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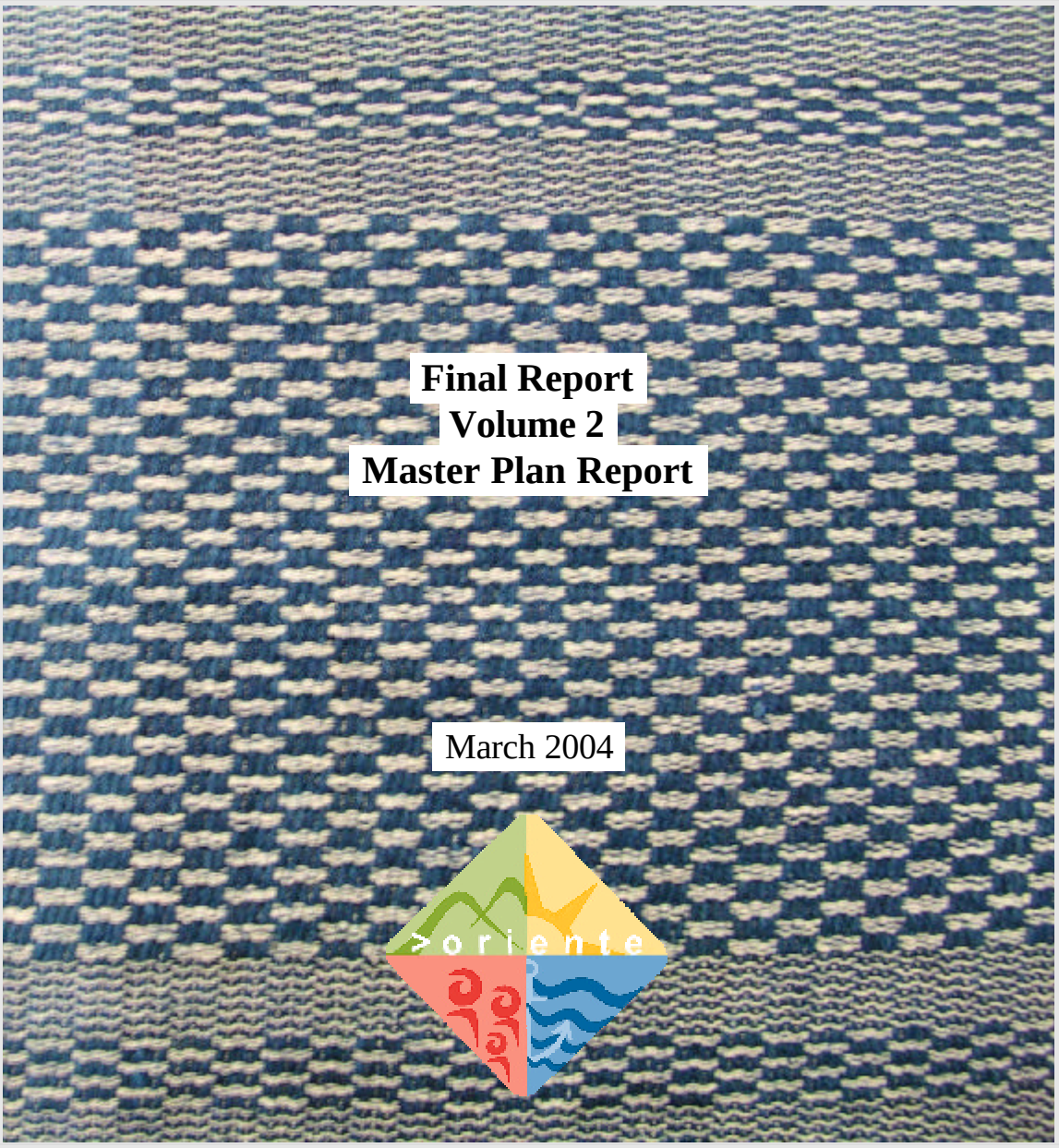
Japan International Cooperation Agency (JICA)

Comisión Nacional de Desarrollo
The Republic of El Salvador

The Study on Economic Development, Focusing on the Eastern Region, of the Republic of El Salvador



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Comisión Nacional de Desarrollo
The Republic of El Salvador

The Study on Economic Development, Focusing on the Eastern Region, of the Republic of El Salvador

Final Report
Volume 2
Master Plan Report

March 2004

RECS International Inc.
Nippon Koei Co., Ltd.
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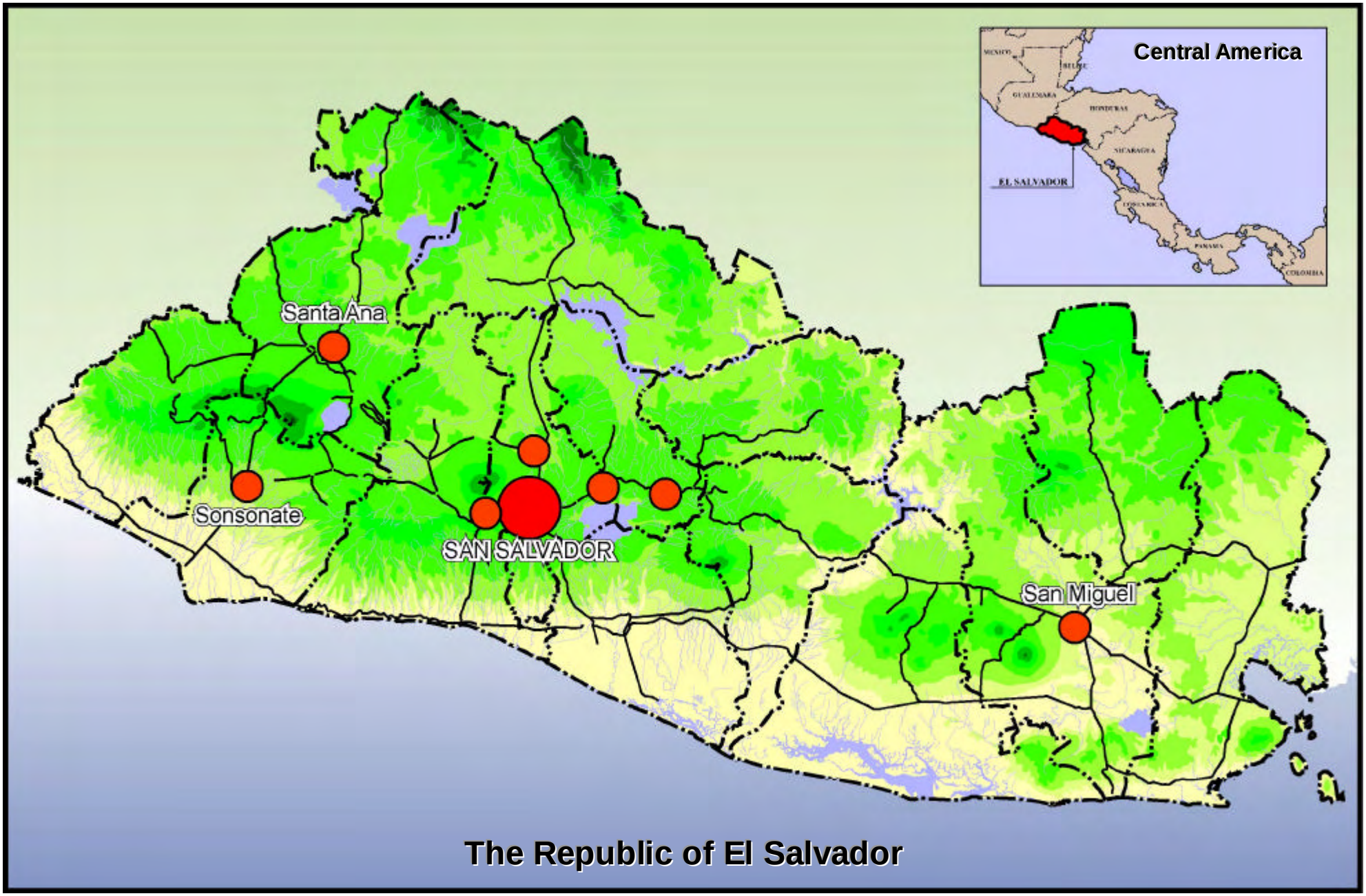
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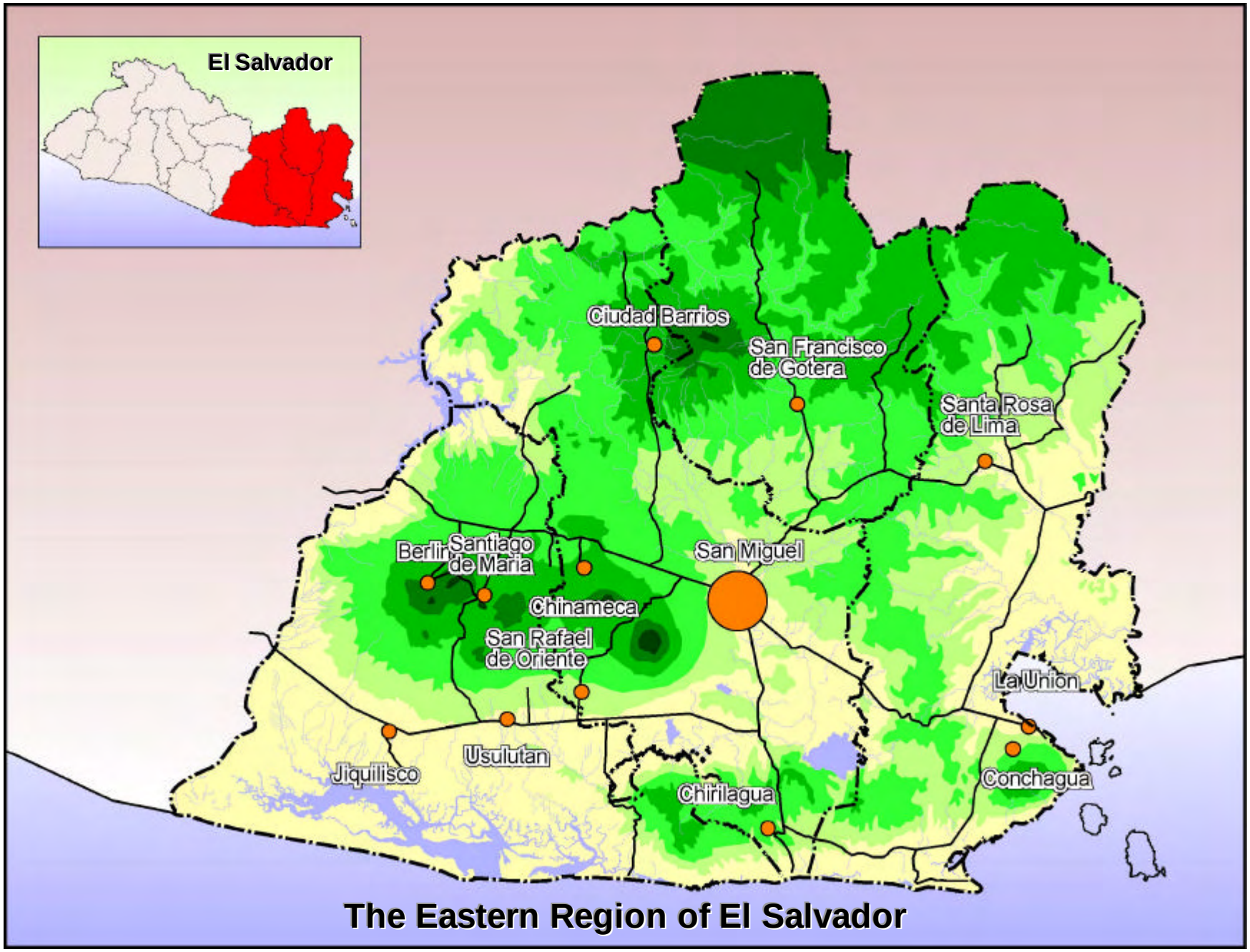

The Eastern Region of El Salvador

The Study on Economic Development, Focusing on the Eastern Region, of the Republic of El Salvador

Final Report
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Abbreviations

ADEL	Local Economic Development Agency
AECI	Spanish Agency for International Cooperation
AIC	Agro-industrial complex
AITC	Agro-industrial technology center
AMBIDESSAL	Environment and Sustainable Development Association in El Salvador
AMCHAM	American Chamber of Commerce
AMI	Mesoamerican Freeway of Information
AMP	Maritime Port Authority
ANDA	National Water Supply and Wastewater Administration
ANTEL	National Telecommunications Administration
APE	Export Promotion Agency
APHIS	Animal and Plant Health Inspection Service
APREMAT	Technical Medium Education Reform Process Assistance
AT	Appropriate technology
ATC	Agreement on textile and clothing
AVES	Aviculture Association of El Salvador
AZULES	Indigo Producers' Association of El Salvador
BCIE	Central American Bank for Economic Integration
BCR	Central Reserve Bank of El Salvador
BFA	Bank for Agricultural Promotion
BMI	Multi-sector Investment Bank (Banco Multisectorial de Inversiones)
BOD	Biological oxygen demand
BOO	Backoffice outsourcing
BPO	Business process outsourcing
CAFTA	Central America Free Trade Agreement
CATIE	Tropical Agriculture Research and Higher Learning Center
CBD	Commercial and business district
CBI	Caribbean Basin Initiative
CBTPA	Caribbean Basin Trade Partnership Act
CDA	Departmental Council of Mayors
CEL	Executive Commission of Lempa River Hydropower
CENDEPESCA	Fishery and Aquaculture Development Center
CENTA	Center for Agriculture and Forestry Technology
CENTREX	Center for Export Producers
CENTROMYPE	Foundation for Promoting Competitiveness of Micro and Small Enterprises
CEPA	Executive Commission for Autonomous Ports
CEPAL	Economic Commission for Latin America
CESSA	Cementos de El Salvador
CIF	Cost, insurance and freight
CND	National Development Commission
CNR	National Center of Registrations
COCATRAM	Central American Commission for Maritime Transportation
COD	Chemical oxygen demand
COEN	National Emergency Committee
COMTELCA	Regional Technical Commission of Telecommunications
COMURES	Municipal Corporation of the Republic of El Salvador
CONACYT	National Council for Science and Technology

CONAMYPE	National Commission for Micro and Small Enterprises
CONAPIS	National Commission of Salvadoran Apiculture
CORSAIN	Salvadoran Investment Corporation
CORSATUR	Salvadoran Tourism Corporation
CRA	Learning resource center
CRM	Customer relationship management
CTE	Company of Telecommunications
DANIDA	Danish International Development Assistance
DD	Detailed design
DEE	Electric Power Division
DGALE	Directorate General for Attention to Overseas Communities
DGEC / DIGESTYC	General Directorate of Statistics and the Census
ECAT	Central American Transport Study
EDI	Electronic data interchange
EEO	Eastern Electricity Company
ENA	National Agricultural School
ETESAL	El Salvador Electricity Transmission Company
FAO	Food and Agriculture Organization
FDA	Food and Drug Administration
FDI	Foreign direct investment
FEDAVICAC	Central American Federation of Aviculture
FEPADE	Foundation of Enterprises for Education Development
FINET	Fund of National Investment in Electricity and Telecommunications
FISDL	Social Investment for Local Development Fund
FOB	Free on board
FODES	Social and Economic Development Fund
FOEX	Export Promotion Fund
FOSEP	Pre-investment Study Fund
FOVIAL	Road Maintenance Fund
FPEZ	Free port and economic zone
FS	Feasibility study
FTA	Free trade agreement
FTZ	Free trade zone
FUNDAUNGO	Doctor Guillermo Manuel Ungo Foundation
FUNDE	Foundation for Development
FUSADES	Economic and Social Development Foundation
FZ	Free zone
GATT	General Agreement on Tariffs and Trade
GCF	Gross capital formation
GDI	Gender related development index
GDP	Gross domestic product
GRDP	Gross regional domestic product
GESAL	National Geothermal Company
GIS	Geographic information system
GNP	Gross national product
GTZ	German Technical Cooperation Agency
HDI	Human development index
HPI	Human poverty index

