program, HO0072, will be complex, with the establishment of rules for eligibility for both the individual projects and the entities that are proposing them. A model project, implemented in parallel with the preparation of the Investment Program, will be extremely useful in demonstrating how the procedures will work.

POVERTY IMPACT:

The Project qualifies as a Poverty Targeted Investment using criteria established in the Eighth Replenishment Agreement, Document AB1704, as modified by document GN-1964-3 of June 3rd., 1997. More than fifty percent of the population fall below the Poverty Line. Furthermore, as a sanitation investment, the Project also qualifies for inclusion in the Social Equity and Poverty Reduction category according to paragraph 2.12 of the Eighth Replenishment Agreement.

**ACQUISITION OF
GOODS AND
SERVICES:**

In accordance with IDB standard policies, international competitive bidding will be required for the construction of works over US\$1.5 million and for the procurement of goods over US\$250,000.

The total value of turnkey construction contracts that will be let by open international tender is US\$10.06 million.

**SPECIAL
CONTRACTUAL
CONDITIONS:**

Conditions precedent to the first disbursement:

1. That the Trust Fund for channeling all funds related to the potable water and sewerage investment in Puerto Cortés is established. (Paragraph 3.20).
2. That the Short Term Consultant is retained to initiate the project. (Paragraphs 3.3A and 4.4).
3. That the Government of Honduras has entered into an agreement with the Municipality of Puerto Cortés setting out the terms and conditions of the guarantee (Paragraph 3.21).

Condition precedent to the IDB approval of the call for construction bids:

1. The completion of the site investigation (Paragraph 4.27).

Conditions precedent to the first disbursement for construction of the sewerage system:

2. That at least 40% of households in Puerto Cortés will be equipped with potable water meters. (Paragraph 5.41).
3. That the new water company is created and the Leasing Agreement between the company and the Municipality is in force. (Paragraphs 2.3, 2.4, 2.5, 2.6, 3.6 and 4.7).

Other special conditions:

4. The Municipality of Puerto Cortés will commit itself to make those cash contributions necessary to maintain resources in the Trust Fund in an amount equivalent to the debt service with the Bank for the following 12 months and which will be earmarked in the Fund for this purpose. (Paragraph 3.21).
5. The Municipality of Puerto Cortés will commit itself to implement a capital works program for the expansion and replacement of facilities for potable water and sewerage services which will include the installation of household meters for all consumers of potable water in the city by the end of 1999. (Paragraphs 2.7 and 3.8).
6. At the end of 1999 the Municipality of Puerto Cortés will submit to the IDB evidence that it has taken the necessary measures to ensure that the Municipal Environmental Unit has the legal attributes to levy appropriate sanctions for the unauthorized discharge of liquid industrial waste either to the environment or to the sewerage system to be constructed. (Paragraphs 2.14 and 3.5).

7. The Municipality of Puerto Cortés will commit itself to seek the approval of the IDB before raising any further long-term loans.
8. The Municipality of Puerto Cortés will ensure that the tariff that appears in the Leasing Agreement between the Municipality and the new water company is sufficient to cover: A) the rent due to the Municipality, which is equivalent to the true depreciation of the infrastructure plus the costs of regulation and management of the Trust Fund, B) the company's costs of administration, operation and maintenance of the system, and C) a reasonable return for the investors in the new company. (Paragraphs 2.9, 3.20, 5.14 to 5.20).
9. The Loan Agreement will contain all of the IDB's standard clauses relating to, inter alia, auditing, progress reports, inspections, loan evaluation, procurement and maintenance.

I. BACKGROUND

A. The Water and Sanitation Sector in Honduras

- 1.1 Honduras has invested a higher percentage of its GDP in water and sanitation than any other country in Region 2 yet finds itself with deteriorating assets, poor quality services, little maintenance, insufficient cost recovery and over-staffing. Potable water and wastewater provision exhibit all of the symptoms that are associated with spending on capital works without making the institutional arrangements necessary to ensure their sustainability. Water services are provided by the Municipalities or by the Servicio Autónomo Nacional de Acueductos y Alcantarillado (SANAA), which also acts as a regulator and planning body for the sector. SANAA is considered inefficient and the Municipalities are just beginning to develop their capacity to deliver the services.
- 1.2 The Municipal Law (1990) makes municipalities responsible for the delivery of public services, including water and sanitation services. The law also gives the Municipality increased tax-raising powers to cover the provision of the services. The same law and its associated regulations explicitly provide for the indirect provision of services. The Municipalities are empowered to modify or transform administrative units or to create new ones for the provision of Municipal services. For the same purpose, the Municipalities are able to create mixed capital companies, in partnership with the private sector for the provision of services.
- 1.3 Recognizing that the institutional structure of the sector requires reform, a draft law governing potable water and sanitation has been prepared, with the assistance of the IDB, as part of the overall modernization process. The law provides for the transfer of all potable water systems still operated by SANAA to the Municipalities and explicitly promotes the use of Anthonomus entities, including private participation, in the provision of services. The draft law also provides for the creation of an independent regulator who would, inter alia, monitor the contractual arrangements between the Municipalities and the autonomous operators and would establish rules for tariff calculation. The draft law will be submitted to the legislature when the necessary political forces can be marshaled in its favor.
- 1.4 Because of the progress being made in several Municipalities, there is a movement towards reform at the local level. Firstly there is considerable agreement on many of the essential elements of reform: A) The need for good commercial practice in the search for efficiency and sustainability, B) Independent regulation, and C) Autonomy for the services providers. All of these points are provided for in the draft law. Secondly, there is evidence of the peoples' willingness to pay for water and sanitation when the service is adequate. Thirdly, there is evidence that decentralization can work as the case of Puerto Cortés shows.

B. Puerto Cortés

- 1.5 Puerto Cortés is a city on the Atlantic coast of Honduras with a population of 51,000. It is the most important port in Central America and has grown rapidly in recent years with the expansion of the "maquila" industry in the Sula Valley and regional trade flows from neighboring countries. The city is located principally on a low lying peninsula between the Bay of Cortés and the Alvarado Lagoon. The majority of the population lives on the peninsula but there is also a center of population on the mainland where the highest population growth rate is found.
- 1.6 Puerto Cortés does not have an adequate sewerage system. 65% of households utilize self-constructed septic tanks which are not properly designed, generally in a poor state of repair, are ineffective due to the high water table in the peninsula and consequently pollute the shallow aquifer. Infiltration from the high water table increases the amount of water and the tanks are in a continual state of overflow. Of the households with septic tanks, 75% report problems of overflowing and 73% have constructed second or third facilities as the first has filled up. The rest of the population uses latrines. Households living on the margins of the lagoon discharge their liquid waste directly into the water. The wastewater from the 5000 people who work in the Free Zone that is run by the National Port Authority (EPN), discharges without treatment into the Bay of Cortés.
- 1.7 These insanitary conditions lower the quality of life and are a constant threat to health. The low-lying land of the peninsula is characterized by stagnant water, often under the dwellings themselves, many of which are built on stilts. There is a high potential for infection with water-borne disease caused by contaminated water from the septic tanks. The stagnant water is also a breeding ground for mosquitos. The Bay of Cortés is highly contaminated with household wastewater and, at the popular "Coca Cola" bathing beach immediately to the west of the city and opposite the Free Zone of the EPN, coliform counts of over 40,000/100ml have been recorded.
- 1.8 The survey undertaken as part of the Project preparation has shown that 98% of the population is conscious of the fact that the wastewater is a principal cause of their health problems. Hospitals and clinics serving Puerto Cortés report a high incidence of both diarrhea and intestinal parasites. The vast majority of those afflicted are less than five years old. Skin infections, which are thought to result from contact with contaminated water, are also common.

<u>Cases treated in hospitals and clinics in Puerto Cortés</u>				
	1996 (full year)		Jan.-June 1997	
	Age <5	Total	Age <5	Total
Diarrhea	664	826	505	560
Intestinal parasites	163	329	163	658
Skin infections	146	316		
Source: Environmental and Social Impact Report.				

- 1.9 The Chamber of Commerce consider the lack of adequate wastewater disposal facilities and the obvious contamination of the city to be a brake on business development and, particularly, on the growth of the tourist industry.

C. Public Services in Puerto Cortés

- 1.10 The present Municipal administration is implementing an accelerated program of modernization of public services. In 1995 the collection of solid waste was contracted to a private company. Coverage has increased from 55% to 80% of the city and complaints have dropped considerably. Other moves which involve the private sector include: A) granting a concession to the lessees for the administration of the central market, B) closing the Municipal vehicle maintenance workshop and contracting the work to private workshops, and C) the planned construction of a new slaughterhouse using private financing.
- 1.11 Community participation in the decision-taking process is promoted through *cabildos abiertos*, open council meetings, in which the city's problems and the proposals for confronting them are discussed. A culture of paying for good service provision has been fostered. Increased cost recovery for public services, among other things, has allowed the Municipality to invest in social projects such as education and health for low-income groups.

D. Potable Water Services in Puerto Cortés

- 1.12 Puerto Cortés is a good example of what can be done to improve water services. At the end of 1993, Hurricane Gert destroyed the source works on the River Tulian and the city was without a potable water supply for many months. SANAA was the water service provider at the time but the new mayor of Puerto Cortés lobbied extensively to take over and, in May 1995, responsibility for the services was provisionally passed to the municipality. The operation and maintenance of the system by the Municipality was made permanent in April 1997 when a formal agreement was signed with SANAA. A Decree passed by the National Congress in May 1997 passed ownership of the assets in the potable water infrastructure permanently to the Municipality.

