

6. Port Administration, Management and Operation

6.1 Establishment of the Port of La Union Office

1. As mentioned in PART II, it is recommended that the new terminal should be basically supervised and administrated by the public sector allowing private participation in cargo handling service.

2. For this purpose, administrative organization of the Port of La Union should be established initially as one section of CEPA, because

※ CEPA which is an independent autonomous body has the authority to control all facilities and the area related to port activities.

※ CEPA has special know-how of port operation cultivated in the management of the Port of Acajutla.

3. Expected function of CEPA at the La Union are summarized in table III-6-1.

4. In the short-term plan of the Port of La Union, one container terminal and one bulk terminal will be constructed for public use as aforementioned. However, the nature of each terminal is slightly different as shown in table III-6-2. In principle, the container terminal will be open to many users. On the other hand, bulk cargo such as oil, grain and fertilizer, on-land facilities can be handled by some specified entities at the bulk terminal.

Table III-6-1 Expected Business of the Port of La Union Office

	Category	Short Term	Long Term
Supervision of Port Activity	Port Promotion	○	○
	Ownership of Major Facilities	○	○
	Supervision of Port Service and Charge	○	○
	Collection of License Charge	○	○
	Employees Training system	○	○
	Port Activity Statistics	○	○
Administrative Operation	Administration of Facilities	○	Private
	Control of Docking & Undocking	○	Private
	Permission of Berth & Yard Use	○	Private
Cargo Handling Service	Container Yard Operation	Private	Private
	CFS Operation	Private	Private
	Stevedoring	Private	Private
	Warehousing	Private	Private
	Sifting or Moving	Private	Private
	Collection of Handling Charge	Private	Private
	Maintenance of Facilities	Private	Private
Other Service	Tug	○	Private
	Pilotage	○	Private
	Line Handling	○	Private
	Water Supply	○	Private
	Bunkering	○	Private
	Waste Disposal	○	Private
Security Service	Navigation Safety	MOP(MOD)	MOP(MOD)
	Guarding	○	○
	Fire Fighting	○	○
Administrative Service	Custom	Custom Office	Custom Office
	Immigration	Immigration Office	Immigration Office
	Quarantine	Quarantine Office	Quarantine Office

Table III-6-2 Terminal Management System at La Union

Item	Container Terminal	Bulk Terminal
Supervising & Administrating Service	The Port of La Union Office (CEPA)	
	Open to Public (Multiple shipping companies)	Open to Public (A few shipping companies)
Channel, Quay and Yard	Constructed by Public Sector	
Quay Crane	Constructed by Public Sector	-0-
Warehouse	Constructed by Public/Private Sector	Constructed by Private Sector
Silo, Oil Tank	-0-	Constructed by Private Sector
Cargo Handling Service, Operation of Warehouses	Open Service Provided by Private Sector	Specified Service Provided by Private Sector

6.2 Stage Plan for Private Participation in Port Services

(1) Cargo Handling Service, Operation of Sheds and Warehouses

1. A private company which provides cargo handling service or operates warehouse should be introduced or established at first. Plural companies are most desirable to avoid monopoly and promote competition. If necessary, it would be useful for the Port of Acajutla staff in charge of cargo handling works to be moved to these companies in order to transfer the know-how of container handling. These companies will benefit from the knowledge of the actual port conditions that these employees will bring to the operation.

(2) Pilot, Tug, Line Handling and Other Service

2. Pilot, tug and line handling service business would unlikely be attractive to the private sector, especially in the short term stage with the small number of calling vessels. Therefore, the Port of La Union office should provide this service. In the long-term stage when the number of calling vessels increases, pilot, tug and line handling service could be easily provided by private companies.

(3) Administrative Operation

3. Two forms of administrative operation are required: one for the port as a whole and the other for respective terminal (container and bulk). Initially, the public sector must be solely responsible for operations due to the large-scale investment involved and because La Union is designated for public use. As the port develops, the container terminal would first attract private participation, followed by the bulk terminal. At that time, the public sector should administrate, control and coordinate both terminal activities such as berth allocation. In the long-term, however, even such competence could be in the hands of the private sector provided that the principle of public use is preserved. To that end, appropriate supervision and administration by the public sector would be necessary.

6.3 Other Significant Matters of the Port of La Union Development Plan

(1) Port Promotion Strategy

1. Port promotion or sales is one of the most important fields of activities for attracting port users. CEPA Marketing Department, which is supposed to be in charge of port promotion, however, does not seem very active in pursuing potential clients. In this respect, the following actions are recommended in securing an adequate level of revenues from users at the Ports of La Union.

- a) Introduction of tariff structure that is easy to understand and competitive.
- b) Establishment of port promotion strategy focusing on the respective target groups of users.
- c) CEPA staff should have meetings regularly for sales at shipping companies or shippers, through active appeals in getting their understanding on the real merits of utilization of the Port of La Union.
- d) It is also useful for effective sales activities to prepare an attractive brochure in which the sales points including various advantages and merits for the target users are clearly explained.
- e) To hold seminars to introduce the Port of La Union to shipping companies or shippers of various countries especially on the Pacific, such as the west coast of U.S. and Asia, is another effective way to assist the promotion activities.
- d) Finally, a well organized statistics compilation system is vital not only for port promotional activities, but also to future planning.

(2) Enhancement of CEPA Organization

2. Inner organization of executive department should be simplified and streamlined through training of middle-ranked staff, establishment of clear criteria for promotion, sharing of information and so on.

3. General and specialized training schedule also be offered for employees to gain full professional knowledge, leadership ability, the skill to operate port equipment and to cope with future problems. In particular, computer training for staff in statistics section is required.

(3) Promotion of Eastern Area Regional Development

4. The development of the Port of La Union should be planned according to the strategy for introducing port related industry and stimulating regional development. It is thus necessary to consider the relationship between regional development and port activity

5. At present, around the Port of La Union a concrete plan of eastern regional development has not been drawn up yet. Government should draw up a concrete plan of eastern regional development as well as road construction plan immediately. And then, these plans should be executed by the government. Government should create an environment where the private sector can easily participate in major eastern area projects such as EPZ as well as port activities.