ICO	International Coffee Organization
ICOR	Incremental capital-output ratio
ICT	Information and communication technology
IDB / IADB	Inter-American Development Bank
IE	Industrial estate
IEE	Initial environmental examination
IICA	Interamerican Institute for Agricultural Cooperation
INBI	Unfulfilled basic needs index
INCAE	Central American Institute of Business Administration
INSAFOCOOP	Salvadoran Institute for Promotion of Cooperatives
INSAFORP	Salvadoran Institute of Professional Formation
IQF	Individually quick frozen
IRR	Internal rate of return
ISDEM	Salvadoran Institute of Municipal Development
IT	Information technology
ITCA	Central American Institute for Technology
ITU	International Telecommunications Union
ITUS	Technological Institute of Usulutan
IVA	Value-added tax
JAF	Jute and allied fiber
JBIC	Japan Bank for International Cooperation
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
LASF	Dry fertilizer family latrine
LMU	Local management unit
LUCPA	La Union-Conchagua Planning Area
MAG	Ministry of Agriculture and Livestock
MARN	Ministry of Environment and Natural Resources
MFA	Multi-fiber Agreement
MICE	Meetings, incentives, conventions, and exhibitions
MIGA	Multilateral Investment Guarantee Agency
MINED	Ministry of Education
MOE	Ministry of Economy
MOP	Ministry of Public Works
NAFTA	North America Free Trade Agreement
NGO	Non-governmental organization
NIP	Employer Identification Number
NIT	Tributary Identification Number
O&M	Operation and maintenance
OCIA	Organic Crop Improvement Association
OD	Origin-destination
OML	Observatory of Neighbor Market
ONI	National Investment Office
OTEXA	Office of Textile and Apparel
PET	Polyethylene terephthalate
PNC	National Civil Police
PNCES	National Competitiveness Program of El Salvador
PNODT	National Plan for Regional Arrangement
PPP	Plan Puebla-Panama

PROARCA	Regional Environmental Program for Central America
PROCAFE	Coffee Producers Association
PROCANA	Sugar Cane Producers Association
PRODERNOR	Rural Development Project for the North-Eastern Region
PROESA	Promoting Investment in El Salvador (National Commission for Investment Promotion)
PROGOLFO	Project for Conservation of the Coastal Ecosystems in the Gulf of Fonseca
PROMUDE	Advisory Program for the Municipal Promotion and the Decentralization
QC(C)	Quality control (circles)
R&D	Research and development
SALT	Sloping agricultural land technology
SAMO	Agroindustrial System of Organic Cashew
SCM	Supply chain management
SICA	Central American Integration System
SICEX	Foreign Trade Integrated System
SIECA	Secretariat for Central American Economic Integration
SIEPAC	Central American Electric Interconnection System
SIGET	General Superintendence of Electricity and Communications
SME	Small and medium enterprise
SNET	National Service for Territorial Studies
SRMU	Sub-regional management unit
SS	Suspended solids
SSMR	San Salvador metropolitan region
T&V	Training and visit
TDS	Total dissolved solids
TPL	Tariff preference level
TSC	Trade specialization coefficient
UCA	Central American University
UCRAPROBEX	Union of Agrarian Reform Cooperatives of Producers, Processors and Exporters of Coffee
UES	University of El Salvador
UGB	Universidad Gerardo Barrios
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
UNIVO	University of the East
UPREX	Usulutan Producers and Exporters Union
USAID	United States Agency for International Development
USGS	United States Geological Survey
UT	Unit of transactions
VA	Value-added
VAT	Value-added tax
VMVDU	Vice Ministry of Housing and Urban Development
VOC	Vehicle operating costs
WTC	World Trade Center
WTO	World Trade Organization

Abbreviations of Measures

Length	
ft	foot, feet (≈0.3048m)
m	meter
km	kilometer
mi	mile (≈1.609km)
Nmi	nautical mile (≈1.852km)
TEU	twenty feet equivalent unit

Area	
ha	hectare
km^2	square kilometer
m^2	square meter
mz	manzana (≈0.7ha)
SME	square meter equivalent

Other	
¢	colon(es)
min.	minute
mo.	month
n.a.	not available or not applicable
p.a.	per annum
%	percent

Weight	
kg	kilogram
lb	pound (≈453g)
mg	milligram
MT	metric ton

Volume	
gal.	gallon (US≈3.785ℓ)
ℓ	liter
m^3	cubic meter
qq	quintal (≈100lb)

Energy	
GWh	gigawatt per hour
kWh	kilowatt per hour
MW	megawatt

Currency Equivalents
US$1.00=¢8.75 (fixed as of January 1, 2001)
US$1.00=¥106.59 (average Interbank rate for January 2004)

Source: "Historical Rates", OANDA.COM, http://www.oanda.com.

Chapter 1 INTRODUCTION

1.1 Background

1.1.1 Study rationale

(1) Recovery from the civil war

The economy of El Salvador recovered rapidly from the civil war, which ended in 1992 after over a decade of turmoil. The gross domestic product (GDP) increased during the postwar period of 1992-95 at the average annual rate of 6.2% (Central Reserve Bank of El Salvador). The economic growth slowed down subsequently to attain the average annual growth of GDP at 3.0% for 1995 through 2000. The economic growth has further slowed down thereafter partly due to the devastating earthquakes of early 2001.

The population of El Salvador started to increase at a high rate after the civil war. It increased from 5.1 million in 1990 to 5.6 million in 1994 at the average annual rate of 2.4%. The population growth has slowed down subsequently to the level of 1.9% per annum.

The economic reform program of the Government, including trade liberalization, privatization and dollarization, has supported the relatively high economic performance of El Salvador. The program has helped suppress inflation and stabilize the macro economy, and the Heritage Foundation assesses El Salvador as one of the three Latin American countries with most advanced economic liberalization.

(2) Challenges

While the Salvadoran economy has diversified during the recovery period, overcoming the dependence on coffee, sugar and other traditional industries, it has become increasingly dependent on the low value-added textile industry. Following the establishment of free trade zones, the export of textile products through “maquila” increased to claim a 60% share in the total export value, dominated by the export to the U.S.

The trade balance has been constantly in the red, compensated largely by remittances from overseas Salvadorans, which has accounted for 13-15% of the GDP in recent years. The gross capital formation (GCF) accounted only for 17% of the GDP in 2000, among the lowest of Central American countries, and the ratio of gross domestic saving to the GDP was mere 2% in 2000. Although foreign direct investment (FDI) and development aid increased significantly during the recovery period, they accounted for 8.3% and 8.0% of the GCF respectively in 2000, generally lower than the levels in other Central American countries.

Through the economic recovery, disparities among the people and the regions have widened. The average income in the northern frontier along the borders with Honduras and in the Eastern Region is much lower than the national average. The poverty incidence in Morazan in the

northeast, for instance, was 58.5% as compared to the national average of 38.8%.

Extensive agricultural practices relying on generally rich soil and water resources have resulted in reduced land productivity in some areas. Forest resources degraded further due to the civil war. These conditions make the land of El Salvador vulnerable, aggravating damages by natural disasters such as the hurricane Mitch in 1998 and the earthquakes in 2001.

(3) Opportunities

Owing to its geographic location and the successful economic reform, El Salvador has benefited from economic globalization and trade liberalization. The total export and import value doubled during 1994-2001. In particular, the maquila export and import accounted for 57.7% and 23.1% respectively of the total export and import value in 2001. El Salvador has concluded a free trade agreement (FTA) with Mexico, Chile, Dominican Republic, and Panama, and is negotiating the same with Canada, the U.S. and EU. Practically no customs duties exist between El Salvador, Guatemala, Honduras, and Nicaragua.

It is expected that the La Union port at the eastern end of the Country will be revitalized with support of an yen loan in the amount of ¥11.23 billion (about US$90 million) provided by the Japan Bank for International Cooperation (JBIC). It will become the only port on the Pacific side of Central America with a large container terminal. It will constitute core facilities of the transportation infrastructure to support the Central America Integration System (SICA) according to the Plan Puebla Panama (PPP). The port of La Union may serve as a hub of international trade not only for Central America but also for the Americas and even beyond at large.

(4) Need for the Study

El Salvador needs to overcome these economic, social and environmental problems as outlined above in order to attain sustainable development. To continue the economic growth in increasing globalization of the world economy and further trade liberalization, El Salvador needs to deepen its economic structure through increase in FDI and introduction and innovation of associated technologies. The planned revitalization of the La Union port may be effectively utilized to increase trade and attract foreign investment.

To realize sound and sustainable development, however, such foreign trade and investment must be utilized to benefit the people of El Salvador through creating income generating opportunities and developing domestic industries based on indigenous resources as well as imported goods and materials. To utilize indigenous resources effectively, environmental quality and capacity need to be restored and enhanced through proper management of land and water resources; human resources capacity should be expanded; and resources of overseas Salvadorans should be mobilized.

Increase in foreign trade and investment and development of indigenous industries in association with the export industry including export processing and transshipment need to be planned carefully so that they will contribute to deepening the economic structure, generating income and employment opportunities and alleviating poverty. A planning study (the Study, hereafter) should delve into all the possibilities, both positive and negative, that may evolve from the expected revitalization of the La Union port.

1.1.2 The Study Area

The Study will cover the entire El Salvador for economic development framework focusing particularly on the Eastern Region and the La Union port located at the eastern end of the Region for detailed analysis and planning (referred to as the Eastern Region or the Region, hereafter). The Country has land area of 20,718km^2 and a population of 6,272,353 (as of 2000). The Eastern Region consists of four departments of San Miguel, La Unión, Morazán, and Usulután (the latter three to be spelled La Union, Usulutan and Morazan, respectively hereafter). The Region has land area of 7,394km^2 or 35.7% of the national land, and its population of 1,281,428 as of 2000 accounts for 20.4% of the total population in the Country. The Eastern Region with the four departments and El Salvador are compared in Table 1.1 by selected socioeconomic indices.

1.1.3 Study objectives

Based on the scope of work for the Study agreed between National Development Commission (Comisión Nacional de Desarrollo/CND) of the Government of the Republic of El Salvador and the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of technical cooperation under the official development aid program of the Government of Japan, the objectives of the Study are as follows:

(1) To formulate a master plan for the balanced economic development of El Salvador aiming at strengthening the competitiveness of El Salvador through promoting export and FDI and developing the Eastern Region of the Country; and

(2) To enhance the capacity of the national and regional counterparts to promote and lead the economic development, assuring the ownership by the Government of El Salvador in the implementation of the master plan.

The master plan to be formulated through the Study should provide answers to the following key issues related to the economic development of El Salvador, development of the Eastern Region, and utilization of the La Union port.

(i) What functions and facilities should the La Union port be equipped with for the port to serve Central America, and what infrastructure and institutional measures would support such functions?

Table 1.1. Comparison between El Salvador and the Eastern Region by Socioeconomic Indices, 2000

Category	Index (unit)	Usulutan	San Miguel	Morazan	La Union	Eastern Region	El Salvador
Land area	(km^2)	2,130	2,077	1,112	2,074	7,394	20,718
Administration	No. of municipalities	23	20	26	18	87	262
	No. of districts	233	179	131	158	701	2,296
Population	Total	336,996	480,769	174,359	289,304	1,281,428	6,272,353
	Density (people/km^2)	158	231	156	139	173	298
	Urbanization (%)	43	50	31	28	40	58
	Male-female ratio (%)	94	93	92	89	92	92
Work & employment (1992-2000)	Working pop. (% of age>10)	76.3	77.7	74.4	74.1	76.1	76.2
	Economic pop. (% of working pop.)	48.6	47.3	50.2	46.0	47.7	52.2
	Unemployment (%)	6.2	5.3	6.1	6.7	6.0	5.8
	Pop. increase (% p.a.)	1.03	2.22	1.07	1.56	1.59	2.57
Birth & death (1998)	Gross birth rate (/10^3)	27.4	28.0	32.3	30.8		25.2
	Gross death rate (/10^3)	6.1	6.2	7.1	6.6		4.8
	Infant death rate (/10^3)	32.5	29.7	42.8	37.6		
Life expectancy	Male	66.3	66.5	63.4	64.4		
	Female	72.5	73.0	68.0	72.0		
Literacy	Male						82
	Female						76
Income & poverty	Household income (¢/mo.)	2,520	2,986	2,246	2,473	2,655	3,690
	Absolute poverty (%)	22.3	18.9	30.0	23.3	(28.2)	16.0
	Poverty rate (%)	49.8	47.0	58.5	49.0	(57.7)	38.8
Remittance from overseas	Recipient families (%)	24.4	28.4	30.0	40.7	30.2	19.7
	Ave. amt. received per family (¢/mo.)	1,097	1,037	1,102	1,192	1,103	1,057
Maize production	Cultivated area (mz)	46,800	45,000	22,200	43,200	157,200	370,370
	Amt. produced (t)	68,080	58,402	25,300	46,782	198,564	582,967
	Yield (t/mz)	1.45	1.30	1.14	1.06	1.26	1.57
Livestock	Cattle	111,900	176,100	82,100	101,600	471,700	1,050,000
	Swine (family-owned)	21,596	21,246	15,592	19,079	77,513	186,447
Enterprises	Manufacturing					2,566	16,302
	Commercial					15,816	89,427
	Services					6,420	38,624
Employment	Manufacturing					10,363	214,501
	Commercial					34,484	226,204
	Services					23,856	180,458

Sources: DGEC, *Anuario Estadístico 2001*; DGEC (Aug. 2001), *Encuesta de Hogares de Propósitas Múltiples 2000*; MAG, *Anuario de Estadísticas Agropecuarias 2000-2001*.

(ii) How should the Eastern Region be developed by utilizing the La Union port effectively, and what conditions would ensure complementary development of indigenous and/or export-oriented industries in the Eastern Region and the functions/facilities of the La Union port?

(iii) What kind of products and industries should be attracted to El Salvador in order to establish comparative advantage against other countries in Central America within the context of globalizing economy, and what measures would be effective in attracting them?

(iv) What kind of central functions may be established, capitalizing on its strategic location in

Central America and the La Union port, for El Salvador to enhance its international status in relation particularly to Asia?