- 1.13 The municipality established a water division, DAMCO, and recruited a highly regarded general manager to run it. Since that date service indicators have improved considerably: a) coverage has increased to 6,800 connections serving 86% of the population (it was 79% prior to 1995) ^{1/}; b) potable water production has increased to 18,500m³/day (14,500m³/day prior to 1995), and c) the number of employees has fallen to 4.2/1000 connections (7.6/1000 connections prior to 1995).
- 1.14 The commercial and financial performance of DAMCO has also shown a significant improvement. Running costs have decreased from Lps0.73 to Lps0.61/m³ of water produced despite increasing power and chemical costs associated with providing a higher quality service. Income has increased due to much better commercial performance. The average overall tariff has increased from Lps21 to Lps78/month and the average household tariff has increased from Lps8 to Lps30/month. Bill collection has increased from 61% to almost complete recovery of the amount invoiced. All tariff increases have been discussed at *cabildos abiertos* as described above.
- 1.15 DAMCO is permitted a high degree of management independence by the Municipality. Although there is no formal separation of accounts, the reporting is transparent and the financial situation with respect to the water services is clear. DAMCO's finances show a surplus of income over operating expenditure which is being used to pay for a program of meter installation, expected to cover all of the population with a potable water supply by the end of 1999. DAMCO is also implementing an aggressive plan to increase coverage from 57% to 83% of the urban area by 1999 through a combination of expansion and legalization of informal connections.
- 1.16 The Municipality has had considerable help from the international community in the improvement of its services. The United States Agency for International Development (USAID) is financing, with a concessionary loan, the construction of a new raw water intake which will significantly lower pumping costs. They are also providing funds for strengthening the potable water supply to a low-pressure area in the city which will make supply to all areas much more reliable. The Canadian agency, CIDA, has funded reforestation of the watershed that provides the town with its raw water source.

E. IDB strategy for the Potable Water and Sanitation Sector in Honduras

- 1.17 The IDB is taking a two-pronged approach to the sector in Honduras, supporting, a) the central reform as expressed in the draft law, and b) reform at a local level. The most recent Country Paper for Honduras proposed projects for each part of the strategy. The IDB

^{1/} The urban area was redefined in 1997, bringing in a large number of households without connections and lowering the figure for coverage to 57%. Paragraph 1.15 describes the Municipality's policy of increasing coverage to these new areas.

assisted with the preparation of the draft law and will possibly offer a Technical Cooperation loan to support its implementation. At the same time the IDB recognizes the need to support the reform at local level to ensure that it is well designed and implemented. A Program of Investment in Potable Water and Sanitation (HO0072) is being designed to promote and consolidate reform at the local level.

- 1.18 A report commissioned in 1996 by the Office of the Chief Economist, IDB, indicates the importance of designing a credible Municipal model for potable water and sanitation services ^{2/}. The proposed Puerto Cortés sewerage project is consistent with this approach and will be cast as a pilot project to be implemented in parallel with the preparation of the Investment Program.
- 1.19 Puerto Cortés has wholeheartedly embraced many of the important facets of the reform agenda: community involvement; cost recovery; and the involvement of the private sector in the delivery of such services as solid waste disposal. The municipality has the support of the central government, who see the Project as a priority.
- 1.20 The sewerage project in Puerto Cortés will not only contribute to the alleviation of the quality-of-life and health problems in the city, it will also support the local government that has been the most energetic in reforming public services for the benefit of its users.

^{2/}

See WALKER, VELÁSQUEZ, ORDOÑEZ AND RODRIGUEZ, "Regulation, Organization and Incentives: The Political Economy of Potable Water Services. Case Study: Honduras", *Unpublished report commissioned by IDB, 1997.*

II. REFORM PROGRAM IN PUERTO CORTES

- 2.1 When the Municipality of Puerto Cortés approached the IDB for a loan for the sewerage project, it was seen by both parties as an opportunity to design a pilot project for the forthcoming Investment Program. The Municipality is in agreement with the important aspects of reform that will be the center of the Investment Program: a) autonomy for the service provider, b) regulation of the services, c) financial sustainability, and d) involvement of the community in the decision-taking process.
- 2.2 The local authorities in Puerto Cortés agreed to design an institutional framework to comply with the principles of reform. The IDB agreed to assist in the design and to support the creation of the new institutional model during the first year of the Project. The IDB selected experts to explain the different institutional and contractual alternatives and to help the Municipality with the selection of an appropriate structure. The main decisions to be made were: a) what sort of organization should be created to provide the services, and b) what would be the relationship between that organization and the Municipality.
- A. The service provider
- 2.3 The potable water services in Puerto Cortés are provided by the Municipal Water Division (DAMCO), which already enjoys a high degree of informal autonomy. It was thought appropriate to maintain the basic operating structure of DAMCO, while designing a method of governance to formalize the independence of the organization and ensure that it continues to achieve levels of efficiency commensurate with that independence. It is planned to design an organization that will operate in accordance with the practices followed by a good commercial enterprise. Four different possible types of arrangement were considered: A) The simple separation of the administration of DAMCO and the establishment of accounts separate from those of the rest of the Municipality. DAMCO would have a separate budget which would be financed from tariff income. This would be considered a small advance in the direction of autonomy for the service provider but would still be liable to too much political influence. B) A Municipal Company which would be a separate entity and would enjoy a certain amount of autonomy. This entity would operate under the Law of Public Administration, and, as such, would not have the flexibility of a commercial company. C) A commercial company, in which the Municipality had an ownership stake and which would operate under the Company Law of Honduras. Such an organization must have at least five shareholders who could have anything from a nominal share-holding to a majority stake in the company. The independent shareholders would ensure a much higher level of autonomy for the company. D) A private firm, in which all of the share-holding is

private, represents the final option. It is doubtful that any private company is ready, under the present circumstances, to take all of the commercial and technical risk associated with the provision of the services. For options C) and D), the Municipality would retain ownership of the infrastructure as required in Honduran Law.

- 2.4 The option C) was chosen as the most logical in terms of complying with the criteria of reform; operating on a commercial basis; passing on real risk and responsibility to the autonomous operator while maintaining the interest of the Municipality in the provision of the services. It is proposed by the Municipality that a *Sociedad Anónima* be created and registered with the relevant authorities. Both the Municipal Law of 1990, as amended, and the Draft Law governing the provision of potable water and sanitation services foresee and explicitly promote the creation of companies for the provision of services which have a mixture of private and public capital stock. For the purposes of this document, the company will be called *Empresa De Agua y Saneamiento S.A.* (EDASSA).

EDASSA: Characteristics	
Purpose:	To provide potable water and sanitation services to the population of Puerto Cortés. Company established to accept contract from the municipality of Puerto Cortés to this effect.
Status:	<i>Sociedad Anónima</i> registered as a commercial company under the Company Law of Honduras.
Shareholders:	A minimum of five. Municipality of Puerto Cortés and others. Shares to be offered in the first instance to: a. Private service companies with a commercial interest in the operation, and/or b. The citizens of Puerto Cortés in general.
Directors:	Chairman, secretary and 3 other members elected bi-annually by the shareholders. The Directors select and fix the remuneration of the General Manager of the company.
The General Manager:	The General Manager will have a five-year contract and will have the authority to make all executive decisions. The General Manager will, specifically, be enabled to make all personnel decisions including those related to remuneration. He would act as non-voting secretary at the Directors' meetings.

B. The Lease Agreement

- 2.5 A key element of reform is to separate the provision of the services from their regulation. An adequate contractual vehicle is required to ensure that regulation is independent, allow EDASSA an adequate return and protect the customers, assuring that they enjoy a reasonable level of service for a fair price. Several different arrangements were considered: A) A Service or Management Contract, in terms of which EDASSA would provide certain services or operate the system for a fee. This option does not result in significant risk being passed on to EDASSA. The Municipality would still be responsible for providing the services. B) A Leasing Agreement under which EDASSA would rent the infrastructure from the Municipality for the purpose of providing the services. EDASSA would have the basic responsibility of providing the services. C) A Concession under which EDASSA would, in addition to its other

responsibilities, be required to make investments in the infrastructure 3/.

- 2.6 Option B) was chosen as that which transfers to EDASSA responsibility for providing the services, while the Municipality retains responsibility for capital works. The Municipality will retain ownership of the infrastructure which it will make available to EDASSA in the terms of a Leasing Agreement and for which EDASSA will pay a rent. The rent will be required to cover the full, depreciation (replacement) cost of the infrastructure, financing costs for any loans associated with the infrastructure, and the costs of monitoring and enforcing the service provision.
- 2.7 The Leasing Agreement will commit the Municipality to a capital works program to expand coverage and to replace items of infrastructure that have reached the end of their useful working lives. This investment program must include, at least, the planned expansion of coverage and the conclusion of the installation of household metering. The capital works program will have an important impact on the viability of EDASSA as it defines the client base, as well as assures that the infrastructure is operational. The capital works program will form an appendix to the Leasing Agreement.
- 2.8 The Leasing Agreement will also provide that the infrastructure be used for the unique purpose of providing potable water and sanitation services for the population of Puerto Cortés and will contain provisions for maintenance, repair and the return of the infrastructure to the Municipality at the end of the Lease.
- 2.9 The Leasing Agreement will define the tariff structure for EDASSA. The tariff will be consistent with a reasonable profitability for the company based on compliance with certain efficiency criteria. The Agreement will specify that the tariff must show the separate costs for potable water and sewerage services. The Leasing Agreement will make provision for escalation of the rent and tariff for inflation. Incentives to improve performance are implicit in a "price-cap" tariff calculation. Indicators, including the level of unaccounted water and the invoicing rate, will determine the level of efficiency expected of the company and the tariff calculation would be based on achieving these levels. If EDASSA surpassed the levels of efficiency agreed then they would make a greater return. However, the tariff calculation, when reviewed, would take into account this superior performance and set higher standards in the future.