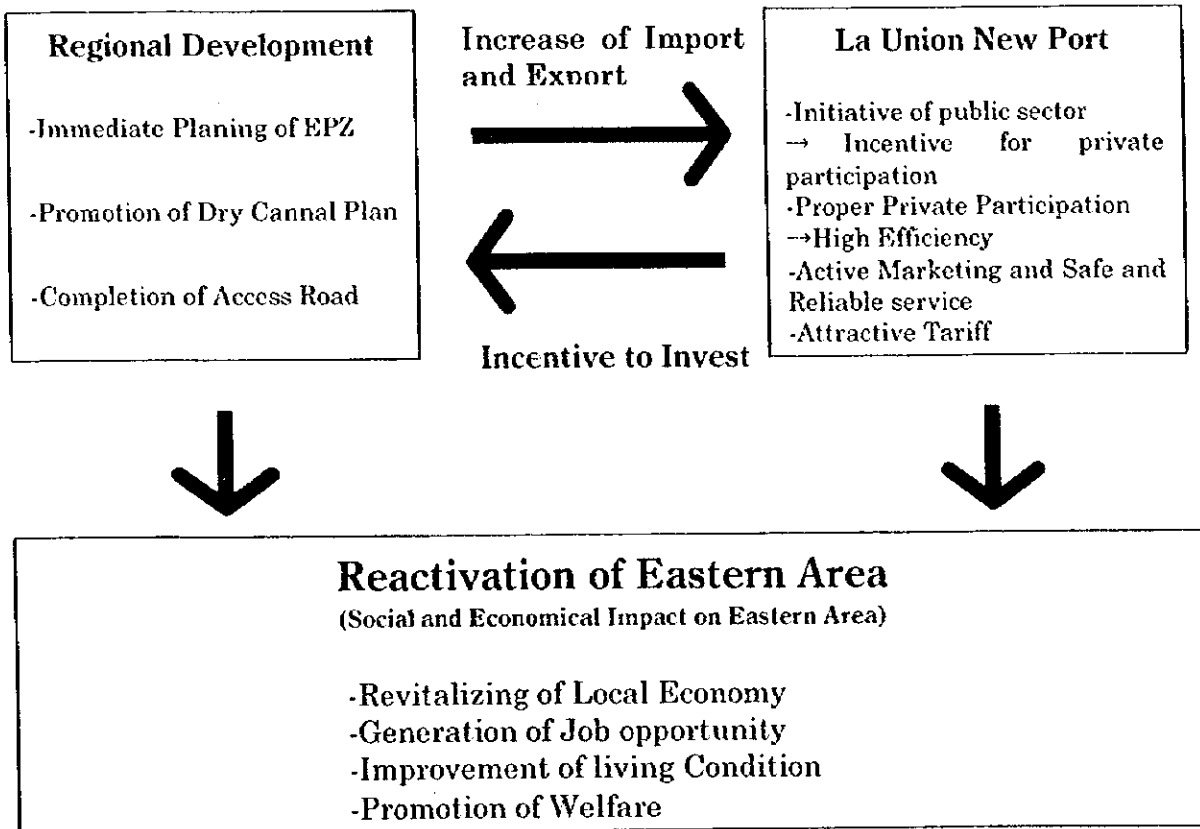


Figure III-6-1 The Relationship between the Regional Development, La Union New Port and Social and Economical Impact on Eastern Area

7. Economic Analysis

1. The purpose of the economic analysis is to evaluate the Short term plan from the viewpoint of the national economy. The economic internal rate of return (EIRR) based on cost-benefit analysis is used to appraise the feasibility of this project.
2. The economic benefits of the project have been quantified on the basis of a "With" and "Without" the project comparison.
3. The prerequisites of analysis are as follows
 - 1) Base Year 1997
 - 2) Project Life 35 years (5 years construction and 30 year operation)
 - 3) Without case
 - ① No investment is made for the construction of a new port in La Union.
 - ② When handling volume of cargo from/to El Salvador exceeds the handling capacity of Acajutla port, the cargoes which can not be handled in Acajutla port are assumed to be handled in Quetzal port of Guatemala.
 - ③ A limited investment is made in Acajutla port coinciding with the increment of handling volume of general cargo, liquid bulk cargo and dry bul' cargo.

Benefits and costs

Benefits

- 1) Savings in land transportation costs.
- 2) Savings in handling costs of container on foreign ports such as Quetzal port.
- 3) Earnings of foreign currency from transit container cargo handling
- 4) Earnings of foreign currency from land transportation of foreign container cargo.

Costs

- 1) Initial investment costs consisting of construction costs and equipment costs
- 2) Renewal investment costs for equipment
- 3) Maintenance and operation costs

Economic Evaluation

4. The EIRR of the short-term plan (base case) and sensitivity analysis for three alternatives are shown in Table III-7-1. This short-term development project is feasible from the viewpoint of the national economy as all cases yield an EIRR exceeding the standard value of 12% given by the IBRD and IDB for social-infrastructure projects.

Table III-7-1 Summary of EIRR Calculation

	B-3		C-3	
	Case1	Case2	Case1	Case2
Base Case	17.3%	16.2%	18.2%	17.0%
Case A	15.9%	14.8%	16.8%	15.6%
Case B	15.7%	14.7%	16.6%	15.5%
Case C	14.4%	13.4%	15.2%	14.2%

Case A : The cost increase by 10%

Case B : The benefits decrease by 10%

Case C : The costs increase by 10% and the benefits decrease by 10%

5. On the assumption that discount rate is 8%, 10% and 12%, the Net Present Value (NPV) and the Benefit Cost Ratio (BCR) of short-term development plan is summarized in Table III-7-2 and 7-3.

Table III-7-2 Summary of Net Present Value

unit : 000 US\$

Discount rate	B-3		C-3	
	Case 1	Case 2	Case 1	Case 2
8%	117,000	102,000	122,000	107,000
10%	72,000	60,000	76,000	65,000
12%	41,000	32,000	46,000	37,000

Table III-7-3 Summary of Benefit Cost Ratio

Discount rate	B-3		C-3	
	Case 1	Case 2	Case 1	Case 2
8%	2.03	1.90	2.13	1.99
10%	1.72	1.60	1.81	1.68
12%	1.47	1.36	1.55	1.44

Other Economic Effects

6. The effects excluded in the calculation of EIRR are as follows.

1) Generation of job opportunities

7. A vast number and type of jobs are generated and required around the La Union new port, once development begins.

Construction Period

8. During the construction period around 400 daily workers are necessary .

Port Management and Operation

9. Around 100 and 350 workers are necessary for new port operation and cargo handling respectively.

Port related industry and dependent industry

10. Based on the actual data of 6 existing EPZ's in El Salvador, the new 100ha EPZ will requires labor force of more than 10,000.

2) Promotion of regional economic development

11. Following economic effects are expected to each sectors

Agriculture

12. Presence of the port facilitates the increase of the fertilizer import volume, as a result, primary production volume will increase. In addition, new infrastructure will accelerate the export of agricultural products .

Industry

13. Factories located in the port area such as EPZs can enjoy the full benefit of reduced transportation cost for getting materials and shipping products. Procurement of a huge volume of materials and equipment for new port construction and redevelopment of the eastern region will activate construction related industries.

Service

14. Activation of commerce by increase of type of commodity and volume .

15. It is worth noting that the eastern region will be able to take advantage of many well-trained workers who gained valuable experience in

the United States during the civil conflict. These workers are especially suited to the service sectors.

3) Savings in interest of cargo costs

16. Saving in interest cost of cargo result from the decrease of required time for transportation. This means that shippers gain back invested capital earlier and opportunity of investment will increase.