1.2 Work Progress

1.2.1 Inception works

A team of experts led by RECS International Inc. in association with Nippon Koei Co., Ltd. and UNICO International Corp. was nominated by JICA to undertake the Study. The team (the JICA Study Team hereafter) started preparatory works in Japan and compiled the Inception Report at the end of October 2002. The first fieldwork started upon the arrival of the first group of the JICA Study Team in El Salvador on November 5, 2002. The JICA Study Team had a series of intensive discussions with CND on the scope of work for the Study based on the Inception Report. CND and the JICA Study Team agreed on the basics of the Study and also on the procedure to harmonize the views of both sides on the Inception Report. Based on the agreement, CND convened the first meeting of the Steering Committee for the Study on November 8. Over 30 representatives of various organizations and institutes participated in the meeting. Representatives of CND and the JICA Study Team signed the minutes of meetings.

During the following week between November 11 and 13, CND and the JICA Study Team had follow up discussions as agreed above. Emphasis on different tasks of the Study as well as some expressions in the Inception Report were adjusted. Also, CND and the JICA Study Team concluded a protocol for the joint undertaking of the Study.

The CND/JICA joint team conducted the first fieldtrip to the Eastern Region during November 20 through 27. The joint team held a series of meetings with various groups involved in the management and development of the Region. The team also visited several sites of ongoing or planned development activities.

The results of works during this inception stage were compiled into the Initial Fieldwork Report, which was submitted in early December 2002. The report contains a revised version of the Inception Report as discussed and agreed between CND and the JICA Study Team, and initial analysis on territorial development with clarification of the position of the Eastern Region and its development issues.

1.2.2 Analysis on existing conditions

The Study continued after the submission of the initial fieldwork report to analyze existing conditions by sector. To supplement readily available data and study reports, a few surveys were conducted during this period in close collaboration with Salvadoran experts and assistants. The survey on the existing enterprises was entrusted to a local firm under the supervision of the

Study Team. Salvadoran experts and the Study Team conducted other surveys jointly.

The existing conditions were analyzed, development issues clarified, and prospects for development assessed by sector. Partial output of the surveys was also utilized for the analysis. Based on these analyses, the Progress Report 1 was compiled. Some survey results were not fully analyzed due to their timing, and thus not reflected in the Report.

Based on the outcomes during this period, a regional workshop was held in San Miguel on February 21. Some 140 people representing various local organizations participated in the group discussions as well as plenary sessions. Also, a central seminar was convened in San Salvador on February 24 to exchange views on the prospects for the Eastern Region development.

1.2.3 Restructuring and resumption of the Study

Based on the progress of the Study during the first fieldwork from November 2002 through March 2003 and the comments on the Progress Report 1, emphases on different aspects of the Study were modified. After a series of discussions and preparatory works, JICA and the consultants of the JICA Study Team agreed on restructuring the Study with additional tasks.

The second fieldwork of the Study started on April 28, 2003 with the dispatch of the team leader and deputy team leaders of the JICA Study Team together with the JICA Advisory Team. At the beginning, they had intensive discussions with CND on the scope of work for the second fieldwork and specific tasks based on the paper that the Study Team prepared in Japan and submitted to CND in advance. They also had a series of discussions with key agencies related to the Study, including the Ministries of Foreign Affairs, Finance, Economy, Environment and Natural Resources, Agriculture and Livestock, and Education; CEPA and PROESA. The Advisory Team visited the Eastern Region and had discussions with various groups.

1.2.4 Preparation of economic development master plan focusing on the Eastern Region

The Study progressed by sector to prepare the first draft of the economic development master plan focusing on the Eastern Region. Some supplemental works to the first fieldwork were also carried out. The results of all the surveys conducted during the first fieldwork were fully compiled and analyzed.

The JICA Study Team established its San Miguel office in mid-May. More Study Team members spent longer periods of time in the Eastern Region based at this office to communicate with local people and visit potential project sites.

Additional surveys were conducted in cooperation with Salvadoran experts and assistants. A survey on potential investors was carried out in both Japan and the neighboring countries to examine private firms' perceptions of El Salvador as investment destination and conditions that

they require. A survey on locational conditions for industrial establishments was carried out to facilitate the formulation of proposals to establish an FTZ and other facilities in the Eastern Region. Another survey was conducted to elucidate intentions of potential users, ideas and conditions for use concerning the utilization of the La Union port. As an initial step, seminars were organized in San Pedro Sula, Honduras, on June 3 and San Salvador on June 11. In connection with the former, the CND/JICA joint team organized a field trip along the route of the proposed inter-oceanic logistic corridor from El Amatillo, through Comayagua to the Cortes port.

A survey on Salvadorans living in the U.S. was carried out, including a questionnaire survey in Los Angeles, San Francisco and Washington D.C. A new survey on the conditions of public safety in the Eastern Region was also carried out.

The rural socioeconomic survey, which started during the first fieldwork, proceeded to the second phase to formulate rural development projects by a participatory approach. The results of the survey during the first fieldwork were taken as the point of departure, and the existing development initiatives were identified, which were elaborated through community workshops. Also, candidate pilot projects for rural development were identified. In this connection, the Study Team participated in the project formulation workshops of different groups in the Eastern Region organized by CND on May 28, 2003. The results were reflected in the initial formulation of priority projects.

A pilot project on indigo industrialization was initiated during this period. The pilot project was continued through this stage of the Study.

1.2.5 Revision of the master plan and action planning

Compiling the outcome of all the works outlined above, an Interim Report was prepared and submitted in August 2003. Upon submitting the Report, the third central seminar was convened in San Salvador on August 12, and the third regional workshop was organized in San Miguel on August 13. CND and the JICA Study Team also held separate sessions to discuss the contents of the Interim Report and the tasks of the subsequent stage of the Study. Based on these, minutes of meetings were prepared and signed by representatives of CND and the JICA Study Team. The JICA Study Team received additional comments later in writing from several Salvadoran Government agencies and institutes.

After the submission of the Interim Report, the JICA Study Team further elaborated various project proposals in cooperation with relevant agencies and institutes as well as CND, analyzed investment trends, and prepared an indicative investment schedule. Including the latter as well as reflecting the comments on the Interim Report, the draft master plan was revised. Moreover, an action plan was prepared, highlighting initial actions to be taken immediately following the

master plan completion through up to the year 2009.

During this period, all the surveys initiated during the second fieldwork that started in April 2003 were completed. In addition to the ongoing pilot project on indigo industrialization, the CND/JICA joint team formulated some more pilot projects through communications with various local groups in the Eastern Region. A local consulting firm selected through competitive bidding also embarked on the initial environmental examination (IEE) of the two priority projects, viz., the Rio Grande de San Miguel water resources development and the free port and economic zone (FPEZ) establishment.

1.2.6 Preparation of the draft final report

Elaboration of the master plan and proposed measures continued for October through December. For selected priority projects, in-depth studies were carried out to prepare more detailed project proposals. IEE of the two priority projects was completed. The initial phase of the pilot project on indigo industrialization was effectively completed. Preparation for its continuation and the initiation of a few other pilot projects was also completed. The results of all the surveys conducted as part of the Study were compiled. Including all these works, the Draft Final Report was compiled.

To present the Draft Final Report formally, the JICA Study Team took on its final fieldwork from January 11 through 18, 2004 together with the Advisory Committee Chairperson and representatives of the JICA headquarters. The fourth central seminar was convened in San Salvador on January 13, and the fourth regional workshop was organized in San Miguel on January 14. CND and the JICA Study Team had separate sessions to discuss the Draft Final Report and also possible follow-ups of the Study. Based on these, minutes of meetings were prepared and signed by representatives of CND and the JICA Study Team on January 16.

1.2.7 Finalization of the Study

Several Salvadoran Government agencies and institutes as well as CND submitted their comments on the Draft Final Report. They were transmitted to the JICA headquarters in Tokyo and the JICA Study Team for review. Based on the review, necessary revisions have been made on the Draft Final Report and the Final Report of the Study prepared with the following five volumes.

Volume 1:	Executive Summary
Volume 2:	Master Plan Report
Volume 3:	Project Report
Volume 4:	Sector Review Report
Volume 5:	Survey Report

The present volume is Volume 2: Master Plan Report, containing the Master Plan for the

Economic Development Focusing on the Eastern Region. Volume 1 presents a summary version of the Master Plan. Volume 3 contains more detailed proposals and analyses, including project profiles, in-depth studies, initial environmental examination, and the indigo pilot project. The remaining volumes are supporting reports. Volume 4: Sector Review Report presents the analyses on existing conditions by sector. Volume 5: Survey Report contains the results of the surveys conducted as part of the Study.

1.3 Guide to the Report

The remaining part of the Master Plan Report is organized in the following way. In Chapter 2, macro pictures of national economic and spatial development are presented to clarify development issues that may be addressed in pursuing the economic development focusing on the Eastern Region. In Chapter 3, the objectives and strategy for the economic development focusing on the Eastern Region, established through the first fieldwork, are presented together with national visions and objectives.

In Chapter 4, conditions that affect the competitiveness of the Salvadoran economy are examined, the comparative position of El Salvador clarified, and the strategy for investment and export promotion presented. In Chapter 5, the competitiveness of Salvadoran industries and commodities is assessed, those promising in the Eastern Region identified, and the strategy to promote most promising industries/commodity groups in the Eastern Region derived.

Chapter 6 presents the socioeconomic framework for the Eastern Region in the context of national socioeconomic development, and the spatial development framework for the Region as well. In Chapter 7, the development scenario for the Eastern Region is presented vis-à-vis the scenario for the La Union port revitalization. The impact of the La Union port revitalization on the Eastern Region and, in turn, on the Salvadoran economy is also examined. In Chapter 8, the development strategy by sector is presented for economic development, infrastructure development, and human development.

In Chapter 9, development plans are presented for the Eastern Region and the La Union-Conchagua area, and development programs and projects are described. Institutional and financial measures to support the Eastern Region development are also proposed, and an indicative investment schedule presented. The action plan is presented, including initial actions to be taken upon the Master Plan completion.

Chapter 2 NATIONAL ECONOMIC AND SPATIAL DEVELOPMENT

2.1 National Economic Development

2.1.1 Overview of performance

(1) Economy

The economy of El Salvador made steady growth during 1970's, as reflected in continuous increase in per capita GDP up to 1978, from ¢9,219 in 1975 to ¢10,145 in 1978 at constant 1990 prices (Central Reserve Bank of El Salvador). This was supported mainly by the agricultural sector, which contributed to some 40% of the GDP, two-third of foreign currency earnings by agricultural exports, and 25% of the income tax at the end of 1970's. The sector provided well over 50% of employment opportunities. The economy started to deteriorate as the civil war intensified on a full scale in 1979, when the per capita GDP also started to decline.

The Salvadoran economy as a whole stagnated almost completely during 1980's. During this period, the per capita GDP decreased from ¢8,271 in 1980 to ¢6,926 in 1989 at constant 1990 prices. The economic structure changed drastically over the decade. While the industry and the services sectors attained modest gains, the agricultural GDP decreased by more than 50%. This is due to the neglect by both the Government without any adequate agricultural policy and the people involved inevitably in armed conflicts. Ironically, increased emigrants and family remittances from abroad during the civil war contributed to the services sector development with booming financial services.

The economy of El Salvador started to recover rapidly as the civil war ended in 1992. The GDP increased during the post war period of 1992-95 at the average annual rate of 6.2% (Central Reserve Bank). This is largely due to the structural adjustment policy and the economic stabilization program adopted in 1989. The policy aimed to restore macroeconomic stability and establish market-oriented economy through tight money policy, deregulation of interest rates, foreign exchange, trade restrictions and subsidies on sugar and coffee markets and other areas, tax reform, and financial strengthening of State banks for privatization. These measures have been taken over by successive administrations. In addition, the dollarization was introduced in 2001, which has resulted in the reduction in interest rates.

The economic growth slowed down subsequently, averaging at 3.0% for 1995 through 2000 (Table 2.1). Factors contributing to the slowdown are: falling export prices of coffee and sugar in 1996-97, the impact of the hurricane Mitch in late 1998, and an adverse external environment after 1999, including the further decline in coffee prices, loss of regional competitiveness due to the depreciation of the Guatemalan Quetzal, increased competition for non-traditional and maquila exports to the U.S. market, higher world oil prices, and an increase in crime and violence (World Bank, Country Assistance Strategy for the Republic of El Salvador, 2001).

The economic growth further slowed down thereafter partly due to the earthquakes of early 2001 that devastated the Country. The changes in the economic structure and GDP growth since 1980 are summarized in Table 2.2.

Table 2.1. Macroeconomic Performance of El Salvador, 1994-2002

Index (unit)	1994	1995	1996	1997	1998	1999	2000	2001	2002
GDP at current prices (US$10^6)	8,086	9,500	10,315	11,135	12,008	12,465	13,139	13,739	14,227
GDP real growth (% p.a.)	6.1	6.4	1.7	4.2	3.7	3.4	2.2	1.8	2.1
Agriculture	-2.4	4.5	1.3	0.4	-0.7	7.7	-3.1	-2.1	0.2
Manufacturing	7.4	6.9	1.7	8.0	6.6	3.7	4.1	4.2	3.0
Construction	11.5	6.1	2.7	6.2	8.5	-1.8	-3.4	10.0	4.6
Commercial services	8.6	9.9	0.4	2.9	4.0	2.0	3.3	1.6	1.0
Financial services	20.2	16.4	2.7	12.6	9.6	12.0	6.7	1.6	1.3
Other services	3.9	4.3	2.4	4.1	2.4	2.9	2.4	0.8	2.5
Fixed capital formation (US$10^6)	1,493	1,778	1,630	1,790	2,002	2,003	2,224	2,269	2,308
% of GDP	18.5	18.7	15.8	16.1	16.7	16.1	16.9	16.5	16.2
Net trade balance (US$10^6)	-1,325	-1.677	-1,433	-1,143	-1,306	-1,356	-1,740	-1,905	-1,906
% of GDP	16.4	17.7	13.9	10.3	10.9	10.9	13.2	13.9	13.4
Net services balance (US$10^6)	22	26	10	-152	-149	-183	-235	-303	-194
Net revenue (US$10^6)	--	--	--	-163	-163	-282	-253	-266	-287
Net transfer (US$10^6)	1,285	1,390	1,255	1,361	1,527	1,582	1,797	2,284	2,003
% of GDP	15.9	14.6	12.2	12.2	12.7	12.7	13.7	14.6	
Current account balance (US$10^6)	-18	-262	-169	-98	-91	-239	-431	-190	-384
Net capital inflow (US$10^6)	161	408	334	665	1,063	653	488	503	560
Net international reserve (US$10^6)	788	935	1,100	1,462	1,765	1,970	1,891	1,710	1,589
External debt outstanding (US$10^6)									
Public sector	1,880	1,977	2,277	2,452	2,467	2,628	2,677	3,028	3,892
Banking sector	176	191	241	237	179	161	154	120	95
Total	2,056	2,168	2,518	2,689	2,646	2,789	2,831	3,148	3,987
Domestic debt outstanding (US$10^6)	1,318	1,373	1,384	1,337	1,348	1,560	1,951	2,379	2,450
Total public debt outstanding (US$10^6)	3,374	3,542	3,902	4,027	3,994	4,349	4,782	5,526	6,437

Source: Central Reserve Bank of El Salvador, *Annual Economic Indicators 1994-2002*.