3/ In this report, "Concession" is used to denote a legal arrangement under which the Concessionaire has a right and obligation to provide the services and to make any capital investment that is necessary for the provision of those services. This is the context in which the term is usually understood in the water sector. However, the term is often used in a more generic sense and could be applied to all of the options given.

<u>The Leasing Agreement:</u>	
Basic obligations:	
Municipality.	
A.	To make available the potable water and sewerage infrastructure.
B.	To undertake a capital works investment program.
EDASSA.	
A.	To maintain the infrastructure.
B.	To pay a rent.
C.	To provide potable water and sewerage services to Puerto Cortés.
Service conditions specified in the Agreement:	
The tariff calculation.	("Price-cap" ceiling, linked to inflation).
Level of service indicators.	
Efficiency indicators.	
Rental payment:	
To cover:	A) Capital depreciation. B) Financial costs on loans for infrastructure. C) Costs of monitoring and enforcement.
Linked to inflation.	
Incentives and sanctions:	
Cash penalties for non-compliance with levels of service indicators.	
Incentives implicit in use of "price-cap" tariff calculation.	
Performance audited annually by independent company.	
Disputes procedures:	
Resolution by expert panel.	
Other conditions:	
Establishment of a complaints procedure for customers.	

2.10 The Leasing Agreement will have a term of five years. This is a comparatively short term agreement by international standards. This is appropriate pending the approval of the new law to govern potable water and sanitation which contains specific provisions for the indirect management of the services envisaged for Puerto Cortés. A five-year lease is long enough to make the formation of the new company worthwhile and, at the discretion of the Municipality, the Agreement should be made renewable.

C. Regulation

2.11 Regulation of the services will be "by Contract"; the Leasing Agreement being the basic instrument of regulation, specifying the rules governing the provision of the services. Levels of service will be defined which will include: coverage, permitted breaks in service provision, water quality and pressure. The Agreement will require that EDASSA make information related to compliance with these standards available to the general public. The maximum tariff that EDASSA is able to charge will also be defined in the Leasing Agreement along with a formula for its escalation to take into account inflation. The terms of the Leasing Agreement will be such that the "Regulation by Contract" will be superseded by any regulatory provisions in the draft potable water and sanitation law when it is passed by the National Congress. The Leasing Agreement will include an escape clause and remedies, such as the possible renegotiation of the Agreement, to provide for national regulation being less favorable to either party than the provisions of the Leasing Agreement.

2.12 Although the Leasing Agreement specifies all of the regulations under which the services are to be provided, the Municipality will have an important monitoring and enforcement function. This will be undertaken by a small unit to be created within the Public Service Department of the Municipality which could be expanded at a

later date as a unit responsible for monitoring contracts for other services. An independent auditor, appointed each year in a manner set out in the Leasing Agreement, will check compliance from both the technical and financial point of view. It will be an explicit requirement of the Leasing Agreement that EDASSA establish a formal procedure for receiving and resolving complaints. The complaints procedure must give customers access to the Municipal monitoring unit when the complaint is not satisfactorily resolved by EDASSA.

- 2.13 Given the nature of the Project as a pilot, the Leasing Agreement will be reviewed after twelve months to ensure that it is operating according to the original intentions as set out above. The Project team from the IDB will be involved in the review.
- 2.14 It should be noted that environmental regulation is also important in the context of the Project. The overall environmental regulator is the Central Ministry of the Environment and Natural Resources, but the Municipality is entitled to issue a local ordinance enabling it to enforce the regulations. The Municipality will issue an ordinance for the regulation of discharges from industrial installations which will include provisions for the levy of appropriate sanctions.

III. THE PROJECT

A. Project objectives

- 3.1 The overall aim of the Project is to contribute towards the design of a model for the sustainable provision of potable water and sanitation services in Honduras at a local level. The Project will demonstrate the application of rules of eligibility related to the autonomy of the service provider, independent regulation, financial sustainability and community involvement which will be applied to the design of a future Investment Program.
- 3.2 The specific, and immediate, purpose of the Project is to ensure that Puerto Cortés itself has an efficient and sustainable arrangement for potable water supply and wastewater disposal services.

B. Project Description

1. Administration and Engineering (US\$1.39 million)

- 3.3 This component, which amounts to approximately 9% of the Project cost, includes: A) Project Management which is principally to cover the cost of the Project Manager who will be retained for implementation. It also covers a short term consultancy to initiate the Project and to prepare international bidding and prequalification documents for the Project Manager, the Works Consultant and the Construction Contractors. B) Supervision which represents the costs of the Work's Consultant who will be retained for producing the contract documents and supervision of the contracts for the construction of the Works. C) Project preparation: which covers costs the Municipality has incurred, or will incur, in the preparation of the Project, including: Costs of studies and designs that have been used for Project preparation; Costs of site investigations still to be undertaken prior to tendering for the Construction Works; and Costs of a consultancy for the design and creation of the Trust Fund through which funds related to the Project will be channeled. D) Reimbursement of PPF which repays the funds assigned by the Government of Honduras for Project preparation from a Project Preparation Facility, PPF, loan from the IDB.

2. Institutional Development (US\$784,000)

- 3.4 This component represents just under 5% of the Project cost and is designed to assist in the modernization process by strengthening the existing institutions prior to their reorganization as well as supporting the creation and start-up of the new institution EDASSA. There will be two sub-components.

- 3.5 Environmental Management (US\$240,000): The first of the sub-components deals with environmental issues, designed to heighten awareness of the environment and to assist the local authorities in its management. The sub-component will comprise: A) The design of an environmental monitoring program, a regime of monitoring to measure the impact of the Project and its benefits against benchmarks given in the Environmental and Social Impact Report. B) The support of the Municipality's environmental unit through a consultancy to strengthen its organizational, technical and logistical capability. C) The design and implementation of publicity and education campaigns which will develop an environmental awareness among the population, present their obligations, the benefits of the Project, and prepare them for any disruption that the Project will cause.
- 3.6 Sector Reform (US\$544,000): The second sub-component contains the activities relating to the institutional restructuring of the potable water and sanitation sector. It is aimed specifically at those organizations with direct responsibilities relating to potable water and wastewater services. The first set of activities are designed to support the creation of EDASSA. A Business Plan will be produced which will include a company organization, a policy statement, operating guidelines and a complete set of financial projections suitable for a prospectus for the sale of shares. Articles of Association for EDASSA and the Leasing Agreement will be drafted in detail. Other activities will include the sale of shares, the registration of EDASSA as a *Sociedad Anónima*, all activities leading to the liquidation of DAMCO, the transfer of personnel to the new company ^{4/} and the recruitment of new personnel required due to its expanded duties.
- 3.7 Another activity is designed to improve the control of potable water quality by the service provider (DAMCO at the moment and later EDASSA). This will be effected through the purchase of laboratory equipment and the training of the potable water treatment plant operating staff.
- 3.8 A final set of activities is designed to strengthen the Municipality's complementary functions. A) Infrastructure planning: A strategic plan for the development of the potable water and sanitation sector will be produced to meet the development needs of Puerto Cortés. This will lead to the production of the capital investment program that must be defined in the Leasing Agreement and which is required before EDASSA's Business Plan can be completed. B) Monitoring and enforcement: The Municipal staff that are to be allocated to the unit responsible for the Leasing Agreement will receive the training

^{4/} There has already been a rationalization of staff at DAMCO and the level of staffing is approximately what would be expected for an efficient service provider of equivalent size. It is anticipated that an accountant will be added to the existing staff.

necessary to enable them to carry out the monitoring and enforcement function.

3. Construction of Sewerage System (US\$10.87 million)

- 3.9 This component, which is equivalent to 67% of the overall Project cost, is the construction, on the peninsula and the high-density urban area on the mainland, of sewage disposal infrastructure comprising a network of collectors, interceptors, pumping stations and facilities for the treatment and safe discharge of effluent. A comprehensive sewerage system will be completed in various phases as the population of Puerto Cortés grows. The Project will finance the first phase which, when it is complete, will provide sewage disposal services for all areas where the population density is greater than 3,000/km², representing 56% of the urban population 5/.
- 3.10 The Works that are the subject of the Project can be divided into a "global" system and an "isolated" system. The global system will be the sewerage network and pumping stations on the peninsula and the low-lying area on the mainland close to the bridges that give access to the peninsula at the entrance to the Alvarado Lagoon. It also comprises a treatment plant in the swampy area on the north-eastern edge of the Lagoon. The plant comprises stabilization basins divided into two modules; a third module can be added at a later date. Each module comprises two parallel anaerobic basins, a facultative basin and two maturation basins in series. There is also an isolated system which will serve centers of population on the mainland which cannot be connected to the peninsula for topographic reasons. This system has its own network and two small, anaerobic treatment plants.
- 3.11 The Works construction will be divided into three contracts to suit different construction specialities. These packages are: A) Sewerage on the peninsula (US\$6.24 million), B) Works on the mainland including part of the global system and the isolated system (US\$1.87 million), and C) The sewage treatment plant on the peninsula (US\$1.94 million).
- 3.12 The design and implementation of a program to prevent and mitigate the negative environmental impacts that have been identified in the Environmental and Social Impact Report, such as erosion protection and tree planting, will be included in the Works contracts.
- 3.13 A further item is the financing of domestic connections (US\$814,000). It is vital to the success of the Project that all potential users are connected to the sewerage system but it is thought that the cost of the connection, approximately Lps1,000

5/

The Project covers most of the population on the peninsula where the problems associated with septic tanks are most acute. There will be a continual program of expansion of sewerage services as the population grows. Designs are already available for two new isolated systems on the mainland and the investment necessary has been taken into account in the financial analysis for the Project.