8. Financial Analysis

1. The purpose of the financial analysis is to examine the viability of the project and the financial soundness of the port management.
2. The viability of the project is analyzed using the Financial Internal Rate of Return (FIRR) by means of the discount cash flow method.
3. Revenues from port activities are calculated mainly based on the present tariff of Acajutla port with some revisions of container cargo tariff to ensure competitiveness with certain surrounding ports and forecast cargo volume.
4. The project cost consists of investment cost and operational cost. The operational cost is estimated by each component such as personnel cost, administration cost, maintenance and repair cost.
5. Table III-8-1 shows summary of FIRR calculation result .

Table III-8-1 Summary of FIRR Calculation Result

	B-3		C-3	
	Case1	Case 2	Case1	Case 2
Base Case	8.7%	8.2%	9.3%	8.7%
Sensitivity A	7.6%	7.1%	8.1%	7.6%
Sensitivity B	7.5%	6.9%	8.0%	7.5%
Sensitivity C	6.3%	5.9%	6.9%	6.3%

Note Sensitivity A : The revenue decreases by 10%

Sensitivity B : The project cost increases by 10%

Sensitivity C : The revenue decreases by 10% and the project cost increases by 10%

Cargo Volume Projection Socio-economic frame

GDP growth (Case 1) 5.0%/year till 2015

(Case 2) 5.0%/year till 2005,

3.5%/year till 2015 (the average growth in the past)

6. It is assumed that 75% of the fund for the project is raised by loan from abroad at an interest rate of 2.2% which will be repaid over a twenty-five years period, the remainder is raised by another loan at an interest rate of 7.5% over a twelve years period available for such infrastructure development projects in El Salvador. Therefore, weighted average interest

rate is 3.525%.

7. As the FIRR of this project in all cases exceeds the weighted average interest rate of funds, therefore, this project is feasible.
8. In addition, the financial soundness of the port management entity is appraised based on its projected financial statements (Profit and Loss Statement, Cash Flow Statement and Balance Sheet). The appraisal is made from the viewpoint of profitability, loan repayment capacity and operation efficiency.
9. The rate of return on net fixed assets (Profitability) , the debt service coverage ratio (Loan repayment capacity), the operation ratio and working ratio (Operation efficiency) exceed satisfactory level except in the very beginning phase.
10. The result of analysis shows that the project is feasible from the financial viewpoint.

9. Environment Impact Assessment (EIA)

(1) Environmental Policy in El Salvador

1. In this era of increased environmental consciousness, the status of Salvadorian environmental authority was raised to Ministry of Environment and Natural Resources (MENR) in 1997 from the Executive Secretary of Environment (SEMA) under the Ministry of Agriculture.

2. As well, the first comprehensive environmental law was approved by the Legislative Assembly in March, 1998. The new law requires an Environmental Impact Assessments (EIA) for all activities, works or projects. It must be submitted to the MENR for approval. The associated regulations, however, were being prepared by MENR at the time of this Study. Therefore, guidelines of the UN, the World Bank, JICA or OECF were applied.

(2) Present Environmental Conditions

3. According to the existing data and the field survey, the critical points of La Union bay, where the project sites are located, are water pollution, solid wastes, deforestation and river sediments of the inner part of the bay.

4. The areas around the project sites have already been exploited in some way. Deforestation is brought about by the daily activities of inhabitants there to a considerable extent. Although there remains a small mangrove colony, its size seems to have no significance for ecology. Considering the total ecological capacity of the area, top priority should be put on conserving the massive mangrove growth in the north area of the town.

5. An inshore fishery does not exist around the sites. No significant current was observed in the bay, nor will it be greatly affected by port development along the coast line as it results in only limited geographical change.

6. Rivers flowing into the bay serve as drains of raw sewage, untreated industrial discharges, and raw municipal solid waste from nearby settlements and the City of La Union. They are the main sources of pollution, and should be dealt with properly by the city in order to prevent serious environmental consequences. Around the port development sites, there are

no major rivers causing serious sedimentation problems.

(3) Result of Assessment

7. Result of IEE in the Master Plan is shown in Table III-9-1. Follow-up EIA is needed for the Short Term Plan depending on the comments in columns of IEE.

Table III-9-1 The Result of IEE

Actions Affecting Environmental Resources and Values	Actions to be checked	IEE
Actions Affecting Coastal Marine Ecology		No Significant Effect
Actions Affecting Recreational/Resort/Beach Areas along Coastal Zone	Air pollutant emissions from harbor ships/facilities	Small Effect
	Disposal of dredging spoils which reach along shoreline.	Small Effect
Action Causing Unacceptable Sanitation Conditions in Harbor Area		No Significant Effect
Handling of Hazardous Cargoes within Harbor Especially	Traffic congestion	Small Effect
Actions Affecting Local Socioeconomics	Displacement of villages	Small Effect
Actions Affecting Terrestrial Ecology	Adverse impact on local forest	Small Effect
	Adverse effects on wildlife from loss in forest habit	Small Effect
Actions Caused by Changes in Coastal Hydrology	Adverse effect on marine water quality	Small Effect
Actions Affecting Precious Historical/Culture/Religious Monuments/Sites		No Significant Effect
Hazards from Access Roads/Traffic Leaving Harbor		No Significant Effect
Navigation Hazards from Ship Entering or Leaving Harbor		No Significant Effect

8. The result of EIA is summarized as follows.

Table III-9-2 The Result of EIA

Item	Result of Evaluation
Air, Noise and Smell Quality	No significant impact by Short Term Plan. A new road bypassing the town area is proposed.
Water Quality	No significant impact by Short Term Plan. Appropriate countermeasures such as sewage processing system in inland areas are expected to be realized as soon as possible by all authorities concerned.
Terrestrial Ecology	No significant impact by Short Term Plan around the sites.
Displacement of Villages and Facilities	No significant impact by Short Term Plan (C-3) Careful coordination is required especially at the master plan stage concerning private piers (B-3)
Navigation Safety	Number of calling ships is limited.
Others	
Marine Pollution	No specific problem is anticipated.
Disposal of Dredged Material	No specific problem is anticipated. Dredged material is carefully disposed so as not to cause environmental pollution. Appropriate monitoring should be continued.
Employment	Remarkable effect is expected on the whole.

9. Impact of the project in the Short Term Plan on surrounding natural environment is small and negligible. On the other hand, direct and indirect employment will be created through construction and operation.

10. Overall Evaluation

1. Two alternatives, C-3 and B-3, are prepared and evaluated as the Short Term Plan. Main facilities are the same for both cases. They differ only in project site.
2. Viability of the project was evaluated from various points of view mentioned as aforementioned. These evaluations are summarized as follows.

Table III-10-1 Overall Evaluation for Alternative C-3

Item	Result	Remarks
Engineering Aspect	Good	Berth construction sites are all in good condition for construction.
Economic Feasibility	Good	EIRR and related indices are good. Project greatly contributes to national foreign trade and regional development.
Financial Feasibility	Good	FIRR is good. Project has profitability.
Environmental Aspect	Good	Project has no significant environmental impact and contributes to local and national economy and social stability.