Table 2.2. Changes in Economic Structure and GDP Growth, 1980-2000

	1980	1990	1999	2000
GDP at current prices (US$10^9)	3.6	4.8	12.5	13.2
GDP structure (%)				
Agriculture	38.0	17.1	10.7	10.1
Industry	21.9	26.2	29.1	30.2
Manufacturing	16.5	21.7	22.5	23.4
Services	40.1	56.6	60.1	59.6
GDP Growth (% p.a.)	1980-90		1990-2000	
	0.2		4.7	

Source: World Bank, *Country Assistance Strategy for the Republic of El Salvador*, 2001.

(2) Trade

During the 1970's, El Salvador exported mainly traditional goods represented by coffee and sugar, and attained trade surpluses of US$20 to 100 million in most years, accounting for 1-6% of the GDP. As the civil war intensified, the export declined while the import remained the same or increased slightly. Consequently, the trade deficit increased after 1981, which had continued until 1995.

Export and import by commodity during 1994-2002 are summarized in Table 2.3. Following the establishment of free trade zones, the export of textile products through maquila increased rapidly, and dependence on traditional goods decreased drastically. In particular, the share of coffee and its products in the total export value decreased from 21.7% in 1994 to 3.6% in 2002, due also to significant decline in coffee prices in the international market. The import of El Salvador is characterized by a small share of capital goods, claiming only 17.0% of the total import value in 2002, decreased from a 25.9% share in 1994. The import of intermediate goods has the largest share (31.8% in 2002), followed by consumer goods (26.5%).

Table 2.3. Export and Import Value by Commodity, 1994-2002

(Unit: US$10^6)

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Export									
Coffee & its products	271	364	340	522	326	248	301	115	107
Sugar	30	38	37	56	66	37	40	70	44
Shrimps	23	26	39	30	33	25	16	20	10
Others	495	577	609	763	831	867	975	1,009	1,073
Maquila	430	607	764	1,055	1,185	1,833	1,609	1,650	1,758
Total export value	1,249	1,652	1,788	2,426	2,441	2,510	2,941	2,864	2,992
Import									
Consumer goods	598	802	792	913	930	1,005	1,218	1,280	1,373
Capital goods	666	843	672	745	832	817	958	901	883
Intermediate goods	988	1,211	1,207	1,322	1,359	1,318	1,618	1,685	1,651
(Crude oil)	112	111	122	120	87	115	210	169	175
Maquila	322	473	551	764	847	955	1,153	1,161	1,283
Total import value	2,574	3.329	3,222	3,744	3,968	4,095	4,947	5,027	5,190

Source: Central Reserve Bank of El Salvador, *Annual Economic Indicators 1994-2002*.

Maquila shares increased rapidly in both export and import value, reaching 58.8% of the export and 24.7% of the import in 2002. It is interesting to note that the value-added ratio of maquila, defined here as the export value minus import value divided by the latter, increased steadily over 1994-2001, from 33.5% in 1994 to 42.3% in 2001 (decreased to 37.0% in 2002). This reflects diversification of maquila products, particularly textile products with higher value-added and possibly initial development of related domestic industries such as embroidery and laundry services. The diversification of textile products has been supported by the enhanced Caribbean Basin Initiative (CBI) access that allows duty-free and quota free export of a wider

range of products from El Salvador to the U.S.

The export and import value of El Salvador by trade partner is summarized in Table 2.4. The export is dominated by destination to the U.S. with a 67.0% share in the total export value in 2002. The share is even larger for maquila export with over 80% destined to the U.S. The shares of European countries in the total export value decreased mainly due to the decline in coffee prices. The share of export to Central America stayed more or less at the same level, 25-30% of the total export value, although the total value increased at the average rate of 11.2% per annum over 1996-2000. The number of trade partners for export has not increased much in the past five years.

Table 2.4. Export and Import Value by Trade Partner, 1994-2002

(Unit: US$10^6)

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Export destination									
Costa Rica	73	88	93	112	110	92	86	95	107
Guatemala	177	217	211	266	284	284	319	323	344
Honduras	56	80	98	136	149	172	225	184	176
Nicaragua	37	42	54	65	75	91	107	120	113
USA	606	856	955	1,319	1,447	1,576	1,920	1,874	2,005
Japan	7	14	10	14	13	8	9	6	6
Germany	123	140	159	240	140	105	94	49	36
Other	170	215	210	274	223	182	181	213	206
Import origin									
Costa Rica	79	97	102	117	115	116	144	163	149
Guatemala	242	304	280	329	350	384	478	435	419
Honduras	46	55	70	85	88	88	119	135	157
Nicaragua	32	37	54	51	49	65	70	88	98
USA	1,233	1,675	1,607	1,976	2,032	2,110	2,451	2,463	2,575
Japan	413	142	114	92	145	127	122	124	137
Germany	72	89	98	93	90	75	76	89	81
Others	728	931	898	1,001	1,099	1,130	1,487	1,529	1,576

Source: ibid.

The U.S. is also the dominant origin of import for El Salvador, accounting for 49.6% of the total import value in 2002. Maquila import increased its share from 20.6% in 1998 to 22.9% in 2001. If maquila import is excluded, the total trade value for Central America, ¢11,792 million in 1998, is comparable to that for the U.S., ¢12,591 million in the same year. While the trade with Asia is still small, ¢2,604 million in 1999, it surpasses the trade with South America, ¢2,069 million in the same year (Table 2.5).

(3) Balance of payment and finance

As seen above, the trade balance of El Salvador has been consistently in the red in recent years, and the trade deficit is increasing. The trade deficit has been compensated largely by remittance from overseas Salvadorans, accounting for 13-15% of the GDP in recent years. Still

Table 2.5. Trade Structure of El Salvador with Regions and Countries, 1998

(Unit: ¢10^6)

Region/country	Export	Import	Total trade value (% Share)
North America	2,504	12,615	15,119 (27.1)
USA	2,312	10,278	12,590 (22.6)
Central America	5,626	6,166	11,792 (21.1)
Caribbean countries	236	718	954 (1.7)
South America	146	1,923	2,069 (3.7)
Europe	2,300	2,986	5,286 (9.5)
Asia	134	2,470	2,604 (4.7)
Japan	109	1,266	1,375 (2.5)
Others	15	239	254 (0.5)
Maquila	10,309	7,369	17,678 (31.7)
Total	21,270	34,486	55,756 (100.0)

Source: DGEC, *Anuario Estadístico 1999*.

current account balance has been negative (Table 2.1). The net capital inflow, including external loans and foreign direct investments, however, is large enough to compensate for the current account deficit. Increase in international reserves has been larger than the increase in external debt since 1994. The external debt stands at US$3,140 million as of the end of 2001, corresponding to 22.9% of the GDP in the same year.

The total revenue of the Government was US$1,648 million in 2001, while the total expenditure was US$2,132 millions in the same year (Table 2.6). The balance was financed by external loans. The total current revenue was US$1,595 million in 2001, consisting of revenues from value-added tax accounting for 50.7%, income tax (27.0%), other taxes (22.2%), and non-tax sources (9.3%). Revenue from value-added tax has increased its share steadily in the total revenue to compensate for the reduction in customs duties as the Country pursues free trade and regional cooperation in Central America.

Table 2.6. Public Finances of El Salvador, 1994-2002

(Unit: US$$10^6$)

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total revenue	1,066	1,242	1,332	1,312	1,401	1,414	1,584	1,650	1,793
Total expenditure	1,125	1,294	1,541	1,438	1,636	1,681	1,888	2,143	2,242
Current revenue	933	1,156	1,310	1,286	1,387	1,393	1,485	1,599	1,746
Tax revenue by source									
Income tax	204	301	305	323	351	393	429	431	457
Property tax	33	13	10	13	14	14	12	12	12
Customs duties	171	199	163	146	146	148	141	146	155
Products tax	70	75	72	72	66	51	49	49	67
Services tax	9	10	0	0	0	0	0	0	0
Value-added tax	356	470	541	593	650	669	714	809	837
Other taxes	14	10	4	1	0.4	0	0	0	3
Total tax revenue	857	1,078	1,095	1,148	1,227	1,274	1,341	1,447	1,531
Non-tax revenue	70	77	214	137	159	119	144	150	151

Source: Central Reserve Bank of El Salvador, *Annual Economic Indicators 1994-2002*.

2.1.2 Problem structure of macro-economy

Comparison with other countries in Central America clarifies the characteristics of El Salvador macroeconomy (Table 2.7). El Salvador accounts for 5% of the land area, 18.8% of the population, and 23% of the gross national product (GNP), respectively of the five countries combined. In terms of per capita GNP, El Salvador holds a middle position, higher than Nicaragua, Honduras and Guatemala and lower than Costa Rica, Panama and Belize. This position of El Salvador is the same also for the average life expectancy and the adult literacy ratio.

Table 2.7. Comparison of El Salvador with Selected Countries by Basic Indices, 2000

Country	Population (10^6)	Area ($10^3 km^2$)	GNP (US10^9)	Per capita GNP (US$)	Life expec-tancy (yrs.)	Adult illiteracy (%)	
						Male	Female
Nicaragua	5	130	2.1	400	69	34	33
Honduras	6	112	5.5	860	66	25	25
Guatemala	11	109	19.2	1,680	65	24	39
Costa Rica	4	51	14.5	3,810	77	4	
Panama	3	76	9.3	3,260	75	7	9
Belize	0.24	23	0.75	3,110	74	7	
El Salvador	6	21	12.6	2,000	70	18	24
Mexico	98	1,958	497.0	5,070	73	7	10
USA	282	9,629	9,601.5	34,100	77	-	-
Japan	127	378	4,519.1	35,620	81	-	-

Source: World Bank, *World Development Indicators 2002*.

The ratio of the gross capital formation (GCF) to the GDP in El Salvador was 17% in 2000, among the lowest in Central America, and the gross domestic saving to the GDP was mere 2% in 2000 (Table 2.8). As seen already, the chronic trade deficit has been compensated by the transfer, corresponding to 13-15% of the GDP in recent years.

Table 2.8. Comparison between El Salvador and Selected Countries for Investment and Saving Structure, 1990-2000

	Gross capital formation (% of GDP)		Gross domestic savings (% of GDP)		Foreign direct investments (% of GCF)		External aid (% of GCF)
Country	1990	2000	1990	2000	1990	2000	2000
Nicaragua	19	34	-2	-7	0.0	30.8	68.1
Honduras	23	35	20	21	6.3	13.6	21.6
Guatemala	14	17	10	9	4.6	7.2	8.3
Costa Rica	27	17	21	19	10.4	15.1	0.4
Panama	17	30	21	24	14.8	20.2	0.6
El Salvador	14	17	1	2	0.3	8.3	8.0
Mexico	23	23	22	21	4.3	9.9	-
USA	18	21	16	18	4.8	15.8	-
Japan	33	26	34	28	0.2	1.1	-

Source: ibid.

Thus, the overseas remittance effectively serves as an alternative to savings although its contribution to investment is limited. This is in contrast with other countries where foreign direct investments or aids or both are more important in filling the saving-investment gaps. In El Salvador, foreign direct investments and aids correspond to 8.3% and 8.0% respectively of the GCF, relatively low by the Central American standards. While El Salvador has been successful in increasing the tax revenue with the introduction of the value-added tax as custom duties have decreased along with the promotion of free trade, the national finance is still debt-stricken.

Although the Salvadoran economy has diversified especially after the civil war, overcoming the dependence on coffee, sugar and other traditional industries, it has become increasingly dependent on the low value-added textile industry. While the export has expanded rapidly following the establishment of free trade zones, most maquila industries are textile manufacturers (121 out of 127 establishments in free zones as of 2001), relying heavily on export to the U.S. They are benefiting from the enhanced CBI effected in late 2000.

El Salvador will have to cope with further economic liberalization and free trade with the problem structure of its macroeconomy described above. Particularly in the short to medium term future, El Salvador is vulnerable to adverse external developments including: (i) a longer than expected slowdown in the world economy, especially in the U.S. and Central America; (ii) loss of export competitiveness following dollarization and eventual strong dollar; (iii) declining terms of trade; and (iv) uncertainty over the sustained competitiveness of maquila export (World Bank, op. cit.).

2.2 National Spatial Development

2.2.1 Overview

The Republic of El Salvador occupies the central part of the Central American isthmus, facing the Pacific Ocean, with a total land area of 20,718km^2. Administratively, it is subdivided into 14 departments, consisting in total 262 municipalities and 2,296 districts (cantón). The 14 departments are compared in Table 2.9 by selected indices to see the spatial distribution of some basic aspects of development.

The population density varies widely between departments, from the extreme in San Salvador at 2,240 per km^2, followed by 412 per km^2 in La Libertad to 98 per km^2 in Chalatenango. Four departments with the northern border with Honduras, except San Miguel, have low density below 200 per km^2, together with San Vicente and Usulutan. Population grown rates are also low in these six departments, below 1.6% per annum during 1992-2000, indicating the lack of economic dynamics. Of these departments, poverty incidence is over 50% in the four departments of Chalatenango, Cabañas, San Vicente, and Morazan and close to 50% in the two departments of Usulutan and La Union. The population growth is relatively low also in

Cuscatlán (1.64% per annum), while the poverty incidence is relatively low (35%) in the department. This indicates the urban-pull factor for the low population growth in Cuscatlán located next to San Salvador, while for the other departments the rural-push factor accounts for the low population growth.

Table 2.9. Comparison of 14 Departments by Basic Indices

	Land area (km^2)	Population 2000	Pop. growth, 1992-00 (% p.a.)	Population density (/km^2)	Maize area (% of total land)	Coffee area (% of total land)	Poverty incidence (%)
Ahuachapan	1,240	318,843	2.52	257	20.3	19.8	60.0
Santa Ana	2,023	552,306	2.35	273	9.8	18.1	43.7
Sonsonate	1,226	449,467	2.81	367	7.5	18.5	45.9
Chalatenango	2,017	197,004	1.32	98	7.3	0.5	53.7
La Libertad	1,653	680,247	3.57	412	11.4	18.7	26.9
San Salvador	886	1,984,690	3.46	2,240	16.4	6.3	26.4
Cuscatlán	756	203,340	1.64	269	12.2	2.6	35.1
La Paz	1,224	291,220	2.14	238	12.3	4.3	43.1
Cabañas	1,104	152,030	1.18	138	8.3	0.3	54.6
San Vicente	1,184	161,778	1.55	137	11.3	1.9	63.3
Usulutan	2,130	336,996	1.03	158	15.4	8.4	49.8
San Miguel	2,077	480,769	2.22	231	15.2	4.3	47.0
Morazan	1,447	174,359	1.07	120	10.7	2.3	58.5
La Union	2,074	289,304	1.56	139	14.6	0.4	49.0
El Salvador	20,718	6,272,353	2.57	303	12.5	7.8	38.8

Source: The same as Table 1.1, except for the coffee area data from PROCAFE.

Maize cultivated areas are found extensively throughout the Country as maize is the staple crop, occupying 12.5% of the national land as a whole. The ratio of the maize area to the total land is the largest in Ahuachapán, followed by the three central departments of San Salvador, Cuscatlán and La Paz, and the Eastern Region. In the central part of the Country, hybrid maize is dominantly cultivated as food crop, but in the Eastern Region, domestic maize is more important as feed grain for livestock. The northern part of the Country and the Eastern Region are most important livestock regions in the Country.