(US\$77), will be a disincentive. A fund will be available to enable local plumbers to make the household connections for all domestic customers. The fund will cover: A) for those households with latrines, the cost of a low-volume, flush toilet and connection to the system, and B) for all other households with a flush toilet, the cost of connection only. The cost of the domestic connections will be covered through the overall tariff to all users.

<u>Construction of Sewerage System: Statistics</u>	
Treatment Plant	
Type:	Stabilization lagoons (three-stage process)
Capacity:	Two streams, each with a capacity of 107L/s
Area required:	34Ha
Earthmoving volume:	252,830m ³
Global Sewerage on peninsula and mainland	
Total length of pipe:	89,339 m
Pipe material and diameter:	PVC, 150 to 500mm
Volume of trench excavation:	120,625m ³
Pumping stations above 100L/s:	4
Pumping stations below 100L/s:	10
Connections:	10,879
Isolated Sewerage on mainland	
Total length of pipe:	2,479 m
Pipe material and diameter:	PVC, 150mm
Connections:	219
Treatment plant:	Two anaerobic plants (septic tank, filter and infiltration zone)

4. Complementary Activities (US\$546,000)

- 3.14 This component corresponds to the costs of acquiring the land required for the construction of the works. Also included is the cost of any relocation for the two families that may be affected by the works.

5. Non-specific and Financial costs

- 3.15 A budget for non-specific costs, amounting to 13% of the Project cost, is allocated in the following way: A) Contingencies (US\$1.09 million) calculated as 10% of the construction costs, and B) Escalation (US\$993,000).
- 3.16 Financial costs represent 3% of the Project cost : A) Interest (US\$281,000), B) A credit fee (US\$105,000), and C) The cost of the IDB inspection and supervision (US\$138,000).

C. Financing the Project

- 3.17 The cost of the Project is given in the Table below. The total cost of the Project is US\$ 16.20 million, of which US\$13.80 million will be lent by the IDB and US\$2.40 million will funded as local counterpart.

Table: Cost of the Project and Sources of Finance (US\$'000)				
Categories	IDB	Local	Total	%
1. Engineering and Administration	1,096	295	1,391	8.6%
Project management	555	0	555	
Supervision	541	70	611	
Project preparation	0	90	90	
Reimbursement of PPF	0	135	135	
2. Institutional Development	784	0	784	4.8%
Environmental management	240	0	240	
Sector reform	544	0	544	
3. Construction of sewerage system	9,674	1,200	10,874	67.1%
Sewerage on the peninsula	5,748	491	6,239	
Sewerage on the mainland	1,718	147	1,865	
Treatment plant	1,791	153	1,944	
Environment mitigation	10	2	12	
Domestic connection fund	407	407	814	
3. Complementary Activities	0	546	546	3.4%
Land acquisition	0	546	546	
SUBTOTAL	11,554	2,041	13,595	83.9%
Non-specific costs	1,827	254	2,081	12.9%
Contingencies	968	120	1,088	
Escalation	859	134	993	
Financial Costs	419	105	524	3.2%
Interest	281	0	281	
Credit fee	0	105	105	
Inspection and supervision	138	0	138	
TOTAL	13,800	2,400	16,200	
% of Total				
	85.2%	14.8%		

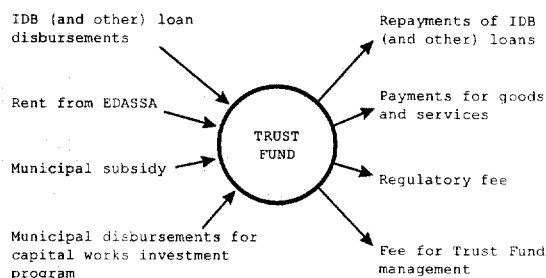
3.18 The loan of US\$13.80 million from the IDB will be financed by the Fund for Special Operations, FSO, and will be offered with the following conditions: A) Period of amortization, 40 years; B) Disbursement period, 4 years; C) Grace period, equivalent to the disbursement period plus six months; D) Interest rate, 1% for the first ten years and 2% thereafter; E) Credit fee, 0.5% of funds undisbursed; and F) Monitoring and inspection, 1% of the amount of the Loan.

3.19 The use of FSO is justified by the general poverty in Honduras, one of the poorest countries in Latin America. The Project will benefit a large number of low income families. The Project is important as a pilot for efficient service provision in a country

that is rapidly decentralizing. The success of Projects like this is imperative if the provision of local services is ever to be efficient enough to improve the lot of the population.

3.20 To promote responsible **Trust Fund Mechanism**

financial management, a fund will be created for the purpose of managing the resources related to the potable water and sewerage infrastructure. This will ensure that the funds are completely separated from funds for other public services. Disbursements from the IDB loan will be made to the Municipality, which will, in turn, deposit the disbursements into this fund. The fund will also receive: A) disbursements from other loans for the potable water and sewerage capital works program provided that agreement is reached with USAID, the only other lender at the moment, B) the rent paid by EDASSA, C) any capital subsidy from the Municipality, and D) disbursements from the Municipality for the capital works investment program.



The fund will also receive: A) disbursements from other loans for the potable water and sewerage capital works program provided that agreement is reached with USAID, the only other lender at the moment, B) the rent paid by EDASSA, C) any capital subsidy from the Municipality, and D) disbursements from the Municipality for the capital works investment program. The repayment of the loan to the IDB will be made by the Municipality with resources from the fund. The fund will also be used: E) to make repayments to other loans for potable water and sewerage infrastructure, F) to pay all certificates for work undertaken on the Project and the Municipality's capital works program, G) to meet the Municipality's costs in monitoring the Leasing Agreement as well as other regulatory costs, and H) for all fees associated with the management of the fund. The fund will act as an account where deposits and payments will be made in accordance with specific instructions from the Municipality. Disbursements from the loan to the Municipality will be subject to the standard provisions of an IDB loan contract related to advances and disbursements. It will be managed as a Trust Fund using a private bank as trustee. Any change in the use of the funds will be transparent, guarding against their use for purposes other than those for which they were intended. The fund will be designed by a consultant, working with a private bank and the Municipality, and put into effect as a condition precedent to the first disbursement.

3.21 In accordance with IDB policy, the Government of Honduras will act as guarantor for repayment of the loan. The Municipality and the Government of Honduras, will enter into an agreement setting out the terms and conditions of the guarantee. One of the terms of the agreement will be that the transfer of the 4% port fees for capital works every year will be conditional upon performance of the Municipality under the loan contract with the IDB. The 4% port fees have been verified as more than sufficient to cover the

Municipality's obligations. It is in the interest of all parties to ensure that the Project is structured in a way that is sufficiently solid to make calling of the guarantee unlikely. Apart from the adequacy of the tariff to pay the lease rent and the financial capacity of the Municipality itself, the Municipality will be required to ensure that the Trust fund always contains sufficient cash to cover the debt service, as well as counterpart obligations, for the subsequent twelve months.

D. Retroactive expenses

- 3.22 Expenses up to the amount of US\$ 51,000 will be recognized as part of the local counterpart to the loan. This will cover the costs the Municipality has already incurred for studies and designs included in Project preparation (Paragraph 3.3C).

IV. PROJECT IMPLEMENTATION

- 4.1 The Borrower will be the Municipality of Puerto Cortés who will also be responsible for the availability of counterpart funds. The Government of Honduras will guarantee the repayment of the Loan to the IDB in the event of default by the Borrower. The Municipality will assume responsibility for implementing the Project and for undertaking all of the obligations of the loan contract.
- A. Overall Project Management
- 4.2 The selection of an expert Project Manager is crucial for the efficient implementation and, for this purpose, a private Project Manager will be retained for the Project. The Project Manager will be contracted by the Municipality of Puerto Cortés and will have full responsibility for the delivery of all of the Project components as set out in a timetable to be agreed with the Municipality. The Project Manager will be explicitly responsible for planning, control and coordination of the various consultants, suppliers, agents and contractors involved in the implementation of the Project and will be responsible for the procurement of all contracts with these parties. The contract will give the Project Manager the authority necessary to implement all aspects of the Project. The remuneration of the Project Manager will be linked to the timely completion of the Project 6/. The Project Manager will be an individual or a firm with its own technical support team. The Project Manager will be provided with an office in the Municipal Building and will have a computer and a vehicle supplied under the Project 7/.
- 4.3 The performance of the Project Manager will be monitored by an ad-hoc Technical Committee which will comprise the Municipal Administrator, the Municipal Engineer and the General Manager of the service company (DAMCO in the first instance and then EDASSA).
- 4.4 A Short-Term Consultant will be retained to undertake various tasks related to the rapid initiation of the Project. The specific results required of the Short-Term Consultant will be: A) Recruitment of the Project Manager, B) Completion of the precedents to recruitment of the Works Consultant (see 4.10 below), and C) Completion of the prequalification procedures for the Works Contractors (see 4.14 below).

6/ The contract will protect the Project Manager from being penalized for delays caused by actions or inactions of the Municipality or the IDB.

7/ The Project Manager could also be responsible for other aspects of the Municipality's potable water and sewerage capital works program. This might involve a comparatively small effort, limited to, say, the household metering program. However, the viability of EDASSA, and therefore of the Project will be, to a certain extent, dependent on these investments.