Table III-10-2 Overall Evaluation for Alternative B-3

Item	Result	Remarks
Engineering Aspect	Good	Berth construction sites are all in good condition for construction.
Economic Feasibility	Good	EIRR and related indices are good. Project greatly contributes to national foreign trade and regional development.
Financial Feasibility	Good	FIRR is good. Project has profitability.
Environmental Aspect	Good	Project has no significant environmental impact and contributes to local and national economy and social stability. Some private activities there could be relocated with appropriate counter-measures if necessary.

3. In order to select the best alternative, the comparative evaluation of two alternatives, B-3 and C-3, is summarized as shown in Table III-10-3. As a result, C-3 is selected mainly due to its advantages in terms of cost and availability of the existing area of the Port of Cutuco (CEPA).

Table III-10-3 Comparative Evaluation of the Alternatives

Evaluation	Alternative Plans	
	B-3	C-3
Terminal Plan	○	○
Land Access	○	⊙
Water Area Plan	○	○
Water Access	⊙	○
Effect on Existing Piers	△ Private piers	○
Use of Neighboring Area	○	⊙ Old Cutuco ⁽¹⁾
Future Expansion	⊙ Bulk terminal	⊙ Container terminal
Construction Cost	○ US \$ 101 million	⊙ US \$ 94 million
Environmental Impact	○	○
Effect on Other Projects	⊙ Marina, Power plant	⊙ (Punta Gorda)
Overall Evaluation	○	⊙

Note1: ⊙ Good
 ○ Fair
 △ Poor

Note2: The existing Cutuco is fully available for the project already.

CONCLUSIONS AND RECOMENDATIONS

1. The Study Team has formulated this report based on the findings and materials obtained through its own activities, cooperation with counterparts and interviews with many people related to this project. In the course of the Study, discussions within the team and counterparts have been held repeatedly to ensure a fruitful outcome.

2. While detailed explanation of results of the Study are expressed in the main parts of the text of the report, issues which are assumed to be most useful for considering the implementation of this proposed project are summarized here for the readers' convenience.

CONCLUSIONS

3. This Study has been executed in order to ensure the development and modernization of national ports, especially in La Union Province, and their contribution to the regional development of the eastern area, which are now included in the most important policies in the Republic of El Salvador.

4. In accordance with the scope of work between both governments of El Salvador and Japan, the Study Team has

- (1) formulated the Master Plan for the Port of La Union with the target year 2015 for the development of container and bulk terminals and other related facilities, and
- (2) conducted a feasibility study of a Short Term Plan up to the target year 2005 within the framework of the Master Plan

5. Total cargo volume for the port forecasted by employing a future economic framework based on actual facts and related figures acquired during the Study, will be around 2.0-2.2 million tons in 2015. It includes container cargo volume of 130-158 thousand TEUs from the whole country, which Acajutla, sometimes affected by a swell, cannot handle. The other cargoes come from the said area.

6. To meet these demands, the development of new terminals with modern and efficient container handling systems will be essential to take

the advantage of geographical and natural conditions facing the La Union bay. (The existing Cutuco is too old to be reactivated, and the neighboring Punta Gorda has started to work as fishing base as originally planned.)

7. The necessary number of terminals estimated by the Team is as follows;

One(1) container terminal, equipped with two(2) gantry cranes
Two(2) bulk terminals
Other related facilities such as access channel and road

8. Settlement of Export Processing Zones (EPZs) are proposed as important measures closely related to the development of the port to activate the local economy, considering the good performance of those in the western/ central region.

9. The cost needed for the development of the port is estimated to be around 150 million US dollars.

10. Public sector should retain the overall control of the port, providing basic infrastructure such as piers and creating an attractive and competitive environment for private participation. As to CEPA, its modernization is also required, which includes formulation of basic policy and plan for national ports, improvement of statistical system and reinforcement of organization.

11. In the Short Term Plan, the following development works will be necessary up to 2005. In particular, the container terminal must become operational as soon as possible.

One(1) container terminal, equipped with two(2) gantry cranes
One(1) bulk terminal
Other related facilities such as access channel and road

12. The quay walls of these two terminals are consecutive and constructed with almost the same specifications for flexible usage at need.

13. Among various sites, the two best sites have been selected and examined for the feasibility study. The construction cost for the above two terminals is estimated at 100 million US dollars, which also includes

access channel and road, container handling equipment and tug boats, etc. Over 20 % of the cost is estimated as the portion in local currency.

14. The Economic Internal Return Rate (EIRR) calculated based on the countable benefit is more than 13 %. The Financial Internal Return Rate (FIRR) is more than 5 %. Moreover, related indices are also highly evaluated. As a result, the project is judged as being feasible, both economically and financially.

15. No significant technical problems are found in the water area or concerning the soil conditions at the project site. Furthermore, the EIA revealed no significant unfavorable impact. Some private activities there could be relocated with an appropriate countermeasures if necessary.

Table-1 Overall Evaluation

Item	Result	Remarks
Engineering Aspect	Good	Berth construction sites are all in good condition for construction.
Economic Feasibility	Good	EIRR and related indices are good. Project greatly contributes to national foreign trade and regional development.
Financial Feasibility	Good	FIRR is good. Project has profitability.
Environmental Aspect	Good	Project has no significant environmental impact and contributes to local and national economy and social stability. Some private activities there could be relocated with an appropriate countermeasures if necessary.

16. Of the two project sites, that between the Port of Cutuco and Punta Gorda would be preferable in terms of cost and availability of the existing area of the Port of Cutuco (CEPA).

17. The proposed project is a great expense to the government. However, it should be implemented, taking into consideration its importance to national port development and regional development and the favorable financing which can be utilized at present.

RECOMMENDATION

1. To ensure the smooth implementation of this proposed plan of the port of La Union, the Study Team recommends the following items.

Nature of Public Ports

2. Public ports should be considered as economic infrastructure, or social capital, or as a national asset, in such a country as El Salvador where they are vital in promoting the national economy and upgrading total welfare of the citizen. The Port of La Union will be the only one real container terminal in El Salvador. This kind of container terminal should be open for public use. Ports have to be controlled properly to preserve the national and regional benefit and keep fair use for public.

3. Under this concept, ports should be supervised by the public sector. At the same time, basic policy of port development and management and arrangement of basic facilities should be controlled by the public sector. The public sector also has an advantage in that it can obtain low interest loans from foreign organizations for the construction of basic facilities.

4. It is also very important to understand that the port services could be provided by private business entities in such well-cultivated fields where they can promote their economic activities freely under a liberalized competitive market seeking efficiency. The public sector as a supervisor and an owner of the port should take full responsibility for public profit.

5. In addition to the above mentioned points, it is also fairly justified that the land and water area as well as major port facilities should be supervised by the public sector to secure sound, effective and harmonized port development and activities coordinating with authorities and persons concerned.

Importance of the Master Plan

6. The basic role of the Master Plan is to act as a guideline for (1) development of port facilities, (2) port administration, and (3) coordination

with other plans and works.