There are three main coffee cultivated areas in the Country. The Western region, consisting of Ahuachapán, Santa Ana and Sonsonate, is the leading coffee producer centering around the Apaneca mountain range. The Bálsamo mountain area mainly in La Libertad is the second largest coffee producer, followed by the Tecapa mountain area in Usulutan. As coffee in El Salvador is cultivated mostly under shade trees (152,000ha), the coffee area constitutes important part of the remaining forest area, which occupied only 184,200ha or 8.8% of the natural land in 1990.

2.2.2 Urban centers

Distribution of urban centers in El Salvador is analyzed by using readily available statistics and

data derived from recent studies to clarify the existing urban hierarchy. Out of 262 municipal capitals, only those having larger urban population are subject to the analysis. The PNODT study has classified municipal areas into four classes: A for urban core of municipal capital including its spillover area, B for large settlement or population center in dominantly rural area, C for other settlements in dominantly rural area, and D for village/hamlet in strictly rural area (PNODT, *Primer Informe Parcial – Diagnóstico Sistema Urbano y Poblamiento 6. Demografía e Información Básica Municipal*, June 2002). Only 61 municipalities having urban population of Class A over 10,000 are selected for the analysis. Of these, nine are considered to constitute the core of the San Salvador metropolitan region (SSMR) with a total population of 1,352,037 and at the top of the urban hierarchy (Tier I).

The remaining 52 urban centers are analyzed with respect to potentials to serve various urban functions expected at different tiers of the hierarchy. Five criteria are used. The size of population is used to represent agglomeration economies. Population density indicates certain aspect of efficiency for urban services. The average annual rate of population increase over 1992-2000 is used to reflect economic dynamism. The urbanization ratio of each municipality is taken to see effectiveness of urban services. To reflect social aspects in the analysis, an index defined by a recent GTZ study is used (PROMUDE/GTZ, *Propuesta de una Tipología de Municipios para El Salvador*). This is a composite index defined by combining various factors related to the quality and levels of urban services, and called unfulfilled basic needs index (INBI). All the data are given in Table 2.10.

Ranking of urban centers

All the urban centers are classified into five ranks for each index as shown below to normalize the evaluation by different indices for comparison.

Rank	Population	Population density (/km^2)	Population growth (% p.a.)	Urbanization ratio (%)	INBI
1	Over 100,000	Over 1,000	Over 9.0	Over 80	8-25
2	40,000-99,999	400-999	5.0-8.9	60-79	26-33
3	20,000-39,999	200-399	3.5-4.9	40-59	34-39
4	12,000-19,999	100-199	2.0-3.4	20-39	40-47
5	Below 11,999	Below 99	Below 1.9	Below 19	Over 48

The overall rank of any urban center is determined by simply adding ranks by different indices. Based on the overall ranking, the 52 urban centers are categorized into four tiers: rank 5 to 10 for Tier II (seven urban centers), rank 11 to 15 for Tier III (13 urban centers), rank 16 to 19 for Tier IV (22 urban centers), and rank over 20 for Tier V (10 urban centers). More urban centers may need to be defined for Tier V. The results are illustrated in Figure 2.1 (also shown in Table 2.10).

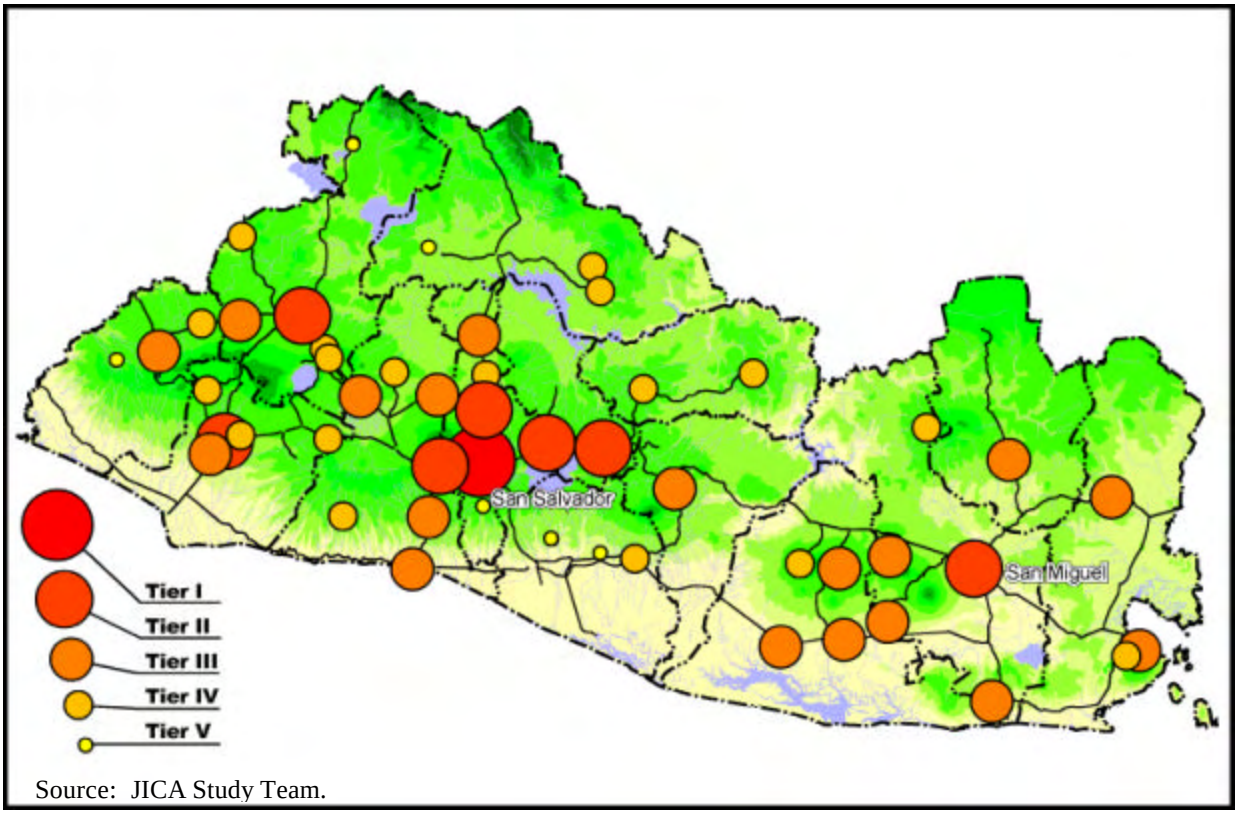
Table 2.10. Ranking of Major Urban Centers in El Salvador by Five Indices

(Ranking by each index in parentheses)

SSMR		Population	Population Density (/km^2)	Growth 92-00 (% p.a.)	Urbanization ratio (%)	INBI	Overall ranking	Tier
Nueva Sn. Salvador	La Libertad	187,600 (1)	1,013 (1)	4.2 (3)	87 (1)	15 (1)	7	II
Antiguo Cuscatlán	La libertad	75,000 (2)	1,452 (1)	12.6 (1)	96 (1)	8 (1)	6	II
Apopa	San Salvador	280,000 (1)	2,106 (1)	16.4 (1)	81 (1)	25 (1)	5	II
San Miguel	San Miguel	130,000 (1)	322 (3)	4.7 (3)	67 (2)	26 (2)	11	III
Chalatenango	Chalatenango	16,560 (4)	220 (3)	-0.7 (5)	53 (3)	28 (2)	17	IV
San Martín	San Salvador	61,914 (2)	1,012 (1)	8.8 (2)	55 (3)	28 (2)	10	II
Sonzacate	Sonsonate	15,120 (4)	1.611 (1)	6.0 (2)	90 (1)	28 (2)	10	II
Santiago de María	Usulután	20,200 (3)	459 (2)	62 (2)	69 (2)	28 (2)	11	III
Sta. Ana	Sta. Ana	149,379 (1)	527 (2)	2.1 (4)	66 (2)	23 (1)	10	II
Cojutepeque	Cuscatlán	45,150 (2)	1,451 (1)	2.0 (4)	84 (1)	22 (1)	9	II
Usulután	Usulután	52,800 (2)	460 (2)	3.0 (4)	64 (2)	30 (2)	12	III
Sonsonate	Sonsonate	38,303 (3)	334 (3)	3.0 (4)	60 (2)	30 (2)	14	III
Chinameca	San Miguel	14,500 (4)	269 (3)	8.6 (2)	33 (4)	36 (3)	16	IV
S. Fsco. Gotera	Morazán	18,280 (4)	333 (3)	4.5 (3)	64 (2)	36 (3)	15	III
Guazapa	San Salvador	13,500 (4)	295 (3)	47 (3)	46 (3)	36 (3)	16	IV
Atiquizaya	Ahuachapán	17,500 (4)	423 (2)	2.4 (4)	27 (4)	36 (3)	17	IV
Zacatecoluca	La Paz	37,800 (3)	180 (4)	2.1 (4)	54 (3)	36 (3)	17	IV
El Congo	Sta. Ana	12,000 (4)	197 (4)	47 (3)	30 (4)	34 (3)	18	IV
Armenia	Sonsonate	10,000 (5)	363 (3)	1.6 (5)	50 (3)	34 (3)	19	IV
Juayúa	Sonsonate	12,000 (4)	228 (3)	31 (4)	33 (4)	37 (3)	18	IV
Aguilares	San Salvador	25,600 (3)	606 (2)	5.0 (2)	83 (1)	34 (3)	11	III
Ciudad Arce	La Libertad	20,500 (3)	459 (2)	4.6 (3)	20 (4)	34 (3)	15	III
Ahuachapán	Ahuachapán	45,000 (2)	349 (3)	34 (4)	31 (4)	36 (3)	16	III
Sn. Antonio del Monte	Sonsonate	16,000 (4)	707(2)	67 (2)	41 (3)	35 (3)	14	III
Santiago Nonualco	La Paz	10,000 (5)	268 (3)	17 (5)	23 (4)	38 (3)	20	V
La Libertad	La Libertad	21,600 (3)	207 (3)	46 (3)	40 (3)	38 (3)	15	III
Sn. Juan Opico	La Libertad	10,000 (5)	236 (3)	3.9 (3)	11 (5)	38 (3)	19	IV
Chalchuapa	Sta. Ana	42,000 (2)	391 (3)	5.0 (2)	39 (4)	33 (2)	13	III
Zaragoza	La Libertad	15,600 (4)	636 (2)	64 (2)	64 (2)	32 (2)	12	III
Sta. Rosa de Lima	La Unión	14,796 (4)	192 (4)	2.7 (4)	42 (3)	39 (3)	18	IV
San Vicente	San Vicente	36,600 (3)	170 (4)	2.8 (4)	65 (2)	32 (2)	15	III
Quezaltepeque	La Libertad	34,600 (3)	372 (3)	2.7 (4)	49 (3)	32 (2)	15	III
Candelaria de la Frontera	Sta. Ana	10,927 (5)	241 (3)	45 (3)	23 (4)	40 (4)	19	IV
La Unión	La Unión	41,517 (2)	256 (3)	7.1 (2)	57 (3)	31 (2)	12	III
Metapán	Sta. Ana	22,750 (3)	75 (5)	3.4 (4)	30 (4)	40 (4)	20	V
Berlín	Usulután	15,345 (5)	122 (4)	1.1	50 (3)	45 (4)	21	V
Sn. Rafael Oriente	San Miguel	10,000 (5)	336 (3)	2.2 (4)	49 (3)	44 (4)	19	IV
Nva. Concepción	Chalatenango	10,100 (5)	106 (4)	0.7 (5)	29 (4)	47 (4)	22	V
Jiquilisco	Usulután	23,327 (3)	88 (5)	11.2 (1)	19 (5)	47 (4)	18	IV
Ilobasco	Cabañas	27,500 (3)	214 (3)	47 (3)	34 (4)	44 (4)	17	IV
Panchimalco	San Salvador	11,100 (5)	365 (3)	4.0 (3)	7 (5)	47 (4)	23	V
Sensuntepeque	Cabañas	29,800 (3)	128 (4)	4.2 (3)	41 (3)	43 (4)	17	IV
Izalco	Sonsonate	23,400 (3)	310 (3)	2.6 (4)	28 (4)	43 (4)	18	IV
Sn. Pedro Masahuat	La Paz	16,000 (4)	178 (4)	2.8 (4)	11 (5)	42 (4)	21	V
Coatepeque	Sta. Ana	15,300 (4)	301 (3)	37 (3)	12 (5)	42 (4)	19	IV
Concepción Quezaltepeque	Chalatenango	12,000 (4)	120 (4)	148 (1)	47 (3)	49 (5)	17	IV
Acajutla	Sonsonate	28,000 (3)	286 (3)	4.9 (3)	38 (4)	42 (4)	17	IV
Conchagua	La Unión	15,000 (4)	166 (4)	5.2 (2)	7 (5)	49 (5)	20	V
Chirilagua	San Miguel	15,000 (4)	105 (4)	7.8 (2)	23 (4)	50 (5)	19	IV
Chiltiupán	La Libertad	13,000 (4)	114 (4)	10.6 (1)	14 (5)	57 (5)	19	IV
Tacuba	Ahuachapán	14,000 (4)	138 (4)	8.1 (2)	17 (5)	53 (5)	20	V
Ciudad Barrios	San Miguel	12,296 (4)	364 (3)	2.8 (4)	27 (4)	53 (5)	20	V

Sources: PNODT, PROMUDE/GTZ and DGEC (*Encuesta de Hogares de Propósitas Multiples 2000*, Aug. 2001).

Figure 2.1. Existing Urban Centers Hierarchy in El Salvador



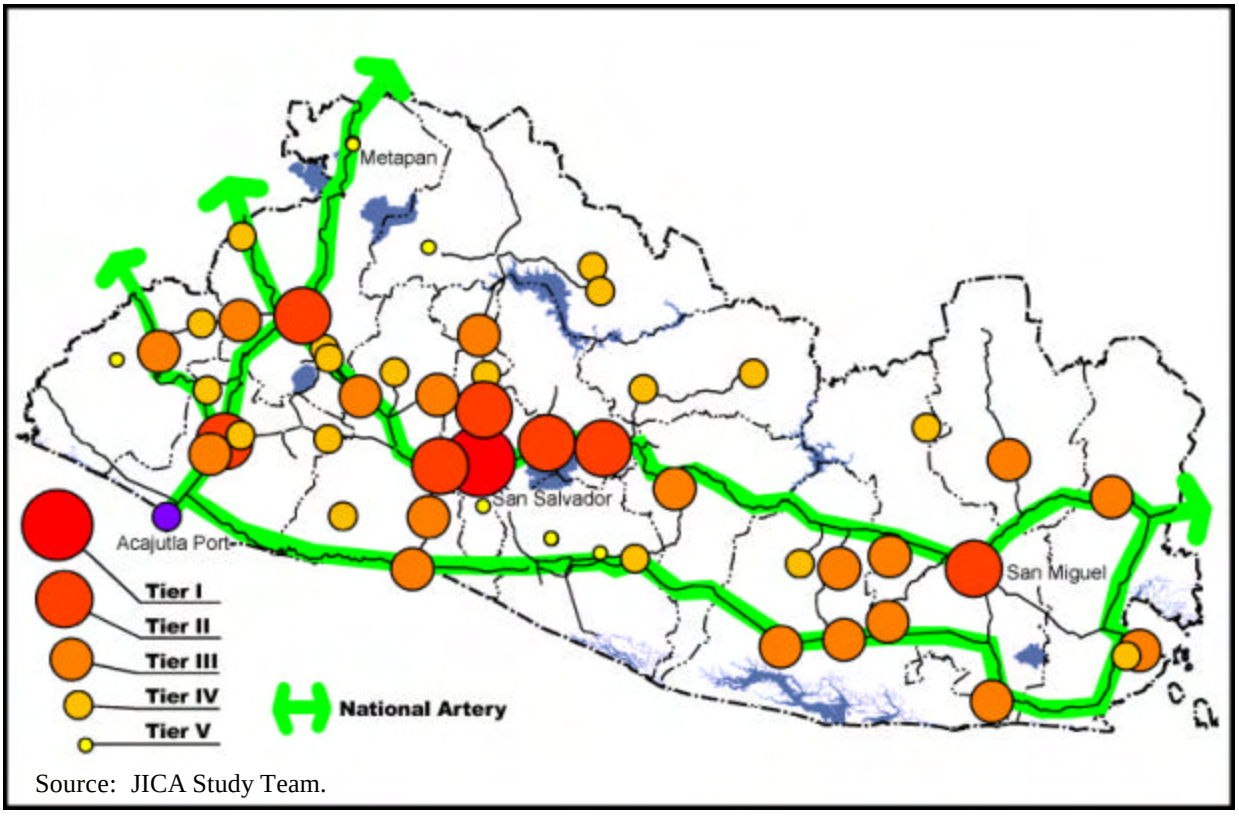
Source: JICA Study Team.