B. Institutional Development Component

- 4.5 An Environmental Consultant will be retained to assume responsibility for the development of: A) an organizational model and procedures for the Municipal Environmental Unit (UAM), B) a training program for the staff of the UAM, C) mechanisms of cooperation with the Ministry of Health and the Ministry of the Environment and Natural Resources and the ordinance required to allow the Municipality to regulate industrial discharges, D) the environmental monitoring program. Although it is envisaged that the majority of formal programs of water sampling and analysis will be contracted out g/, the Consultant will be responsible for the selection of portable test-kits and laboratory equipment to be used by the UAM for certain necessary tests. The Environmental Consultant will also be responsible for selecting the equipment for the laboratory at the potable water treatment plant and training the operators in its use. The consultant may be a firm or an individual and will have broad experience in the water and sanitation industry and will be particularly familiar with potable water, domestic wastewater and industrial wastewater processes.
- 4.6 A Publicity Agent will be retained to design and implement the education and publicity program. The program will be implemented in stages over the life of the Project to ensure that the important benefits remain in the public eye and that the population is prepared for any temporary disruption caused by the implementation of the Project. The Publicity Agent will be free to use any tools that are appropriate but the program will be required to contain certain elements such as a comprehensive media campaign and a campaign in the schools of Puerto Cortés. The Publicity Agent is likely to be an individual with experience in similar public awareness campaigns.
- 4.7 A Business Consultant will be retained for the creation of EDASSA and for the management of all of the necessary procedures to wind up DAMCO and to initiate the operations of the new company. The consultant will assist the General Manager designate of EDASSA in writing a business plan for the company which will contain detailed financial projects for the company. He will also produce the Memorandum and Articles of Association and a Shareholders' Prospectus. The Business Consultant will calculate the tariff and draft the Leasing Agreement between the Municipality and EDASSA. Once the new company has been registered and the Leasing Agreement has been signed, the consultant will help the Municipality and DAMCO to wind up the affairs of the old water division, terminate or transfer the personnel to EDASSA and start up the new company. The Consultant will be a firm or consortium of consultants with: A) the commercial expertise to undertake financial projections and write a business plan, B) the legal expertise to write the Articles

g/ The capability for laboratory analysis exists in DIMA, the Municipal Water Division in San Pedro Sula, and in various private laboratories in the area.

of Association and the Leasing Agreement, and C) the expertise necessary for calculating the tariff and drafting the other technical conditions related to the Leasing Agreement.

- 4.8 A Planning Consultant will be contracted to draw up the strategic water and sanitation plan with the Municipality. The Planning Consultant will work with the consultants that are being retained to produce an urban master plan for Puerto Cortés ^{9/}. The consultant will be a firm with the ability to analyze demand for services and the availability of secure raw water sources.

C. Construction of the Sewerage System

- 4.9 The construction of the Works will be effected by the letting of three turnkey contracts with construction companies.
- 4.10 A single Works Consultant will be retained to A) prepare the bidding documents for the construction contracts, and B) supervise the Works. To expedite the process of selection of the Works Consultant, the Short Term Consultant, retained to initiate the Project, will complete the prequalification procedures and prepare a full assessment of suitable candidates to enable the Project Manager, when he is recruited, to make the final selection. The Works Consultant will be a conventional firm of water and sanitation consulting engineers. They will be required to demonstrate their expertise at: A) the management of turnkey contracts, and B) supervision of works similar to those to be let in Puerto Cortés.
- 4.11 The division of the Works among three Contractors is based on the construction techniques required for each. The contract for the sewerage system on the peninsula is the most specialized and requires particular expertise in dewatering to enable pipes to be laid and underground pump stations to be built in loose soils with a high water table. The treatment plant on the peninsula is essentially an earthmoving project. The Works on the mainland should present no technical difficulties. It is possible that the advantage, from a planning and control point of view, of letting a single construction contract would outweigh the advantages of dividing the works, and individual companies will not be restricted from tendering for more than one of the contracts.

^{9/}

The urban master plan for Puerto Cortés will be produced with financing from an IDB Technical Cooperation, ATN/CP-5595-HO.

The Turnkey Construction Contracts:

Basic obligations:
Municipality.
A. To make available the sites for the Works.
B. To pay the Contract Price.
Contractor.
A. To design, construct and put into operation the Works for their specific purpose as set out in the Contract Documents.
Basic liabilities, risks:
Municipality.
Force Majeure and Special Risks.
Contractor.
Insurance of Works, public liability and labor laws.
Contract Price and payment:
Lump sum, firm price. Escalated by formula.
Paid against monthly certificate of the Works Consultant.
Incentives and sanctions:
Liquidated damages for delay.
Suspension and termination procedures for default.
Disputes procedures:
Resolution by expert panel or arbitration.
Other parties:
Municipality's powers delegated: A) to Project Manager for timetable monitoring and control, and B) to Works Consultant for quality control.

- 4.12 The Contractors will have turnkey responsibility to design, construct, test and commission the Works. The Contractors will be required to follow the design concepts already established, including: the area to be covered, the main collector routes, the type and location of the treatment plant on the peninsula. The Contractors will be constrained by a specification for the Works based on normally acceptable international engineering and construction practice.
- 4.13 The Construction Contracts will be based on the FIDIC Model Form 10/ for International Turnkey Construction Contracts, or a similar acceptable format.
- 4.14 The prequalification process for potential contractors will be initiated by the Short Term Consultant. He will be responsible for the procedures up to the production of the short list, which will be confirmed by the Project Manager when he is appointed.
- 4.15 Low-flush toilets and fittings for the household connections will be purchased under the management of the Works Consultant. The installation of the connections and, for qualifying households, toilets will be undertaken by plumbers that have been certified for the purpose by EDASSA or the Municipality. The plumbers will be instructed to make a connection by the Works Consultant, who will certify that he may draw the necessary materials from the store. The plumber will make the necessary connection which will be inspected by the Works Consultant who will issue a certificate for payment.

10/ The Fédération Internationale des Ingénieurs-Conseils, Lausanne, Switzerland, who publish the so-called "Orange Book", Conditions of Contract for turnkey contracts. There are several other, internationally accepted forms of turnkey contract available.

D. Other Components

- 4.16 The land requirements for the Works have been identified, as has title to the land. Fifty-five individuals have full title to land that must be acquired for the Project. This represents only a small portion of the total, the rest being already reserved for use by the Municipality. No difficulties are anticipated in acquiring the land, but, in the last resort, the Municipality has the right to expropriate the land for public works. Full acquisition of the land will be a condition precedent to the IDB's approval of the call for bids for the construction contracts.
- 4.17 Two families have been identified as living informally where they might be affected by the works. The IDB will require that any relocation of these families that might be necessary is included in the land acquisition.

E. Acquisition of Goods and Services

- 4.18 International bidding will be used for: A) Works contracts with an estimated value greater than US\$1.5 million, B) Purchase of goods contracts with an estimated value of greater than US\$250,000, and C) Consultancies with an estimated value of greater than US\$200,000. Contracts for goods and services below these limits will be let as set out in the relevant national legislation and Municipal regulations.

F. Time Schedule for Project Implementation

- 4.19 The basic milestones for the implementation of the Project are given in the Table below.

<u>Time Schedule</u>	
Project approval	November 1997
Compliance with conditions precedent to first disbursement	March 1998
Project Manager retained	March 1998
Works Consultant retained	May 1998
All land acquired and cleared	June 1998
EDASSA formed and Leasing Agreement effective	December 1998
Works Contracts effective	January 1999
Works complete	December 2001

G. Supervision, Follow-up and Evaluation

- 4.20 At the time of his appointment, the Project Manager will confirm the Project Plan which will then become the Project Baseline against which performance will be measured. The Project Manager will produce a progress report every three months which will be endorsed by the Municipality's ad-hoc Technical Committee. The report will state progress in terms of time spent, objectives delivered and funds disbursed for the different components all measured against the Project Baseline. Any negative deviation from

the Project Baseline must be detailed in the report along with remedial action to be taken.

- 4.21 Routine monitoring of the Project will be undertaken by the Specialist in the Country Office. The Project Team will visit Puerto Cortés to evaluate progress on the Institutional Component, A) When drafts of the constitution of EDASSA and the Leasing Agreement are available, and B) after 12 months of operation of the Leasing Agreement, when it is due for review. Thereafter the Project Team will make a visit of one week each year during Project implementation.
- 4.22 The Municipality will retain an independent auditor to review the Project accounts every year. The independent auditing of the accounts of EDASSA will be a requirement of the Leasing Agreement. Both sets of audited accounts will be submitted to the IDB for review within 90 days of the end of each financial year.
- 4.23 The Municipality have raised no objections to expost evaluation which, given the important demonstrative purpose of the Project, is extremely important. This evaluation will be carried out by the IDB two years after final disbursement of the loan, to coincide with the end of the first term of the Leasing Agreement. The Environmental and Natural Resources Division, Region 2, of the IDB will be responsible for finding an appropriate source of funds for the evaluation.

H. State of Preparation

- 4.24 The sewerage system for the city of Puerto Cortés was designed in detail in 1990. Various alternatives were considered and a solution selected which consisted of the global system and the small isolated system on the mainland in large measure as described above.
- 4.25 During the preparation of the Project, some important modifications have been made to the design. The type of treatment for the global system has been changed to stabilization basins and the plant has been re-located to the borders of Alvarado Lagoon into which the treated effluent will now be discharged. This was an alternative to the original design which contemplated disposal through a long sea outfall. The original design showed no cost advantage, would have had a longer design lead time and may well, given the uncertainties of the design, have resulted in a more expensive project. Some other, limited, changes have been made to the specifications and design ^{11/}.

^{11/} These changes are: A) an increase in the minimum incline used for the collection networks and a repositioning of pumping stations to improve hydraulic performance, B) a decrease in the number of inspection manholes to simplify maintenance and reduce cost, and C) a change from concrete to PVC pipe for the larger diameter collectors.