7. The Master Plan should first be understood as the physical layout plan of port facilities and related land use to cope with the future demand. It shows not only rough requirement but also desirable zoning plan in the target year. All developments of various time spans from very urgent (2-3 years), short (5-10 years) to long term (10-20 years) are well coordinated under a long-term strategy. Based on the plan, efficient and organized port development can be achieved. Related development should be compatible with the plan to avoid haphazard development, the effects of which on a limited coastline may be irreversible

8. Similar to the above, proper administration system will be included in the Master Plan. In this sense, the functional allotment between public sector and private sector is an important issue. The functions of public sector and those of private sector will be specified and determined, depending on whether the corresponding port is designated as a public port, private port, commercial port or industrial port. As with the physical layout plan, a stage plan culminating in a long term vision is required. Furthermore, such information must be provided to the private sector in partially to ensure a competitive environment. However, alternative conditions for private investment should be secured under the overall supervision and administration of the public sector.

9. Finally, it should be emphasized that the port development is largely affected by surrounding national and regional development. The port can not demonstrate its full potential without the timely and proper arrangement of infrastructure such as roads and EPZs. In this regard, the plan could be utilized for coordination with other public plans work, even private ones. In this context, regional development will also be promoted and accelerated.

Concept of the Master Plan for La Union

10. As explained repeatedly, the Master Plan is a guideline for organized port development in future. Therefore, basic zoning plans for various activities are very important. As well, as much future expansion space as possible should be reserved for the Post-Master Plan stage.

11. In case of Alternative C-3, which has the lowest construction

cost among alternatives, cargo handling activities are planned to the west of Punta Gorda, while fishing activities would be well arranged around Punta Gorda. As to cargo handling, cargoes related to containers are handled at the west terminal, which could be expanded easily further west.

12. Remaining bulk cargoes are planned to be handled at two berths between this container terminal and Punta Gorda. To cope with the increase in cargo expected there, the introduction of modern efficient equipment would be the first option. Expansion of the terminal area would not be necessary until a later stage.

13. On the other hand, passenger cruisers are strongly expected to visit La Union. Therefore, a tentative mooring facility, utilizing the west revetment of the land reclamation, is planned to accommodate them as a minimum requirement. It could accommodate the ships of up to 15,000 GT at present. (However, it would not be available once the next expansion of the container terminal begins.)

14. Given the increase of passenger ship calls together with the tourism development of La Union, a passenger terminal should be planned properly in the Master Plan of the bay. It might be constructed around the east of Punta Gorda as part of the tourism development plan which is being studied by CORSAIN or, for example, in front of the town area around the existing passenger ports for islands. At any rate, construction of a passenger terminal in La Union should be incorporated into fundamental policy for tourism both nationally and of locally.

15. Finally, whether the container terminal can attract a large number of containers depends on the rapid implementation of the new by-pass road for urbanized area of the City of La Union from the Port of La Union. The existing principal road between the Cities of La Union and San Miguel should also be improved as soon as possible.

Systematic and Flexible Planning and Project Implementation

16. The system of port planning should be established. It is necessary that the nation-wide port development policy should be authorized at first and under that policy the plan of each port should be prepared.

17. In order to realize the proposed schemes of the plans, it is essential that CEPA promote full understanding of the plan, secure adequate financial support with proper budgetary arrangements and periodically review the plan to cope with national and regional changes.

18. All the facilities specified in the Master Plan reflect the forecast data of cargo demand together with type of cargo. However actual figures may deviate from the forecasts due to changes in various social and economic factors. Although a detailed study to cope with such changes would be required on such an occasion, following countermeasures may be useful to ensure future preparedness at time of need.

- (1) review of cargo forecast based on the latest data
- (2) review of the Master Plan
- (3) review of the implementation schedule
- (4) review of the progress of modernization program
- (5) review of the improvement of cargo handling efficiency

Importance of Surrounding Area for Port Related Activities

19. For a port to fulfill its function and to ensure economic success, good coordination with the surrounding area as well as the road network system is required. For that purpose, the port management body shall administrate and promote the use of the areas closely related to port activity under its basic policy.

20. In C-3, the areas just behind the port (*) are of course very important for the development of the port. In the Study, therefore, it is recommended that they should be used for future port related activities.

(*) The west part of the area is owned by CEPA and private citizens, while the east part is owned exclusively by CORSAIN. The cost of obtaining this land is not included in the project cost estimate in the Study.

Examples of land use are as follows;

1. Back-up area for cargo storage and distribution
 - a) oil tanks for expansion
 - b) silos and warehouses for expansion

- c) container storage yard for expansion
 - d) cargo distribution center (car, etc.)
2. Port administration and related business
- a) government offices and shipping agents
 - b) banks and insurance companies
 - c) service center for cruise passengers
 - d) commercial complex (including duty-free shops)
 - e) others

21. The appropriate land use could be guided (a) with good coordination between persons concerned, (b) under proper legal schemes or (c) through land acquisition by CEPA.

22. The most practical approach would be for CEPA to acquire the area and administrate it as the owner so that planned land use can be realized (see Figure 1).

Required functions for CEPA

1) Control of Port Area, Infrastructure and Facilities

23. CEPA should recognize the basic role and importance of master plan for the port development, and coordinate the overall projects concerned with port activities so that mutual interference will be avoided. In other words,

- (1) CEPA should formulate basic policy for national ports and prepare plan concerning development and conservation of port area.
- (2) Construction work, permission for usage of port infrastructure, facility and area should conform to the port policy and plan.

2) Organization improvement

24. In order to realize efficient port management and operation related to a basic policy and plan and ensure sound finance for the port development, it is necessary to introduce or reinforce sections which are in charge of the following functions:

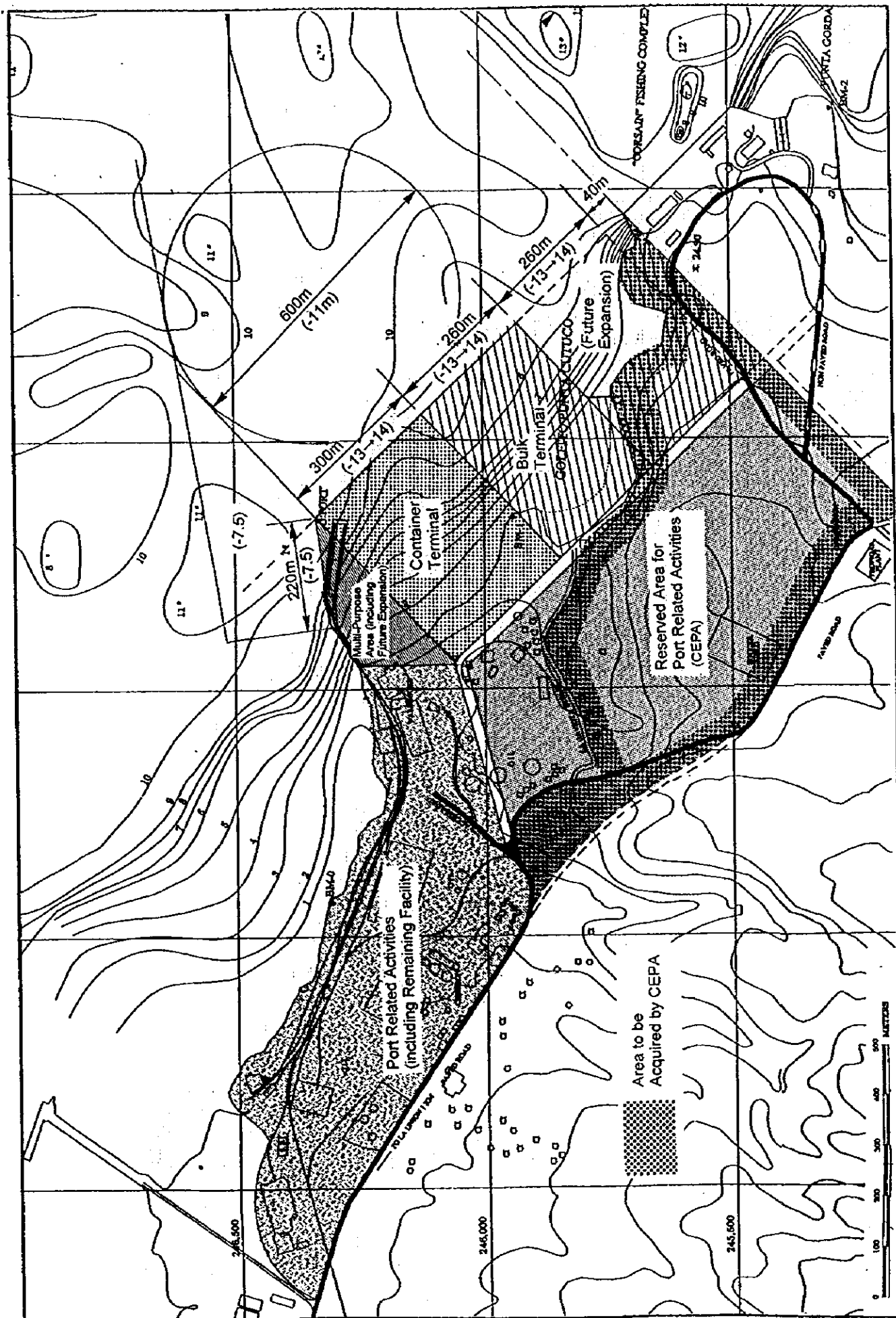


Figure 1 Area to be Acquired

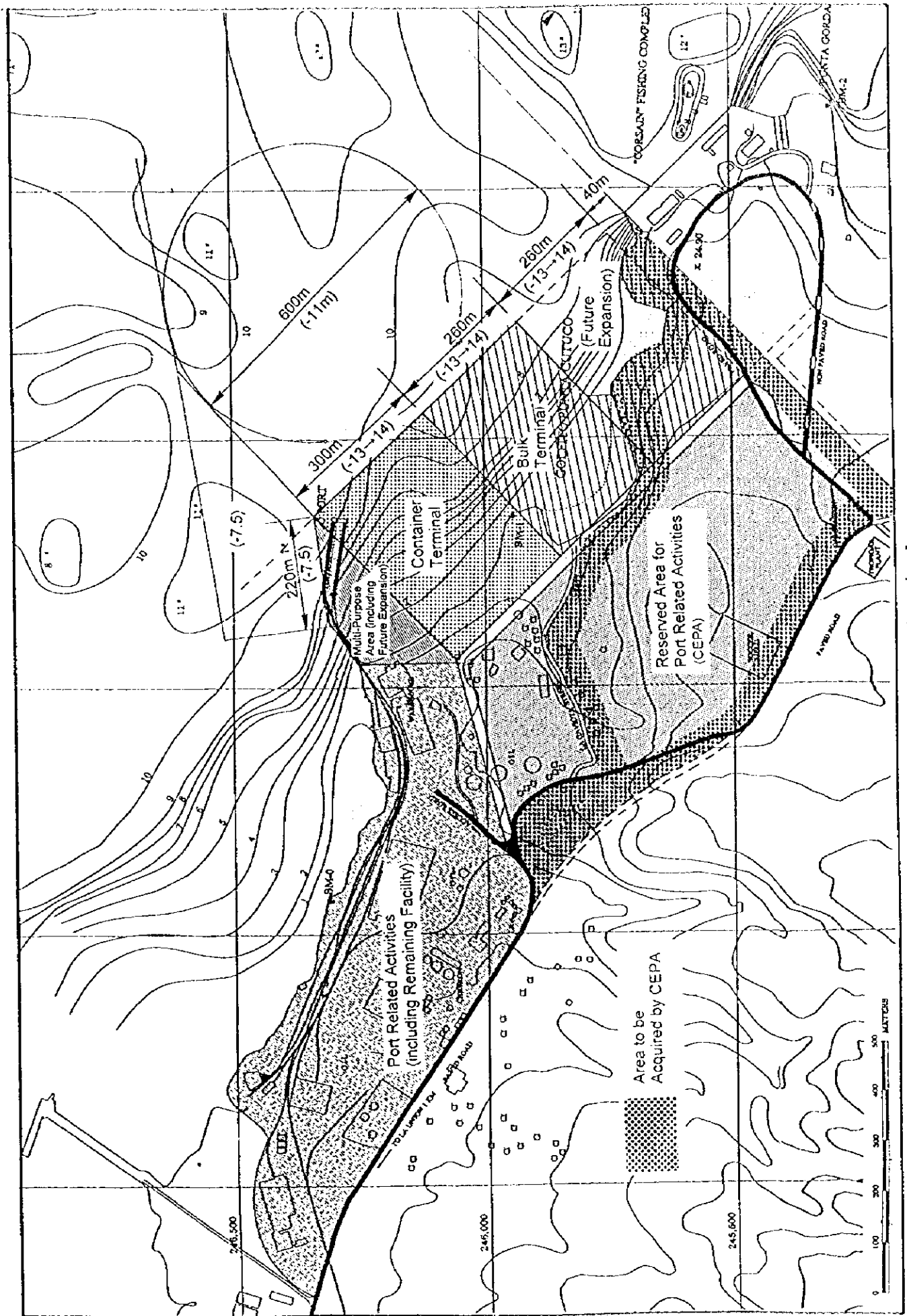


Figure 1 - Area to be Acquired

Table-2 Required Functions for CEPA

Expected Role	Background
-Functional Port Planning and Arrangement -Supervision of New Terminal Construction	←New Terminal in La Union ← Joint Participation of CEPA and Private Enterprise in the Port of Acajutla, ←Dry Cannal, EPZ
-Active Marketing and Port Promotion -Attractive Tariff and Efficient Cargo Handling	←Progress of Containerization ← Competition among the Neighboring Ports ←Modernization Program of Public Sector
-Environmental Administration	←Prevention of Sea Area Pollution ←Raising Environmental Consciousness
-Flexible and Effective Reorganization	←New Role & Function for the Progress of Port Development and Modernization Plan

Port Promotion Strategy

25. Port promotion or sales is one of the most important fields of activities for attracting port users. CEPA does not seem very active in pursuing potential clients. In this respect, the following actions are recommended in securing an adequate level of revenues from users at the Ports of La Union and private participation port activities.