2.2.3 Artery network

The foregoing analysis has clarified that most urban centers at the upper tiers of the hierarchy are located along the two main highways: the Pan American highway and the Pacific coastal highway. These are strong east-west arteries serving more developed parts of the Country and linking El Salvador with neighboring countries within the logistic corridor of Central America defined by SIECA (Figure 2.2). This broad band area along the two highways contain a total urban population of 3.07 million, consisting of 1.35 million in the core of SSMR and 1.72 million in other urban centers. Only eight out of 61 urban centers analyzed above are outside this band area, containing the combined population of 149,000 or only less than 5.0% of the total urban population in the 61 centers.

The only north-south artery that emerges from the foregoing analysis is the one connecting Acajutla on the Pacific coast through Metapán and Anguiatu in the north on the border with Guatemala. This constitutes a part of an alternative route of the land bridge or dry canal linking El Salvador with ports on the Atlantics coast. Other north-south links are not conspicuous at present. The artery network of El Salvador does not cover the northern area along the border with Honduras.

Figure 2.2. Artery Network in El Salvador



Source: JICA Study Team.

2.2.4 Land use

(1) Land morphology

The national land of El Salvador, totaling 20,718km^2, may be broadly classified into four morphological types: (i) coastal plains, (ii) volcanic ranges, (iii) northern mountain ranges, and (iv) inter-mountain basins. Coastal plains extend along the southern coastline of 352km. The western plains are relatively narrow, and plains almost disappear along the Bálsamo coast, replaced in parts by rocky coast. Coastal plains widen along the central coast, especially in the downstream of the Lempa river and around the Jiquilisco bay. Further to the east, coastal plains develop between the coastline and the coastal mountain range, and extend to the coast of the Fonseca gulf. Volcanic ranges develop just inside the coastal plains, centering on several conspicuous peaks, the highest being Santa Ana volcano of 2,365m. The northern mountains ranges develop along the border with Honduras. The elevation is generally over 1,000m, except the central part constituting the middle reaches of the Lempa river at an elevation of about 500m. Inter-mountain basins extend widely between these volcanic and mountain ranges generally at elevations of 200-600m.

There are several large water bodies in the interior land. They consist of volcanic lakes, the largest being Ilopango to the east of San Salvador, reservoirs created by the Cerrón Grande and the September 15 dams, and lagoons. Of the total land area, 49.5% (10,255km^2) is drained by

the Lempa river and its tributaries. The Río Grande de San Miguel is the largest river within the national territory, which drains the area of 2,247km^2. The land along the eastern border is drained by the Goascoran river, constituting the border with Honduras, and its tributaries. Other land areas are drained by many small rivers.

(2) Change in land use

The latest data obtained on land use in El Salvador are for the year 1990, which are presented in Table 2.11 together with data for 1980. As seen in the table, 55% of the land is classified as agricultural land, of which 21% is used for annual crops and 9.4% for the perennial crops. Natural and improved pastures occupy 22% of the national land. Forests cover 184,200ha or only 8.8% of the land. In El Salvador, coffee is cultivated dominantly under forest trees. Of the total coffee cultivated area that covers 165,600ha, only 8% is under "intensive production system" without cover shade trees, leaving 152,300ha under forest trees. This almost corresponds to the remaining forest cover in El Salvador.

The forest area decreased by more than 30% during 1980-90 at the average rate of over 8,000ha per annum. The agricultural area, not only cropped area but also pastures, also decreased by 8%. Only the area of non-agricultural use increased during this period by 32%, presumably including abandoned land.

Table 2.11. Changes in Land Use in El Salvador, 1980-1990

	1980		1990	
	Area (10^3ha)	(%)	Area (10^3ha)	(%)
Agricultural land				
Annual crops	484.9	23.0	445.8	21.2
Bi-annual crops	40.9	1.9	51.9	2.5
Perennial crops	206.3	9.8	198.7	9.4
Natural pastures	389.9	18.5	343	16.3
Improved pastures	131.6	6.3	116.8	5.6
Forest land	267.6	12.7	184.2	8.8
Non-agricultural land	505.4	24.0	668.5	31.8
Water bodies, etc.	77.5	3.7	95.4	4.5
Total	2,104.1	100.0	2,104.1	100.0

Source: FUSADES, *Strategy for Agricultural Development*.

(3) Land capability and vulnerability

Land capacity

The classification of land by capability for agriculture is summarized in Table 2.12 by department. Land of Classes I, II and III is suitable for intensive cultivation, Class IV for semi-intensive farming, Class V for pastures, Class VI for permanent crops, Class VII for forestry and Class VIII to be protected.

Table 2.12. Distribution of Land Capability Classes by Department

Department	Total land area (ha)	% of Country	Distribution by Land Capability Classes (ha)				
			I	II	III	IV	I-IV
Usulutan	213,044	10.13	9,069	25,586	38,273	39,115	112,042
San Miguel	207,710	9.87	652	7,175	25,712	41,240	74,779
La Union	207,434	9.86	-	547	9,111	23,923	33,581
Morazan	144,743	6.88	-	779	4,629	19,189	24,597
Eastern Region*	772,931	36.73	9,721	34,086	77,725	123,467	244,999
Ahuachapan	123,960	5.89	252	6,586	22,472	24,092	
Santa Ana	202,317	9.62	736	5,934	22,345	23,671	
Sonsonate	122,577	5.83	147	8,248	23,839	28,342	
Chalatenango	201,658	9.58	-	1,515	14,076	12,267	
La Libertad	165,288	7.856	-	9,069	15,991	26,932	
San Salvador	88,615	4.21	105	5,660	7,890	10,689	
Cuscatlan	75,619	3.59	-	1,431	8,332	20,325	
La Paz	122,361	5.815	2,146	24,870	23,229	22,240	
Cabañas	110,351	5.24	-	421	2,904	20,725	
San Vicente	118,402	5.63	673	8,143	18,684	20,115	
El Salvador	2,104,079	100.00	13,782	105,961	237,487	332,865	690,196

Department	Distribution by Land Capability Classes (ha)				
	V	VI	VII	VIII	Others
Usulutan	4,482	29,710	49,088	14,160	3,562
San Miguel	4,271	28,826	65,290	28,905	5,639
La Union	15,444	15,781	109,370	30,860	2,399
Morazan	842	4,650	97,713	16,727	214
Eastern Region	25,039	78,966	321,461	90,652	11,814
Ahuachapan	568	9,195	53,149	7,247	400
Santa Ana	5,365	13,487	88,960	35,232	6,586
Sonsonate	1,599	15,191	32,108	12,050	1,052
Chalatenango	1,599	14,750	112,905	36,380	8,167
La Libertad	1,831	29,352	63,164	17,434	1,515
San Salvador	526	6,691	43,912	307	12,835
Cuscatlan	274	6,817	32,824	652	4,964
La Paz	3,156	15,423	23,271	1,683	6,342
Cabañas	800	2,819	49,509	32,571	602
San Vicente	4,839	8,311	37,389	19,258	989
El Salvador	45,595	201,003	858,654	253,467	55,265

* Eastern Region's shares of Land Class I-IV: I=70.5%; II=32.2%; III=37.1%; and IV=37.1%.

Sources: Total land area by department taken from DIGESTYC, 2000 and Ministry of Economy.
Area by Land Class calculated by JICA Study Team using data from *Plan Nacional de Ordenamiento y Desarrollo Territorial 2002*.

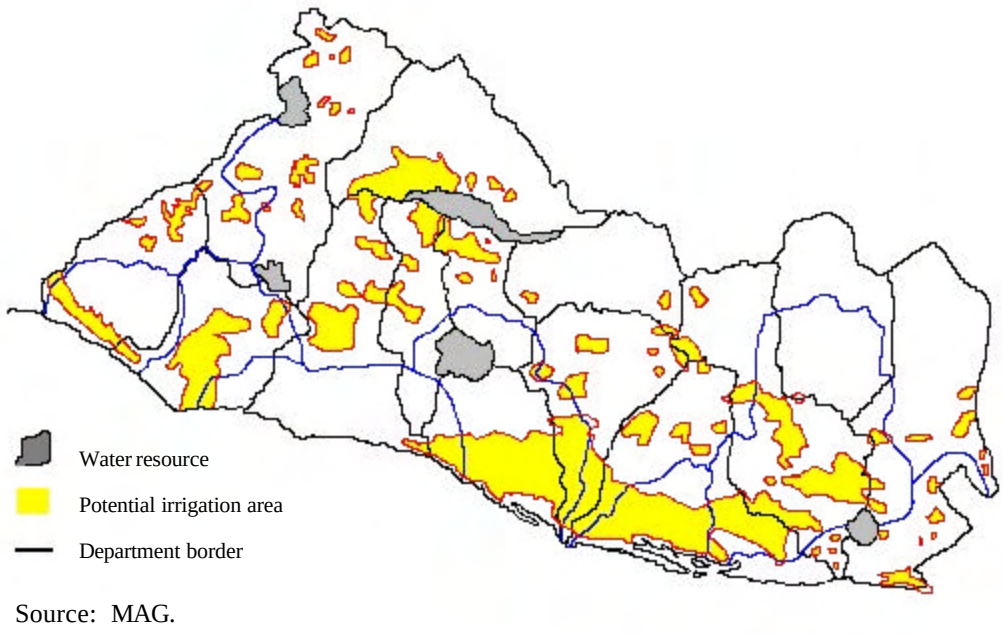
In the Country as a whole, a total of 690,196ha is classified into Classes I through IV generally suitable for agricultural purposes. This corresponds to 32.8% of the national territory, largely

coinciding with the area devoted to crop production, which occupies some 30% of the national land. The land of Classes V through VI, accounting for 52.5% of the national land, may be used for less intensive agriculture including pastures.

The Eastern Region has a total area of 244,999ha or 31.7% of the total land classified into Classes I through VI, accounting for 35.5% of the national land in these classes. In particular, the Eastern Region has 9,721ha of Class I, most suitable for intensive agriculture, mostly in Usulutan in the downstream of the Río Grande de San Miguel. This corresponds to 70.5% of the national land in this class. The land of Classes V through VI has a total area of 425,466ha or 55.0% of the total land in the Eastern Region.

The distribution of land suitable for irrigated agriculture in El Salvador is shown in Figure 2.3. The largest potential area extends along the south-central coast, including the downstream of the Lempa river and the area around the Jiquilisco bay. Also, large potential areas exist in the mid to downstream of the Río Grande de San Miguel in the Eastern Region.

Figure 2.3. Potential Irrigation Areas in El Salvador



Source: MAG.

Land vulnerability

El Salvador is vulnerable to natural calamities of various kinds, including earthquakes, volcanic eruptions, hurricanes, and El Niño phenomena, which affect land use and potentials. A study by the Ministry of Agriculture and Livestock clarified two aspects. One, the western part of the Country suffers from moderate droughts. Two, most areas in the Eastern Region are vulnerable to droughts. In particular, the departments of San Miguel and La Union and the southern part of Morazan are subject to severe droughts.

There are also areas in El Salvador that are habitually flooded. These areas are distributed mostly along the coast. A large flood–prone area exists along the middle and lower reaches of Río Grande de San Miguel. A small area in the midstream of the Lempa river is also flood–prone.

Chapter 3 OBJECTIVES AND STRATEGY FOR ECONOMIC DEVELOPMENT FOCUSING ON THE EASTERN REGION

3.1 Objectives and Strategy for National Development

(1) Main directions after the civil war

The structural adjustment policy and the economic stabilization program adopted in 1989 aimed to restore macroeconomic stability and establish market-oriented economy (Section 2.1). This basic policy was taken over by successive administrations, and various measures were taken for deregulation of the trade and the financial sectors, tax reform, privatization of state banks and public utilities, and dollarization.

While a sound and stable macroeconomic framework was largely established during the 1990s, the Salvadoran economy faced difficulty in establishing competitiveness in the rapidly globalizing economy. Though increasing overseas remittances helped maintain macroeconomic stability, reliance on them undermined the competitiveness of most domestic commodities, particularly consumer goods. Also, widening disparities between regions and widespread poverty became another focus of the national development as the society recovered from the civil war.

(2) CND initiative

CND was created in May 1997, tasked to fill in various gaps existing and seemingly developing at that time. These gaps, as mentioned already, are represented by the gap between the macroeconomic performance and the microeconomic difficulty, the gap in income levels among different segments of the society, and disparities between regions. Naturally from its beginning, CND has adopted a participatory mechanism in preparing a National Plan that should be broadly supported by all the segments of the society.

The vision for national development articulated by CND encompasses the value that the Nation should pursue in social, economic, institutional and political aspects: 1) social inclusion to overcome poverty, 2) self-reliance, 3) society of law, 4) competitive economy, 5) borderless society, 6) rational environmental idea, and 7) family value (CND, *Building a National Plan for El Salvador, May 1997-April 2002*, 2003). These are in line with the consistent development strategy of the Government with four pillars: (i) poverty reduction through investment in human capital, (ii) strengthening economic competitiveness under free trade and open economy policy, (iii) improving public services and judicial systems, and (iv) ensuring environmental sustainability.

Under the vision, CND identified priorities along the lines of principal preoccupations of people: unemployment, social exclusion and marginalization. Initial actions of the National Plan identified three structural development axes: regional development and decentralization,

restructuring of productive base, and Central American integration. Continued CND efforts with extensive consultation with various groups of people resulted in specific proposals for five geographic areas in the Country constituting "Territorial Actions". Unfortunately, the earthquakes in 2001 forced the reconsideration of priorities for national development. *A Strategy for Development*, published after the earthquakes, reconfirmed the territorial focus. A takeoff strategy was set out for the Eastern Region as it was planned to establish a new port in La Union, which would contribute to strengthening the competitiveness of the Salvadoran economy.