- 4.26 The technical documentation available includes all previous studies, calculations, budgets, detailed and general plans and recommendations concerning the operation and maintenance of the system. The design has been reviewed with the help of consultants and specialists from the IDB.
- 4.27 A site investigation of the land will be carried out to confirm the capacity of the ground to support the stabilization basins. A study will also be undertaken to verify the quality and quantity of the material available in the quarries. Once this is available, there will be sufficient information to go out to tender for turnkey construction contracts with a high level of confidence.
- 4.28 The Municipality, with the help of the IDB, has already advanced in the preparation of the Institutional Development component of the Project. The basic institutional and contractual framework for the provision of potable water and sewerage services for Puerto Cortés has been developed, with the Municipality, by a consultant retained to undertake a detailed Financial and Institutional Study of the Project 12/. The proposal has been presented to the Municipal Corporation where it was accepted at their meeting of August 13th, 1997. The Municipality must still take certain decisions relating to the distribution of shares. Once these have been taken, sufficient information is available to enable the Business Consultant to draft the Articles of Association of EDASSA.
- 4.29 The provisions of the Leasing Agreement have also been detailed in the Financial and Institutional Study to the extent that the Business Consultant will be able to draft the Leasing Agreement. The principles of the tariff calculations have been defined by the consultant and detailed estimates derived for the financial analysis of EDASSA. The tariff calculation must be revised, before the Leasing Agreement is put in force, on the basis of more accurate demand information that will be available during 1998 following the installation of household metering in Puerto Cortés.
- 4.30 A financial model with detailed projections for the Trust Fund and EDASSA has been produced which will be used as a basis for the business plan for EDASSA.

12/

See Annex 6.

V. PROJECT VIABILITY

A. Technical Viability

- 5.1 The Project is feasible and justifiable from a technical point of view. It provides an integrated and rational solution to the public health and environmental problems caused by the absence of adequate means of disposing of the city's wastewater.
- 5.2 The concepts of the Project and actions proposed result from extensive studies, commenced in 1990 and recently updated. The design of the Works has been prepared in accordance with internationally recognized engineering standards and technical criteria. Approximately 80% of the Works, by value, have been designed in detail, the balance having been designed to the extent that locations, dimensions and quantities are available.
- 5.3 The population growth rate on which the size of the Project has been estimated using past and present urban growth rates. Potable water consumption has been deduced from estimates of water presently supplied and by taking into account the program of household metering and extensions to the potable water system that are being planned.
- 5.4 The designs proposed represent the best technical and economic alternative. Factors such as the need for unskilled operation, less reliance on electro-mechanical equipment and less harm to the environment lead to the selection of stabilization basins for the treatment method. The solution adopted is tried and tested in similar locations worldwide. Technical feasibility is further enhanced by the proximity of quarries for material for the construction of the bunds round the stabilization basins.
- 5.5 Cost estimates have been undertaken in detail based on an analysis of updated unit prices. The implementation time-table has been developed taking into account the complexity of the Works and the lead time required for the acquisition of materials.
- 5.6 Adequate operation and maintenance of the works will be assured by stipulating in the Leasing Agreement the application of certain levels of operation and maintenance. The company will be required to present an annual maintenance plan which must include details of the organization responsible and the resources which will be committed to the activity. The maintenance will be aimed at preserving the infrastructure as close as possible to its original condition. The operating and maintenance requirements will stipulate compliance with measures defined in the Environmental and

Social Impact Report, particularly relating to the monitoring of the treatment plant effluent and the disposal of sludge.

- 5.7 Puerto Cortés is susceptible to earthquakes and high intensity rainfall which leads to flooding of the rivers. The works are designed with these natural disasters in mind. The pipe network is flexible and does not merit special design to protect it from the effects of the disasters mentioned. The bunds round the stabilization lagoons are 1.5 meters above the flood level of the Alvarado Lagoon and approximately 0.75 meters above the average ground level in the peninsula ^{13/}. All precautions necessary will be taken during construction to prevent flooding of the Works.

B. Economic and Financial Viability of the Project

- 5.8 The principal benefits perceived by the domestic consumers result from the elimination of septic tanks. The deficiencies in the present wastewater disposal system also contribute to the proliferation of disease carriers, the generation of filth and foul smells, as well as the contamination of beaches, ground and surface water.
- 5.9 To determine the perceived benefit for domestic users, the Contingent Valuation procedure was used, the results being based on a survey of heads of household selected at random from future users. The nature and scope of the service to be provided was explained, as well as the corresponding costs in terms of a tariff to be added to the water bill. The answers obtained were used to estimate the arithmetic mean of the Willingness-to-Pay. This amount was used to quantify the expected benefit for domestic users.

<u>Willingness-to-Pay for Sewerage Services</u> (US\$/month/connection)		
	Willingness-to-Pay	
	Mean	Median
Total population	6.45	5.82
Peninsula	7.56	6.83
Mainland	4.81	4.35
Sensitivity of Willingness-to-Pay to different variables		
	Increment in mean	Increment in median
Moving from the mainland to the peninsula	2.52	2.27
Having children in the family	1.45	1.31
Owning compared with renting property	2.39	2.16
Having a septic tank	1.37	1.23
Increasing monthly income per family by US\$76 (Lps1,000)	0.77	0.70

- 5.10 An average Willingness-to-Pay per household of US\$6.45/month was obtained for the population as a whole. It was noted that the

^{13/} The Municipality of Puerto Cortés is implementing a parallel stormwater drainage program which will decrease flooding in the city.

Willingness-to-Pay for people living on the peninsula was markedly greater than that for people living on the mainland. This difference confirms the validity of the procedure and is explained by the fact that the mainland has less problems than the peninsula; it is not as flat and the water table is deeper. The septic tanks do not require emptying or replacement as frequently and there are consequently fewer pollution problems.

- 5.11 There will also be substantial benefits for the industrial users located in the Free Zone, where there are 5,000 employees, and where an additional industrial site of similar size is due to be completed within two years. These benefits correspond to the saving from not needing to install and operate, at each site, a facility for the treatment and discharge of the effluent into the sea in an environmentally satisfactory manner. Benefits perceived by other industrial users, as well as by commercial and public users, are estimated to be similar to those measured for the residential users, corrected in proportion to their potable water bill compared with the bill of the average domestic consumer.
- 5.12 A summary of the economic cost-benefit analysis is given in the table below.

<u>Economic Evaluation</u>						
(All figures in US\$1000/year)						
	WTP ¹ Domestic	Savings to ENP ²	WTP Others ³	Total Benefits	Total Costs ⁴	Net Benefits
NPV ⁵ 1998 to 2023	5770	2172	3955	11896	10880	1016
Economic Internal Rate of Return:						13.2%
¹ WTP = Willingness-to-Pay. ² Benefit derived from savings from not having to construct their own plant. ³ Includes industrial (outside the Free Zone), commercial and public. ⁴ Includes investment and operational costs.						

- 5.13 The local authorities and private sector representatives consider that the Project will contribute important, indirect benefits by promoting a more vigorous expansion of tourist, industrial and commercial activities. Since quantifying these benefits is difficult and imprecise, they have not been considered in the economic analysis. Therefore, the IRR, of 13.2%, calculated from the direct benefits perceived by the users is a conservative estimate of the economic return for the Project.
- 5.14 A full financial analysis of the "without Project" scenario shows that the average, long-run tariff necessary for the provision of potable water services only would be Lps2.44/m³ (US\$0.19/m³) for 1999 to 2003, the term of the Leasing Agreement, and Lps2.02/m³ (US\$0.16/m³) from 2004 to 2015.

- 5.15 The exercise was repeated, adding the costs of the proposed sewerage system to give a "with Project" scenario. The average, long-run tariff required to cover the costs of sewerage only is Lps3.31/m³ (US\$0.25/m³).
- 5.16 An increasing-block tariff structure is proposed to generate the average tariffs required to cover financial costs as calculated above and which results in bills within the Willingness-to-Pay of the families of Puerto Cortés. The planned extension of metering to all consumers during 1997 and 1998 makes this tariff system feasible. The tariff structure is based on the following principles: A) It is easy to administer, because it does not require any type of means testing or geographical stratification, B) it is horizontally equitable, because it gives equal treatment to consumers with equal consumption, C) it meets the goal of assuring affordable basic consumption, regardless of income level, and D) it encourages moderate consumption. The proposed structure has three tariff ranges: a minimum, fixed charge for up to 15m³/month (100Liters/person-day); a charge for moderate or normal use based on actual consumption between 15_m³ and 30_m³/month; and a charge for high use based on consumption above 30_m³/month. The proposed charges are described below and a comparison of monthly bills for consumers before and after the project is given on the following table.

<u>Comparison of water and sewerage bills before and after the Project</u>				
	Present	Future with Project		
	Water	Water	Sewerage	Combined
<u>Domestic Consumption</u>	(Lps/month)	(Lps/month)	(Lps/month)	(Lps/month)
15 (m ³ /month), note-	20 or 30	22.50	7.50	30.00
30 (m ³ /month), note-	30	52.50	37.50	90.00
60 (m ³ /month), note-	120	202.50	187.50	390.00
<u>Industrial Consumption</u>				
30,000 (m ³ /month), note-	180,000	150,000	150,000	300,000

Notes:

- 1. For the majority of consumers, monthly bill based on charge of Lps1.00/m³ and an assumed consumption of 20m³ (low income consumers) or 30m³ (middle income consumers). The division between low and middle income consumers is by neighborhood and is not means tested.
- 2. High income consumers are charged Lps2.00/m³ and meters are being installed to measure consumption.
- 3. Only the National Port Company, the largest customer, consumes this quantity of water.