- 1) Establishment of port promotion strategy focusing on the respective target groups of users.
- 2) CEPA staff should have meetings regularly for sales at shipping companies or shippers, through active appeals in getting their understanding on the real merits of utilization of the Port of La Union such as reliability, efficiency and competitive tariff.
- 3) It is also useful for effective sales activities to prepare an attractive brochure in which the sales points including various advantages and merits for the corresponding target users are clearly explained.
- 4) To hold seminars to introduce the Port of la Union to shipping companies or shippers of various countries especially on the Pacific, such as the west coast of U.S. and Asia, is another effective way to assist the promotion activities.

Private Participation Policy

26. Under the basic understanding on the nature of public ports illustrated in para.1, it is recommended that the following guidelines be taken into account when CEPA introduces private participation.

1) The ultimate objective of private participation in port operation is to maximize economic return from the target port activity for both the public and private sectors under careful consideration on effective removal of possible inefficiency of public sector as well as adverse effects of monopoly by private sector.

2) Port functions and activities to be provided by private sector should be limited within the areas where the private participation can be fully controlled under the administrative authority CEPA, and the areas where the effects of the private participation can be fully expected without any negative impact to sound performance of the port for the public use.

3) The target areas to which private participation will be introduced should be planned and arranged appropriately to guarantee the necessary conditions under which the free market system can be fully activated.

4) Basic port facilities and major cargo handling equipment should be owned by public sector and open to public use, but can be leased out to private firms on a contract basis for their exclusive use under appropriate conditions. This is also understood as an incentive for private participation as investment in facilities and equipment is not required and flexible operation is possible.

5) Practice of private participation should be step wise considering its applicability to the situation of each target stage including practicality, acceptability, and profitability of the intended private participation schemes so that they could fully contribute in securing the total efficiency of port administration and its performance.

Training of Terminal Operation Staff

27. Training of terminal staff including container handling workers is one of the areas that can not be achieved by improvement of physical facilities or cargo traffic control system. Since improvement of human ability requires a rather long time under a well designed systematic education and training program, it is recommended that CEPA should start the necessary action as soon as possible. From the early days before the port starts operation, it is one effective way to invite a long-term expert on port management from developed countries such as Japan.

28. It may also be useful for the Port of Acajutla staff in charge of cargo handling works to be moved to the Port of La Union in order to transfer the know-how of container handling to the private sector. The private sector would benefit from the knowledge of the actual port conditions that these employees will bring to the operation.

Suggestion on Procurement Policy for Required Funds

29. In constructing a public port, public funds should be utilized to the extent possible. These include funds allocated by the government for the project in the national budget, and the internal resources of CEPA. As well, the funds from international multi or bilateral financing agencies (ODA: Official Development Assistance), should be utilized. In many cases in developing countries the latter funds are fully utilized, considering that the national funds are usually limited and that concessional terms of such loans are favorable.(for example, OECF loan of Japan can be used to cover up to 75% of the project cost with an interest rate of 2.2% and a repayment period of 25 years)

30. In any case, however, interest free internal resources should be utilized as much as possible to minimize future debts. Fortunately, CEPA is also in charge of the international airport, which can generate substantial revenue through successful operation and expansion. This is also able to be considered as a good resource. At the same time, CEPA is also subject to a 25% income tax on profit, and then a further 25% contribution tax is levied on the balance, which also could be used to construct new port, as the project will promote regional development (The regional development is the responsibility of the government). In this sense, exempting CEPA from these kinds of taxes would improve the financial soundness of the project especially during construction and the early stage of operation.

31. Finally, the project may attract some private investment. In this case, these funds could be utilized after reviewing the nature of the investment. To safeguard the principle of public use, it is important to ensure that monopolistic practices do not arise. Taking into consideration the above, the feasibility of project together with well-balanced profits for each investment party has to be secured.

Effective Implementation Work of the Project

32. The subsoil conditions might be a little complicated based on the existing geographical conditions around the sites. In particular, the rock encounter to the alignment of the quay walls is one of the dominant elements for the project implementation. Detailed subsoil investigation covering whole the project site, including the dredging area of the channel, is desirable. A seismic refraction survey would also be considered efficiently.

33. As well, topographic maps at the sites for major structure such as port office, custom office and pumping station, should be prepared in scale of 1:1,000 and with contour intervals of 1.0m. Those covering proposed quarry sites for rock materials and borrow areas for reclamation materials are also necessary.

34. A lot of dredged materials will be produced in dredging the approach channel and turning basin or in getting rid of the soft clay under the quay structures. If sandy soils and gravels are found, they should be used as filling materials for the site from the viewpoints of environmental consideration and construction cost reduction.

35. In view of the existence of the soft clay layer at the landfill area, the filling work is desirable to be carried out as much as possible in advance at the first stage development so that the subsoil consolidation settlement can be expedited before the port operation starts. If possible, settlement observation at the site is desirable, although overlay could resolve the problem.

36. For smooth implementation of the project, proper engineering services in detailed designs, pre-construction services and construction supervision would be one of the key factors in accordance with the proposed schedule of the Study. The preparations for it should also be remembered, if necessary.

Establishment of Effective Maintenance System

37. In the case of the Port of Cutuco, there are several structures and facilities which require periodical maintenance work while some of them require urgent rehabilitation.

38. Maintenance work of structures can be divided into two categories, routine maintenance and urgent rehabilitation. The former consists of preventive measures and relatively small repairs in which cost is minor, however the latter consists of corrective measures against large scale damage and required cost is large. Past experiences reveal that if preventive maintenance is appropriately performed at adequate intervals of time, maintenance cost can be minimized.

39. In case of the Port of La Union, maintenance of channel depth might be one of the most important issues. Therefore, regular sounding survey and implementation of maintenance dredging, especially outside of the bay, should be done timely according to the result of the survey.

Promotion of Eastern Area Regional Development

40. The development of the Port of La Union should be planned according to the strategy for introducing port related industry and stimulating regional development in addition to reinforcement of maritime transport infrastructure. It is thus necessary to consider the relationship between regional development and port activity

41. At present, around the Port of La Union a concrete plan of eastern regional development has not been drawn up yet. Government should draw up a concrete plan of eastern area regional development as well as a road construction plan immediately. And then, these plans should be executed by the initiative of the government. Government should create an environment where the private sector can easily participate in major eastern area projects such as EPZ as well as port activities.

Economic Impact to Eastern Regional Development

42. As is commonly understood, a port is dependent on the various activities in its hinterland or surrounding areas. At the same time, such activities relating to the ports can not run well without the necessary port functions. In this case, the promotion of regional development with a port as its core is considered vital in maximizing economic and social benefits expected from the port activities.