3.2 Position of the Eastern Region

3.2.1 Comparative analysis

The position of the Eastern Region in El Salvador is clarified in relation to other parts of the Country. For this comparative analysis, other regions are defined here in an expedient way broadly in line with the National Plan. That is, the definition of the regions in the National Plan is made to adapt to departmental boundaries in such a way that the entire territory of El Salvador is covered as shown in Table 3.1. This definition does not in any way mean to interfere or suggest an alternative to the ongoing efforts to redefine the administrative division of the Country. Basic data on the regions thus defined are summarized in Table 3.2, based on the data on the main departments constituting each region.

The position of the Eastern Region in relation to other regions by basic socio-economic indices is summarized below.

Eastern Region's position		Other regions
Land area	largest	2nd largest in the Western region
Population	3rd largest	largest in the SSMR, followed by the Western region
Population density	2nd lowest	lowest in the Lempa northern region
Population increase	2nd lowest	lowest in the Lempa northern region
Economic population	lowest ratio	followed by the South-central (Comalapa) and Lempa northern regions
Household income	2nd lowest	lowest in the Western region
Poverty incidence	highest	followed by the Lempa northern and Western regions
Dependence on remittances	highest	2nd highest in the Lempa northern region

Source: Table 3.2.

As seen from the table above, the Eastern Region, and the Lempa northern region are the two least developed regions in El Salvador. Both are livestock regions in the Country. The Eastern Region appears to be less developed in terms of economic indices, but poverty depth is not as significant as in the Lempa northern region and even two other regions (i.e., Western and South-central), presumably reflecting its inherently favorable natural conditions with extensive lowland of good soil conditions.

Table 3.1. Expedient Definition of Regions for Comparative Analysis

Region in the National Plan	Adopted region for diagnosis	Main departments	Related departments
Volcano region	Western region	Ahuachapán, Santa Ana, Sonsonate	
Bálsamo mountain region	Bálsamo (La Libertad) region	La Libertad	Sonsonate, San Salvador
Comalapa south-central region	South-central (Comalapa) region	La Paz, San Vicente	Cuscatlán, La Libertad, Usulutan
San Salvador metropolitan region	San Salvador metropolitan region	San Salvador	La Libertad
Lempa northern region	Lempa northern region	Chalatenango, Cuscatlán, Cabañas	Santa Ana
Fonseca gulf region	Eastern Region	Usulutan, San Miguel, Morazan, La Union	

Source: Defined by the JICA Study Team only for the comparative analysis; no implications to new administrative division intended.

Table 3.2. Basic Data on Six Adopted Regions of El Salvador, 2000

	Western	Bálsamo	South-central	SSMR	Lempa northern	Eastern	El Salvador
Land area (km^2)	4,489	1,653	2,408	886	3,876	7,394	20,718
Number of municipalities	41	22	35	19	58	87	262
Total population	1,320,616	680,247	452,998	1,984,690	552,374	1,281,428	6,272,353
Population density (/km^2)	294	411	188	2,240	143	173	298
Working age pop. (% over age 10)	74.5	724	74.3	77.9	73.9	76.1	76.2
Economic pop. (% of working age pop.)	51.7	53.1	50.9	55.4	51.1	47.7	52.2
Unemployment (%)	7.1	5.2	6.6	5.4	5.4	6.0	5.8
Population increase 92-00 (% p.a.)	2.55	3.57	1.92	3.46	1.40	1.59	2.57
Gross birth rate 1998 (/10^3)	27.0/32.0	27.6	29.6/31.2	23.5	29.6/32.5	27.4/32.3	
Gross death rate 1998 (/10^3)	5.9/6.3	5.9	6.5/7.3	5.5	6.3/7.3	6.1/7.1	
Infant death rate 1998 (/10^3)	27.9/39.0	31.6	32.5/40.9	26.2	36.0/40.9	29.7/42.8	
Life expectancy (yrs): Male	63.3/68.1	67.1	63.7/64.4	68.5	62.5/65.6	63.4/66.5	
Female	68.2/73.7	72.8	69.4/71.5	74.0	67.7/72.4	68.0/73.0	
Household income (¢/mo)	2,646	4,856	2,706	4,981	2,726	2,655	3,690
Absolute poverty (%)	22.4	10.6	19.5	7.6	24.0	18.2	16.0
Poverty incidence (%)	48.2	26.9	47.2	26.5	49.0	49.7	38.8
Remittance receiving families (%)	16.5	15.1	19.7	16.2	22.9	30.2	19.7
Average remittance received (¢/mo)	1,023	969	938	1,101	998	1,103	1,057
Maize cultivated area (ha)	54,743	19,050	28,788	14,730	33,653	111,327	262,292
Maize production (t)	135,718	52,127	73,191	40,264	83,104	198,564	582,967
Maize yield (t/ha)	2.48	2.74	2.54	2.73	2.47	1.78	2.22
Cattle population	156,450	70,500	126,500	13,350	211,500	471,700	1,050,000
Swine population (family owned)	28,791	18,934	27,747	210	33,252	77,513	186,447

Source: The same as Table 1.1.

The Eastern Region and the Western region are comparable in terms of population, household income and poverty incidence. However, the Eastern Region is clearly less developed with much smaller shares of manufacturing, commercial and services establishments and employment than the Western region, except for services employment as shown below. The larger share of services employment in the Eastern Region may be due to its comparatively

larger government services.

Shares of Establishments and Employment per Sector in the National Total, 1997

(Unit: %)

	Establishments			Employment		
	Manufacturing	Commercial	Services	Manufacturing	Commercial	Services
Eastern Region	15.7	17.7	16.6	4.8	15.2	13.2
Western region	19.5	24.7	18.3	7.3	17.2	11.6

Source: DGEC, *Anuario Estadístico 1999*.

Some characteristics of the Eastern Region may also be seen from its shares of the national total in various aspects summarized in Table 3.3. The Eastern Region depends comparatively more on overseas remittance since its shares in the number of households receiving remittances and the total amount of remittances in the Region are much larger. The total household income is only 14.5% of the total in the Country. The share of the Eastern Region in maize cultivated area is 42.4 %, much larger than would its share of land claim. The cattle population in the Region accounts for 44.9 % of the total in the Country. The Region's share in coffee area is significant, but the share in high elevation coffee area is much smaller, presumably due to the relatively late introduction of this crop to the Region.

Table 3.3. Shares of the Eastern Region in Selected Aspects, 2000

Aspect	Eastern Region	Eastern Region's share (%)
Land area	7,394km^2	35.7
Population	1,281,428	20.4
Household income	¢770 million/mo.	14.5
Households receiving remittance	87,491	30.8
Total remittance	¢96.5 million/mo.	32.2
Maize cultivated area	111,327ha	42.4
Maize production	198,564t	34.1
Cattle population	471,700	44.9
Coffee area	31,002ha	19.1
High elevation coffee area	2,402ha	9.6
Criminal activities registered (2000-May 2003)	174,920	18.3

Sources: The same as Table 1.1, except coffee data from PROCAFE and crime data by PNC.

3.2.2 Important characteristics

(1) Livestock region

The Eastern Region is a livestock region. It accounts for over 40% respectively of the cattle population and the area cultivated with maize, which is dominantly domestic maize cultivated as a feed crop. Main production areas are the southern area along lower reaches of Río Grande in San Miguel and part of Usulutan and the northern area centering on Morazan. In the southern area, the high input-high yield mode of cattle production is well established. Large cattle farmers cultivate forage in grazing land to make it effectively managed pasture, and

combine with supplemental feeding in sheds for high productivity. The breed is well improved. The use of feed concentrates and silage is common, and there is no shortage of feed or water. The farmers suffer, however, from competition with Honduran and Nicaraguan cheese. Inundation of pasture by flooding of Río Grande is another constraint.

Livestock farmers in the northern area face shortages of water and feed. Grazing in grassland rather than managed pasture is more common, and silage production has just started in some areas. They experience dry spells even during the rainy season. In addition to the competition with cheese from Honduras and Nicaragua, reliance on middlemen for marketing is another constraint.

(2) Largely neglected and low productivity crop production

The Eastern Region has most extensive lowland areas potentially suitable for crop production, e.g., 70.5% of the national land in Class I (Subsection 2.2.4). Most lands are suitable for production of upland crops and various fruits, including slopelands in the northern area. Highlands in the north with cool climate are suitable for vegetable production. These potentials, however, are not well developed and people in the Region consume increasing amount of agricultural products imported from Honduras and Nicaragua. Maize is produced dominantly as feed grains together with sorghum and in low yields. Sugarcane is practically the only commercial crop cultivated in sizable area. Fruit trees are largely neglected presumably due to the lack of market and shortages of manpower resulting from the outmigration. Some lowland areas are subject to habitual flooding, hindering any productive use of the land other than grazing.

For promoting fruit production, a key may be specialization in a few selected fruits based on land suitability and market opportunities. Fruit trees on the northern slopes would serve effectively for productive reforestation. To produce the selected fruits in marketable quantity and quality, farmer organizing would be a pre-requisite together with extension and training.

Promotion of vegetable production in the northern highlands is subject to the development of urban market within the region. With this respect, vegetable production in the northern part of La Union seems to be quite promising as the La Union city is expected to develop rapidly as the port is revitalized. Organic vegetable production may be pursued to appeal to health-conscious international communities there. Sugarcane is suited to climatic conditions in the region, and its expansion is conditional on land suitability and full utilization of processing opportunities including production of high quality feed, liquor and energy from molasses.

(3) Rich but underutilized water resources

Other than the Lempa northern region, the Eastern Region is the only region drained by a sizable river, Río Grande de San Miguel. Water resources in Río Grande, however, are not properly managed and used. Forest degradation aggravates habitual flooding in the lower basin,

and dry spells occur in the upper basin even during the rainy season. Irrigation is very limited throughout the basin. Hydropower development of a sizable scale is found to be infeasible due to the topography. Degrading quality of river water is another concern. Municipalities constituting the Río Grande basin are planning to take a step to dispose solid waste and to treat sewage properly through joint efforts.

A basin-wide approach is indispensable to deal with both the quality and the quantity problems in the Río Grande basin. On-going efforts by the municipal association are commendable. The Olomega lagoon should be taken as an integral part of the Río Grande river system.

Irrigation development in the basin is to be pursued in the form of supplemental irrigation to bridge dry spells during the rainy season and to extend cropping season by a few months at most rather than irrigating crops in the middle of the dry season. At present, some farmers in more favorable downstream areas produce second crops effectively by utilizing residual soil moisture at the beginning of the dry season. Supplemental irrigation, large and small, may use various water sources, including small reservoirs and ponds, springs and groundwater.

(4) Organizational strength

People in the Eastern Region appear to be more organized, presumably reflecting the solidarity during the civil war. This is an advantage to be utilized for the development. Ongoing initiatives of municipal associations and other organized movements will ensure the viability of the participatory development. The organizational strength is present also among entrepreneurs in San Miguel and Santa Rosa de Lima and livestock farmers in San Miguel. This will help ensure equal partnership with foreign investors for any joint venture arrangement.

Small supplemental irrigation schemes may be constructed, operated and maintained by organized farmers. Naturally, proper farmer organizing is a prerequisite to water allocation and on-farm water management. The viability of such arrangements is manifested for instance by the irrigators' association in Hacienda Nueva, Usulután. Organized farmers may undertake joint procurement of agricultural input and joint marketing of their products. This may prove to be an effective way to establish specialty products even for export.

The organizational strength may extend to overseas Salvadorans as well. At present, the Eastern Region depends most heavily on remittance from them. While the remittance tends to be used mostly for consumptive purposes, cases of overseas Salvadorans and returnees contributing to investments are not rare either. A few examples are a touristic/experimental farm in Monteca, a hotel in Meanguera, and road improvement in Olomega. New mechanism may be introduced to increase the portion of overseas remittance used for investments rather than consumption.

(5) Environmental concerns and tourism

The Eastern Region has most diversified environmental resources, ranging from volcanic mountains to coastal areas and islands, from part of the Central America biological corridor to coastal wetlands including the Jiquilisco bay area and the Jocotal lagoon, and from highland with cool climate to hot and humid lowland. Protection and enhancement of these resources and their effective use for production activities are essential for sustainable development of the Eastern Region. Concerns of local people and municipalities on these aspects are reflected, among others, in municipal associations for joint treatment of solid wastes and organized activities to promote tourism in different areas of the region.

For proper solid waste management, sanitary landfill is the state-of-art that should be applied in the Eastern Region as well, as a matter of principle. Separation of wastes of different kinds at source is also common in most developed and some developing countries, but proper levels of separation vary depending on local conditions. At least, separation of non-biodegradable wastes should be established as a norm, and hospital wastes should be separately treated in any case. Enhancement of people's awareness is an important component of any solid waste management program.

Tourism in the Eastern Region may be pursued with the concept of alternative tourism rather than mass tourism. Eco-tourism, agro-eco-tourism and rural tourism as conceived by various tourism promoters are in the right direction. A next step would be to develop tourism products, with brands if possible, in the form of tourism circuits, combining different tourism objects. These are mainly for domestic tourism. For international tourism, cruise industry may develop along the Pacific coast of Central America with the revitalized La Union port as a base, although stops within El Salvador may be limited such as the Jiquilisco bay in the Eastern Region.

(6) Key infrastructure to link with other regions

The Eastern Region has not benefited much from links with other regions, and the lack of key infrastructure is a factor for this poor communications. This situation was aggravated by physical and political separation during the civil war. The Western region has the port of Acajutla, and the Bálsamo (La Libertad) region benefits from its location along the main route linking the port and the SSMR. The three central regions, Bálsamo, South-central (Comalapa) and the SSMR, and Cuscatlán benefit from their proximity to the capital. One specific example is the prevalence of hybrid maize. The South-central region has the international airport.

The revitalization of the La Union port and the northern longitudinal road will change this situation in a drastic way. To make such changes to benefit the local people the most and realize the sustainable development of the Eastern Region as a whole, its spatial structure needs to be strengthened. This would include selective strengthening of urban functions as indicated,

full rehabilitation of the Pan American highway, and enhancement of land productivity through proper management of water and land resources and land use rationalization.

These physical changes need to be supported by institutional arrangements to allow effective planning, implementation and management of spatial development. The ongoing administrative reform with municipal associations as micro-regions should be pursued along this line, together with enhanced people's participation built into it. Especially for the La Union port and its hinterland a new institutional mechanism may be introduced to allow people's participation in development management.

3.3 Objectives and Strategy for the Eastern Region Development

3.3.1 Problem structure

The existing conditions in the Eastern Region have been analyzed by sector during the first fieldwork. The position and characteristics of the Eastern Region have been clarified as summarized in the previous section. Some positive characteristics of the Eastern Region are noted in relation to other regions. Still, the Eastern Region faces various problems, which combined would work as constraints to the regional development.

Many of these problems are interrelated to cause undesirable phenomena observed. A problem structure analysis is a method to clarify these interrelationships in a macroscopic way. The analysis, usually undertaken during the initial stage of the planning, would allow a broad perspective without getting into details to identify more essential factors and major problems to be alleviated through planned development efforts. The analysis is used here to define development objectives and basic strategy for the Eastern Region development.