- 5.17 The fixed charge for low consumption would be based on a rate of Lps1.50/m³ (US\$0.12/m³) for potable water plus a rate of Lps0.50/m³ (US\$0.04/m³) for sewerage and would result in a monthly bill for the combined services of Lps30 (US\$2.30). For the poorest 10% of the population, the charge of Lps30 is within the World Health Organization guideline which states that no more than 5% of household income should be paid for combined potable water and sewerage services. The fixed charge is sufficient to cover the costs of operating and maintaining the system.

- 5.18 The normal-use tariff of Lps2.00/m³ (US\$0.15/m³) for water and Lps2.00/m³ (US\$0.15/m³) for sewerage is proposed. A family that consumed 200L/person-day of potable water (30m³/month for the average family) would be faced with a monthly bill of Lps52.5 (US\$4.03) for water and Lps37.5 (US\$2.89) for sewerage. This charge for sewerage is well within the reported average Willingness-to-Pay figure of US\$6.45/month. The monthly bill for combined potable water and sewerage services would be Lps90 (US\$6.92).
- 5.19 The tariff for high consumption, above 30m³/month, is designed to signal the long-run marginal cost of supplying the services and has been calculated as Lps5.00/m³ (US\$0.38/m³) for water and Lps5.00/m³ (US\$0.38/m³) for sewerage. A household consuming 60m³/month will be faced with a bill of Lps390 (US\$30).
- 5.20 The Municipality will ensure that the increase in potable water tariffs is enforced during 1998, prior to the commencement of the Leasing Agreement with EDASSA. At this stage households consuming 30m³/month will face a tariff increase of 75% (from Lps30 to Lps52.5). The installation of the sewerage system will be effected over the three years 1999 to 2001 and the new tariff will apply as soon as there is an obligation on behalf of the individual consumer to pay.
- 5.21 The "with project" and "without project" scenarios, based on the tariff structure detailed above, produce the financial ratios given in the Table below. These financial ratios are those recommended for monitoring the performance of water companies by the American Water Works Association. The analysis is usually undertaken for a utility that owns its assets and the ratios are based on a consolidated balance sheet for EDASSA and the Trust Fund. All of the ratios show a healthy position.

<u>Financial Ratios</u>			
(Figures given are averages for the years 2000 to 2010.)	Recommended	Without project	With project
Current ratio (Current assets/current liabilities)	1.5 to 2.0 minimum	25.0	18.8
Debt-equity ratio	2.0 to 3.0 maximum	0.2	1.1
Operating ratio (Total income/operating expenditure)	greater than 1.2	2.8	3.1
Debt coverage (Net cash income/debt service)	greater than 1.5	2.5	2.2
<small>From JORDAN, CARLSON and WILSON, "Financial Indicators Measure Fiscal Health". Jour. AWWA, 89,8,34 (August 1997)</small>			

- 5.22 In order to ensure that the total projected tariff revenue is consistent with the required income of the company, the system will be recalibrated on the basis of detailed consumption data during the first half of 1998, when 40% of DAMCO users will have metered consumption. In addition, a review will be undertaken after one

year of operating experience, since little is known about the price elasticity of demand in the relevant ranges and real consumption (and income) may turn out to be different from that assumed in the projections.

- 5.23 The "with project" scenario shows that the tariff collected would cover: 1) all administration, operating and maintenance costs, 2) a return of 20% on the investment in EDASSA, and 3) the lease rent paid into the Trust Fund. The Trust Fund, as shown in the Table below, would contain sufficient resources to cover the costs of all investment in potable water and sewerage until the year 2010, at which time additional contributions from the Municipality, or further borrowing, would be required.

Trust Fund: Sources and Applications, 1999 to 2010 (Lps. millions, real 1996 ^{1/})												
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Rent	9	11	13	14	15	15	15	15	15	17	17	17
Loans, donation	88	44	11	5	0	0	0	0	0	0	0	0
Municipal ^{2/}	16	6	0	0	0	0	0	0	0	0	0	10
Interest	^{1/}	^{1/}	^{1/}	1	1	2	2	1	1	1	1	1
Total Sources	113	58	27	20	17	17	16	16	16	18	18	28
Debt service	4	4	4	5	9	9	9	9	9	9	9	9
Regulation	1	1	1	1	1	1	1	1	1	1	1	1
Investment	104	53	15	8	3	8	7	3	4	6	6	17
Fund manage.	1	1	1	1	1	1	1	1	1	1	1	1
Total Uses	109	58	21	15	14	19	18	14	15	17	17	28
Balance	4	0	6	6	2	-2	-2	2	1	1	1	0
Accumulated	4	4	10	15	17	16	13	15	17	17	18	18

^{1/} Note rounding errors. ^{2/} Zero to the nearest significant figure. ^{3/} It is assumed that the Municipality will contribute to the fund in 2010 for investments in projects to expand potable water supply. The funds could come from a further loan.

C. Institutions and their Financial Viability

- 5.24 The Municipality is in a financially sound position. It runs a strong current account surplus thanks to changes in the ability of Municipalities to collect taxes following the new Municipal law of 1990 and the promotion of tax compliance as a citizen's obligation in return for good service provision. The high capital income reflects, principally, capital transfers from the central government of a 4% levy on port and customs charges ^{14/}. The only long-term debt held by the Municipality is a loan from USAID for

^{14/}

The levy on port and customs charges is payable in port cities under legislation which dates from 1986 and which was consolidated in the Municipal Law of 1990.

new raw water intake works on the River Tulian. The disbursed amount to date is approximately US\$650,000 and will rise to US\$1.8 million in 1998. The following table summarizes the current account of the Municipality to 2001, and provides for the contributions and counterpart funds required of the Municipality for the Project.

- 5.25 DAMCO operates the potable water system with a reasonable level of competence. Despite the fact that complaints have dropped substantially since the Municipality took over responsibility for the provision of water services, the survey used for the Contingent Valuation showed that both the quantity and quality of the potable water remain a concern of the consumers. The problems are being addressed: A) a USAID loan is being used to improve the delivery of water to areas that presently suffer shortages, and B) the Project, by improving the operation of the laboratory at the potable water treatment plant, will improve the control of the quality of potable water.

<u>Municipality of Puerto Cortés: Summary Income and Expenses</u>					
	(Nominal L million)				
	1994 ^a	1995 ^a	1996 ^a	1997 ^b	1998 ^c
Current income	7.3	11.1	22.7	25.8	36.4
<u>Less:</u>					
Operating costs	8.8	7.6	8.2	10.8	15.9
Transfers	2.3	2.2	4.5	5.2	13.1
Public debt	0.4	1.3	1.2	0.7	4.3
Current account savings:	-4.2	0	8.8	9.1	3.2
Capital income	16.4	25.8	38.2	47.8	96.7
Balance for Investment:	12.3	25.8	47.0	56.9	99.8
Investments	6.1	21.0	49.9	53.2	96.0
Surplus:	6.2	4.8	-2.8	3.7	3.8
Notes: ^a Real, ^b Budgeted, ^c Preliminary budget.					

- 5.26 DAMCO's commercial activities are considered efficient, and they have recently been improved with technical help from the World Bank. Conversion to EDASSA will maintain or improve this efficiency, and an accounting function will be added to the organization. The present General Manager of DAMCO has played a significant role in the improvement of the division. He should be retained in the same position as the chief executive of EDASSA with a salary commensurate with that of a similar position in a private company. Salaries in EDASSA in general should be compatible with those of similar positions in the private sector.
- 5.27 EDASSA has been analyzed as a private company. It should be noted that EDASSA is a small company with very limited capital, whose only real asset is the Leasing Agreement. It could be represent an attractive business opportunity for local entrepreneurs if they

viewed the operating environment as stable, especially if there is promise of other opportunities in the future. Based on the financial model that has been constructed for EDASSA, it would have an IRR of 20% which, based on consultations with the private sector, is considered reasonable given the type of project. The requirement for capital will be only that necessary for the purchase of equipment and for working capital. This will be dependent on the terms of the Leasing Agreement relating to equipment requirements, but has been estimated, for the purpose of the financial modeling at Lps5 million (US\$385,000).

D. Environmental and Social Viability

- 5.28 During the process of project preparation an Environmental and Social Impact Report (ESIR), has been prepared. The Report originates from various studies and from the results of interviews with 10 different neighborhood focal groups, five women's groups and two commercial interest groups. The environmental and social impact of the Project is overwhelmingly positive due mainly to an expected increase in health and quality of life which result from the reduction in contamination of standing and groundwater by overflowing septic tanks. There will also be a reduction in pollution of the bodies of water that receive untreated domestic and industrial wastewater. The ESIR gives benchmark indicators for health and water quality against which the impact of the Project will be measured.

Indicators

Health indicators: Cases of diarrhea, intestinal parasites and skin infections registered in Ministry of Public Health hospitals and clinics in Puerto Cortés. Baseline is the number of cases in 1995, 1996 and 1997.

Water quality indicators: pH, suspended solids, dissolved oxygen, Biochemical Oxygen Demand, Chemical Oxygen Demand, nitrogen, phosphorus, sulfates, total and fecal coliform bacteria. These indicators will be determined for nine different sampling points in the Alvarado Lagoon, the water courses that feed it and the sea. Baseline will be the values determined during the studies for the ESIR.