43. According to the forecast cargo volume of El Salvadoran ports,

the present capacity of Acajutla port is insufficient for the future demand, even if cargo handling equipment is improved. It is necessary to radically transform Acajutla port to cope with this demand. However, to convert Acajutla port into a competitive container terminal, it would be necessary to construct a large scale breakwater and a new container terminal with a container stacking area equivalent to that of neighboring foreign ports. On the other hand, it would not be necessary to construct any breakwater in planning a new port in La Union because the gulf of Fonseca is well sheltered by many isles and capes. In this regard, the investment cost in La Union is no more than the additional investment in Acajutla.

44. In addition, construction of La Union new port will accelerate economic development of the eastern region. It would have an impressive impact on the eastern region, as the social infrastructure has not been arranged sufficiently there yet. As a result, it will play a significant role in reducing the economic difference between both regions.

45. Since gulf of Fonseca faces Honduras and Nicaragua, La Union new port may also be able to attract cargoes from these countries and to function as a key regional distribution port and exchange base. The geographical advantage of La Union new port could be expected to promote economic and cultural exchange in Central America through trade and industrial relations.

46. Container port is a capital intensive industry where scale merit can be expected in terms of efficiency. As a large scale and efficient terminal attracts more ship services and more frequent ship services are more convenient for the exporter or consignee, to concentrate the Salvadoran container cargoes to La Union new port will heighten the efficiency of terminal operation and competitiveness of Salvadoran products.

47. Factories located in the port area such as EPZs can enjoy the full benefit of reduced transportation cost for getting materials and shipping products. Procurement of a huge volume of materials and equipment for new port construction and redevelopment of the eastern region will activate construction related industries. In addition, the eastern region will be able to take advantage of the many well-trained workers who gained valuable experience in the United States during the civil conflict. These workers are especially suited to the international

service sectors.

48. The smooth economic growth after the peace agreement reflects the favorable increase of trade volume. The construction of La Union new port will promote the rebuilding of the Eastern region and greatly contribute to the economic growth of the whole nation. Therefore, it is expected that the development of La Union new port will begin as soon as possible.

Environmental Consideration

49. Environmental issues cover a wide scope. Therefore, the environmental policy should be comprehensive, covering institutional frame and technical know-how. Needless to say, the corresponding section should be established in CEPA as soon as possible. Some basic elements in the above policy are listed below.

- (1) Clear understanding of the present situation of environment
- (2) Estimation and forecasting of the impact and future situation
- (3) Possible countermeasure to prevent the impact
- (4) Process to acquire social consensus
- (5) Coordination with other organizations concerned

50. There are many kinds of environmental components related to the port. The water front zone, in particular, has various features from the environmental viewpoint. Therefore, one of the most important issues in the first stage is clearly understanding the environment of the port in question.

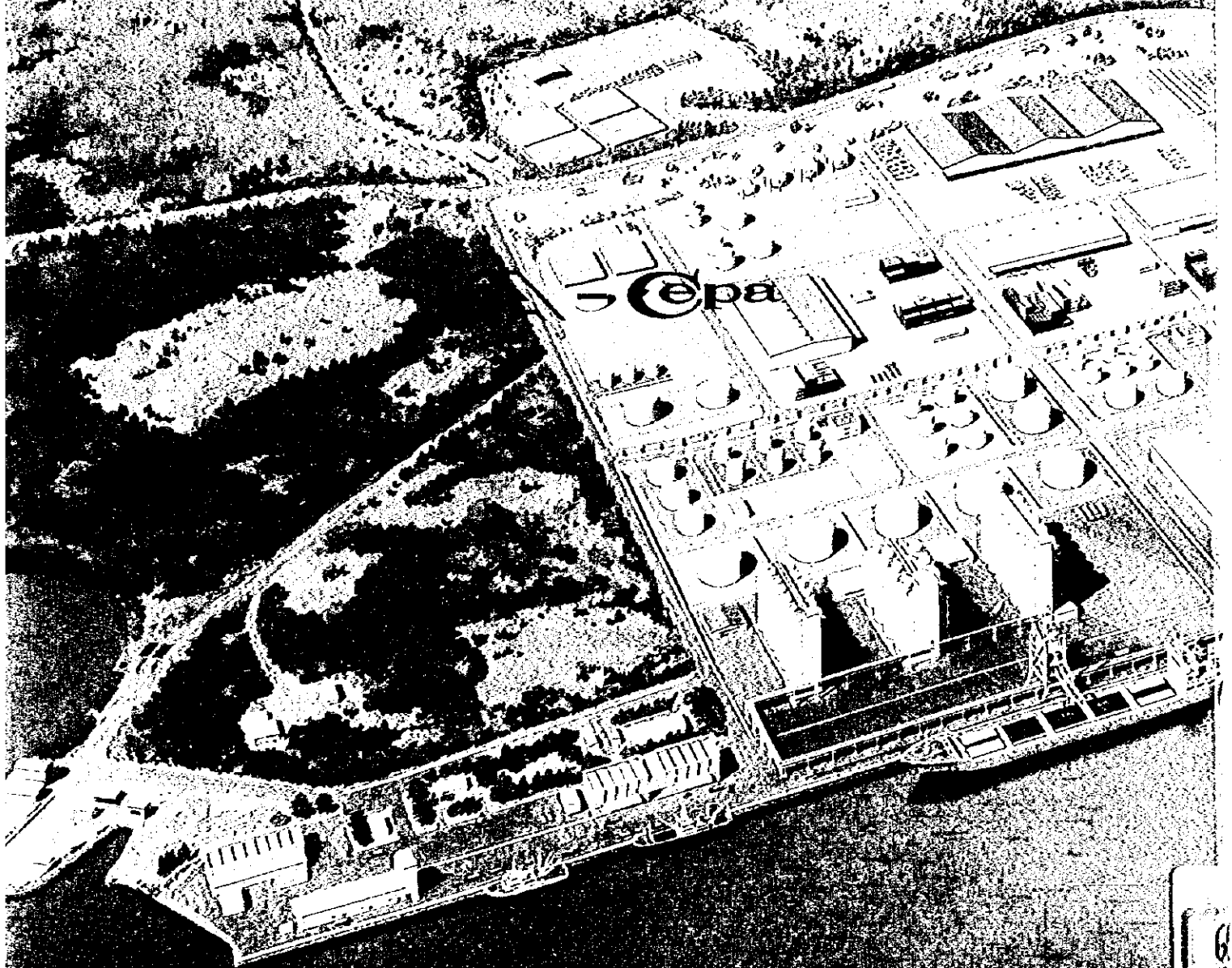
51. When planning port development projects, careful consideration should be given to the possible effects which may happen during the port construction stage as well as operation stage. If degradation of environment is forecasted, countermeasures should be taken to prevent the environmental burden.

52. Results of the environmental analysis sometime remains at a qualitative level. The evaluation of projects is often relative and decisions should be made through social consensus.

53. Environmental issues cover a wide scope, thus, the

countermeasures to the issues should be examined and carried out through coordinated efforts of related organizations such as the Ministry of Environment and Natural Resources and related local administrative organs.

54. The function of collecting information, understanding and evaluating what is happening and what will happen in the port, know-how on necessary countermeasures for environmental problems should be carried out by CEPA as with the project of the Study.



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