- 5.29 The wastewater treatment plant will produce an effluent of secondary quality which will discharge into a swampy area between the plant and the Alvarado lagoon. The vegetation in this area will further reduce nutrients in the effluent which will have characteristics considerably better than the national standard for waters to be discharged into open receiving bodies. The effluent is not expected to cause any harm to the lagoon ^{15/}. The design of the wastewater treatment plant is such that it can be easily upgraded if necessary for more efficient nutrient removal in the future. Desludging of the treatment plant will not be necessary during the first eight years of operation. After that, sludge volumes that must be disposed of are comparatively small. The ESIR identifies possible sites for the disposal of sludge at that time.

^{15/}

The Alvarado Lagoon is already badly contaminated with wastewater that flows down the Chamelecon River from San Pedro Sula and Choloma. The discharge of effluent will only have a small impact, possibly positive, on overall water quality.

Treated Wastewater Quality		
	Permitted	Expected
Biochemical Oxygen Demand, BOD: (mgO./L)	50	20
Suspended solids (mg/L)	100	20
Total coliform (MPN/100mL)	n.a.	5000
Fecal coliform (MPN/100mL)	5000	1000

- 5.30 The area of the treatment plant is designated as a recreational zone by Municipal decree. This designation will be changed and the area reserved for the treatment plant by a future decree. There are 2 families without title to land living within a distance of 500m from the anaerobic basins 16/. Both families live more than 400m from the proposed basins. The situation, and the possible effects of the works, will be explained to the families who will be given the option of either staying or being relocated. If the families opt for relocation, they will be moved, at the expense of the Municipality, into housing equal, or superior, to that which they are vacate.
- 5.31 For the Project to realize the full impact desired, it is important that pollution by industrial wastewater is halted. The wastewater from the industry in the Free Zone will be discharged into the new sewerage system. The industry itself will be required to pre-treat the effluent to ensure it meets the ruling standards for discharge into sewers. This pre-treatment must be installed prior to any biological treatment system.
- 5.32 The strengthening of the Municipal Environmental Unit proposed as part of the Project will enable it to play a comprehensive role in pollution monitoring and control. It will be in a much better position to monitor the environment and control discharges through more effective enforcement and the imposition of fines. It will also be able to measure and confirm the impact of the Project itself on the environment. Monitoring discharges from the industrial areas will be an important part of the work of the Municipal Environmental Unit. The commitment of the Municipality to adequate enforcement, including the issuing of a Municipal ordinance for the purpose, will be a condition of the loan.
- 5.33 Community participation: Community participation during Project preparation has been undertaken in 3 different ways: A) The total of 17 neighborhood, women groups and commercial focal group interviews that formed part of the study for the ESIR, B) The economic survey of heads of household used for the Contingent Valuation, and C) Two open council sessions called to present the Project to the population of Puerto Cortés during the IDB analysis mission.

16/

There is no national standard for the distance between anaerobic basins and dwellings due to the smell. The standard of 500m is that used by SANAA.

- 5.34 In each of the consultations, a consensus was observed in favor of the Project as a high local priority. The principal positive impacts perceived by the population are: A) A reduction in illness, B) Increased social development, C) Clean beaches and the possibility of increased tourism, D) The elimination of septic tanks and consequently all of the problems related to their over-flowing.
- 5.35 The Participation of Women: In the urban environment, mainly in the lower income areas, the women are responsible for family health and the management of the latrines and septic tanks. The principle impact on the daily life of women identified during focal group interviews with a gender perspective are: A) The reduction in stagnant water will reduce illness and the amount of work related to family health, B) Laundry will be more hygienic, C) Mosquitos and other disease-bearing insects will be reduced, D) Yard cleaning will be less demanding due to the absence of septic tanks that are prone to flooding, E) House cleaning will be less demanding as there will be less contamination carried in from the yard.
- 5.36 Poverty Impact: The Project is not designed to have a direct impact on poverty. However, as in many potable water and sanitation projects, it is the poorest who benefit the greatest from the modernization and reform of the service provision. The families with the lowest incomes are those that are least likely to have access to adequate provisions for the disposal of wastewater and are the most likely to be excluded from services if the water company lacks the financial capacity to expand. The tariff structure has been designed to favor the lowest consumers of potable water. A basic fixed charge of US\$2.30/month for the first 15m³ of consumption is within the World Health Guidelines of 5% of household income for the 10% most needy families.
- 5.37 The Project qualifies as a Poverty Targeted Investment using criteria established in the IDB Eighth Replenishment Agreement as modified by document GN-1964-3 of June 3rd., 1997. More than fifty percent of the population fall below the Poverty Line. Furthermore, as a sanitation investment the Project also qualifies for inclusion in the Social Equity and Poverty Reduction category according to paragraph 2.12 of the Eighth Replenishment Agreement.

E. Project Risks

- 5.38 The purpose of the Project will not be achieved if the potable water and sewerage sector in Puerto Cortés is not reformed. However, the Project is structured with a strict sequencing of events to ensure that the essentials of reform are the first activities undertaken. EDASSA must be operating its Leasing Agreement with the Municipality prior to the start of construction.
- 5.39 The failure of the Municipality to honor its repayments to the IDB is regarded as a risk. Both EDASSA and the Municipality are in a reasonably strong financial position. In addition, the

Municipality will be required to ensure that the Trust Fund through which funds for the Project will be channeled has, at all times, a positive balance equivalent to debt service requirements and counterpart funds for the following twelve months.

- 5.40 One of main risks to the Project is related to a possible delay in the construction of the sewerage system and of other investments. The Project depends on the viability of EDASSA and therefore on all investments that might effect its income stream, especially in the early years. The contracting of a private Project Manager, and the letting of turnkey construction contracts are the most important measures being taken to mitigate this risk. There is precedent for the use of a Project Manager on other projects in Honduras, notably for the completion of a much-delayed project for potable water in Tegucigalpa.
- 5.41 The Project is dependent on the installation of household meters for its success. The financial modeling makes assumptions about demand control that can only be achieved with universal metering. In addition to this, the tariff structure depends on the consumption being measured. The Municipality has embarked on an ambitious plan for the installing of meters, but, as yet, only a small proportion of the population is covered. The plan envisages that the majority of the population will be covered in 1998 and the whole of the population by the end of 1999. The IDB will require that at least 40% of the population has household metering as a condition precedent to the first disbursement for construction.
- 5.42 The Project will not be able to deliver the benefits anticipated in terms of reduction of contamination if a significant number of households do not connect to the system. There will be incentive mechanisms to maximize the number of connections. Firstly, once sewerage is available in a given street, its use will be compulsory and customers will be charged for the service whether they are connected or not. Secondly there will be no separate charge for making residential connections, the cost of which will be covered in the overall tariff. Industrial consumers will be required to pay a connection charge but the connection of industry to the sewerage system will likewise have a big impact. There will be increased vigilance on the part of the Municipal Environmental Unit and the enforcement of penalties for pollution to ensure that industry participates in full.

LOGICAL FRAMEWORK

OBJECTIVES	INDICATORS	VERIFICATION	ASSUMPTIONS
Goal Potable water and sanitation sector, at local level in Honduras, in the process of modernization.	The number of water and wastewater systems operating in an efficient and sustainable manner increased by 20% by 2005.	Basic sector reports (by SANAA or successor with responsibility for sector planning).	Commitment of the Government of Honduras to sector reform.
Purpose Efficient and sustainable water and wastewater services operating in Puerto Cortés as a model project.	Water and wastewater service provision sustainable in financial terms from 1999. Organic pollution indicators in the Bay of Cortés reduced to the following by 2001: BOD ₅ = 50mg/L; COD = 200mg/L; Fecal coliforms(MPN) = 700/100mL. Cases of diarrhea, intestinal parasites and skin infections reduced by 50% by 2001. Provision for potable water improved in terms of frequency of supply and adequacy of water pressure by 2000.	EDASSA reports. Independent audit reports of: Trust Fund, EDASSA or Municipal unit for monitoring Leasing Agreement. Complaints survey. Reports of water quality monitoring program. Official reports from hospitals and clinics in Puerto Cortés. Complaints survey.	Continued future commitment of the administration in Puerto Cortés to the modernization of service provision.
Results 1. Institutional development completed.	Shares in EDASSA sold by August 1998. EDASSA created and functioning by 1998. Leasing Agreement in effect by 1998. Municipal unit for monitoring the environment in operation during 1999. Municipal unit for monitoring the Leasing Agreement in operation during 1999. Tariff setting mechanism in operation by 1998. Laboratory operating at the potable water treatment plant by 1999.	Share certificates. EDASSA registration with authorities. Leasing Agreement signed. Municipal Report. Incidents of pollution and sanctions applied recorded. Municipal ordinance on pollution published in legal gazette in 1998. Municipal report. Number of complaints formally recorded. Basic regulatory policy published by the Municipality in 1999.	Political support at the municipal level. Acceptance of population. USAID supported potable water projects completed and operating by 2000.
2. Sewerage works constructed and in operation.	56% of the population of Puerto Cortés connected to sewerage by 2001.	Municipal Report.	Efficient execution of the works. Acceptance (and connection to the system) by domestic and industrial users. Acceptance (and connection to the system) by domestic and industrial users. Pollution from sources not covered by Project controlled. Acceptance of population.

Original signed
RGII-HO085P
HO-0128
Original: Spanish

PROPOSED RESOLUTION

HONDURAS. LOAN ____/SF-HO TO THE MUNICIPALIDAD DE PUERTO CORTES
(Puerto Cortés Sewerage Program)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Municipalidad de Puerto Cortés, as Borrower, and with the República de Honduras, as Guarantor, for the purpose of granting the former a loan to cooperate in the financing of a Puerto Cortés Sewerage Program. Such loan will be for the amount of up to US\$13,800,000 or its equivalent in other currencies, except that of Honduras, which are part of the resources of the Bank's Fund for Special Operations, and will be subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" of the Executive Summary of the Loan Proposal.