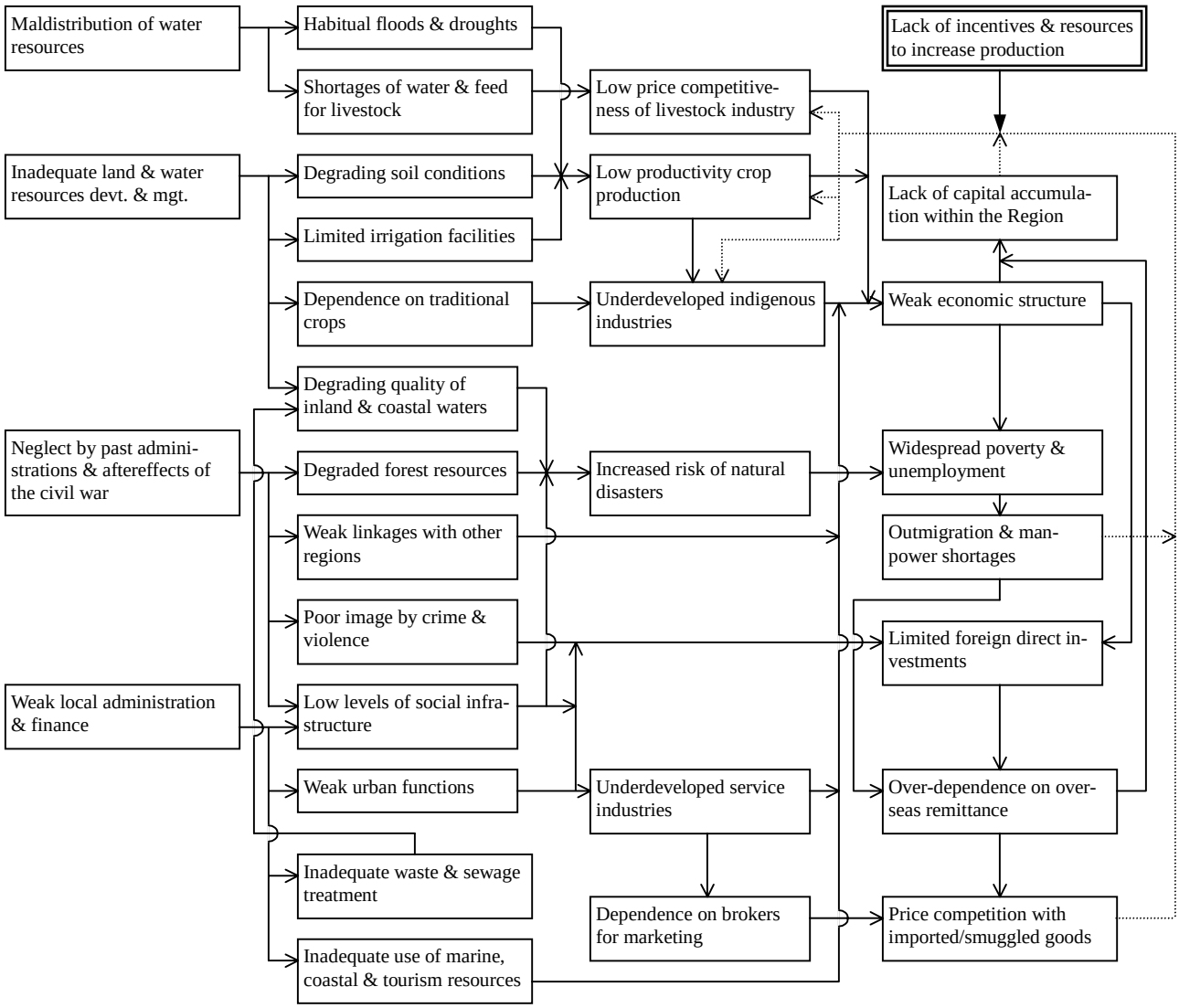
A problem structure analysis has been conducted for the Eastern Region, and the results are shown in Figure 3.1. In the figure, more important problem factors and phenomena are shown, expressed in generic terms to imply many specific problems in different sectors. The figure also shows only main interrelationships among them.

As shown in Figure 3.1, many problems are rooted in the comparative neglect by past administrations and aftereffects of the civil war. Maldistribution of water resources in both time and space is another inherent problem that the Eastern Region faces. The other two problems are more institutional than physical: inadequate land and water resources development and management, and weak local administration and finance.

(1) Major problem phenomena

In Figure 3.1, major problem phenomena of the economic, social and environment sectors in the Eastern Region are identified. The main problem of the economic sector is summarized as the weak economic structure causing widespread poverty and unemployment, and the resultant outmigration and manpower shortages, as well as the over dependence on overseas remittance

Figure 3.1. Problem Structure of the Eastern Region



Source: JICA Study Team.

and the lack of capital accumulation within the Region. The weak economic structure is reflection primarily of low crop productivity with limited production, low price competitiveness of the livestock industry, and underdeveloped indigenous industries and service industries. Weak linkages with other regions due to lack of major infrastructure and segregation during the civil war, and inadequate use of marine, coastal and tourism resources also contribute to this.

The main problem in the social sector is represented by widespread poverty and unemployment together with outmigration, which may undermine family value and ties. Increased risk of natural disasters of various kinds, caused among others by degraded forest resources, degrading quality of inland and coastal waters, and low levels of social infrastructure, is both cause and effect of widespread poverty. Poverty incidence increased after the 2001 earthquakes, for instance, but it is also true that poverty renders people more vulnerable to natural disasters.

The main problem in the environment sector is expressed as the degrading environmental quality represented by reduction in soil fertility, degraded forest resources, water quality problems, and inadequate wastes and sewage treatment. As seen in Figure 3.1, these problems are identified in relatively lower tiers of the problem structure compared to economic and social problem phenomena.

As shown in Figure 3.1, the weak economic structure causes both the widespread poverty and unemployment, resulting in outmigration and manpower shortages, and the lack of capital accumulation within the Region. These problems, in turn, become factors causing the low price competitiveness of the livestock industry, low productivity crop production and underdeveloped indigenous industries to create a "vicious cycle" linking back to the weak economic structure. This vicious cycle tends to be sustained without intervention since the local people are deprived of incentives and resources to increase production, as indicated in Figure 3.1.

(2) Fundamental problem factors

As seen in Figure 3.1, four fundamental problems are identified. Of these, maldistribution of water resources is an inherent problem, which may be overcome by solving other problems; inadequate land and water resources development and management are the real problem. The neglect by the past administrations and aftereffects of the civil war typically show in insufficient provision of basic infrastructure. This situation not only deprives the local people of adequate provision of basic social services but also has far reaching effects through undermining the locational conditions of the Eastern Region for industrial development and investment attraction. Improving these conditions is the main theme of the Eastern Region development. To realize this, another fundamental problem of weak local administration and finance needs to be addressed as well.

Therefore, three fundamental problem factors have been identified, which should be the main subjects for planned development efforts. These are (i) the inadequate land and water resources development and management, (ii) the insufficient provision of basic infrastructure and services, and (iii) the weak local administration and finance.

3.3.2 Opportunities to be seized

While the Eastern Region faces a complex multiplicity of problems as analyzed above, new opportunities are also emerging, which may affect the Eastern Region development. They are mainly due to the establishment of the La Union port, forthcoming conclusion of the CAFTA with the U.S., and the promotion of the PPP. Conditions to seize these opportunities guide the establishment of development objectives and basic strategy for the Eastern Region development. Specific opportunities to evolve are suggested in Section 7.3.

The establishment of the La Union port would expand opportunities for new import and export related economic activities as well as those directly related to the port operation. They include

various export-processing, indigenous resources-based activities oriented for export, processing and distribution of imported goods and materials, and related service activities such as logistic services.

The CAFTA with the U.S. would affect comparative advantages of various economic activities and products existing in El Salvador and the Eastern Region. It may also induce new economic activities including those to be transferred from other areas of Central America. While the CAFTA may increase export of some Salvadoran products to the U.S. (e.g., those for overseas Salvadorans), production of vegetables, fruits and dairy products may be negatively affected unless their productivity and quality are improved.

The PPP would improve trans-territorial infrastructures, such as highways, power and telecommunications, and also integrate various institutions among Central American countries. In either way, transaction costs between these countries would be reduced, facilitating the establishment of comparative advantages of these countries, respectively.

To take advantage of these opportunities for the Eastern Region development, the resources capacity in the Region needs to be greatly enhanced, encompassing human resources as well as land and water resources. The CAFTA would affect the competitiveness of agro-products most significantly. To ensure the competitiveness of agro-products produced in the Eastern Region after the CAFTA, the land and water resources capacity needs to be enhanced through proper management and human resources trained and equipped with new skills.

Also, the spatial structure should be strengthened to take full advantage of the La Union port by upgrading related transport infrastructures and other terminal facilities for active economic interactions within the Region and with other regions and neighboring countries. The PPP initiative should be effectively utilized to improve and upgrade key inter-territorial infrastructures.

3.3.3 Regional development objectives

The objectives for the Eastern Region development are defined addressing to the major problem phenomena identified above in the economic, social and environment sectors. The main economic problem has been identified as the weak economic structure due to low productivity crop production, livestock with low competitiveness, underdeveloped indigenous industries, inadequate use of marine, coastal and tourism resources, and weak linkages with other regions. The main social problem has been identified as the widespread poverty and unemployment together with outmigration. The main environmental problem has been identified as the degrading environmental quality, particularly of water and related land regime.

Three objectives corresponding to these economic, social and environment problems, respectively, are defined as follows.

(1) To strengthen the regional economic structure through enhancing agricultural productivity for price competitiveness, establishing competitive industries, and promoting service linkages with stronger urban functions;

(2) To alleviate poverty and reduce unemployment through human and institutional development that will allow utilization of emerging opportunities associated with the La Union port revitalization; and

(3) To restore and enhance the environmental quality and resource capacity to support indigenous industries, to reduce vulnerability to natural disasters, and to enhance amenity for local people and visitors.

3.3.4 Basic strategy for the Eastern Region development

The basic strategy for the regional development indicates general directions commonly pursued for development efforts in different sectors and areas. It may be established effectively by addressing to more fundamental problem factors that are at the root of many specific problems, while effectively utilizing the emerging opportunities presented by the La Union port, the CAFTA with the U.S. and the PPP. The three fundamental problem factors in the Eastern Region identified in Subsection 3.3.1 are: (i) inadequate land and water resources development and management, (ii) insufficient provision of basic infrastructure and services, and (iii) weak local administration and finance.

Corresponding to these fundamental problem factors, the basic strategy for the Eastern Region development may be established with the following components:

1) Land and water resources development and management particularly of the Río Grande de San Miguel and the upper catchment areas in the north,

2) Spatial structure strengthening with the establishment of key infrastructure facilities capitalizing on the La Union port, selective strengthening of urban functions, and rationalization of land use, and

3) Human and institutional development based on local government strengthening and people organizing and participation.

Chapter 4 COMPETITIVE ENVIRONMENT OF EL SALVADOR AND INVESTMENT AND EXPORT PROMOTION STRATEGY

4.1 Competitive Environment of El Salvador

The macroeconomic structure of El Salvador was examined in Section 2.1 in comparison to Central American countries and a few other countries. In this section, competitive environment of El Salvador is examined from various other points of view in comparison to other countries, including availability and costs of some utilities, quality and costs of human resources, and available incentives in free zones. Implications of overseas remittance and ongoing CAFTA with the U.S. are also mentioned.

4.1.1 Comparison by investment-related indices

El Salvador is compared with Central American countries and Mexico in Table 4.1 by selected indices that may affect competitiveness in attracting foreign investments. Telephone penetration in El Salvador is much higher than in neighboring countries of Guatemala, Honduras and Nicaragua, and only slightly lower than in Mexico. Mobile phone density in El Salvador is more than twice as high as in Costa Rica, compensating much lower fixed line penetration. Internet service fees are also relatively low in El Salvador. Local call rate is lower in El Salvador than in most other countries in the region except in Costa Rica. Electricity tariff in El Salvador is the lowest of all the countries compared for most user categories except residential users, for which Guatemala and Costa Rica apply lower rates.

Table 4.1. Comparison of El Salvador with Selected Countries by Investments-related Indices

		El Salvador	Guatemala	Honduras	Nicaragua	Costa Rica	Panama	Mexico
(1) Electricity tariff (large industrial use)	US¢/kWh (2002)	7.92	12.21	9.20	10.40	8.66	9.55	n.a.
(2) Main telephone lines	per 1,000 (2000)	100	57	46	31	249	n.a.	125
(3) Mobile phones	per 1,000 (2000)	118	61	24	18	52	n.a.	142
(4) Local call rate	US¢ (2002)	2.0	4.5	2.6	2.5	1.0	3.4	n.a.
(5) Literacy rate	% (2000)	88	89	89	91	98	n.a.	97
(6) Secondary school enrollment rate	% (1999)	37.7 (2000)	25.0	33.0	49.0	48.5	62.5	64.0
(7) Minimum wage	US¢/mo (1998)	144.5	91.1	57.3	n.a.	196.5	212.1	82.0
	(2003)	144.0	112.8	148.8	84.0	n.a.	n.a.	146.4

Sources: (1) *El Diario de Hoy*, November 15, 2002.
(2), (3), (4), (6) World Bank, *World Development Indicators*, 2002.
(5) FUSADES, *Crecimiento con Participación*, 2000.
(7) PROESA.

By human resources related indices, El Salvador is less favorable with the lowest literacy rate and the secondary education participation rate lower than Nicaragua as well as Costa Rica, Panama and Mexico. Higher education in El Salvador is comparatively more focused on engineering and technology, but expenditure on tertiary education as percentage of GDP is low even by the Central American standard. The minimum wage in El Salvador used to be comparatively high for the level of its economic development, higher than in Mexico in 1998. As a result of effectively maintaining the minimum wage, El Salvador is now more competitive in this aspect than most countries compared, except Guatemala and Nicaragua.

The typical costs of production input are compared in Table 4.2 between San Salvador and a few cities in other more developed countries in the region. For only a few input items, costs are lower in San Salvador than in other cities such as worker's wage, industrial estate for rental, and regular gasoline. Basic rate of corporate income tax is also the lowest in El Salvador, although the value-added tax is the highest. As a whole, input costs in San Salvador are comparable to those in other cities, while no conditions are superior.

4.1.2 Existing promotion measures

The Ministry of Economy formulated the national strategy for promoting and attracting investments, and under the strategy PROESA was created in 2000 as an investment promotion agency, and ONI as a one-stop center for investment registration. Among the investment promotion measures are simple tax structure in general and generous incentives offered to establishments in free trade zones.

(1) Incentives for free zones

Incentives for free zones in El Salvador include the exemption of income tax, value-added tax (IVA), and municipal taxes for 10 years as well as duty free import of machinery and equipment, intermediate goods and raw materials. There is an option to sell products up to a 15% of the production to the local market and Central America, except textile and apparel. There are additional incentives such as the accelerated depreciation of capital goods and elimination of capital grains tax. The free zones regime in El Salvador allows service companies to locate inside free zones. Therefore such industries as call centers, BPO and logistic-related industries can also enjoy these incentives.

Incentives applicable to establishments in free trade zones are compared in Table 4.3 between El Salvador and neighboring countries. Basically, little significant difference exists between incentive systems in these countries. Exemption of various national taxes is more or less common in all the countries. Exemption of municipal tax is not allowed in Guatemala and Panama. Sales to local markets are allowed in all the countries but to different degrees.

Region-specific incentives are not available in any country except in Costa Rica having two differentiations according to the location of free zones. El Salvador allows commercial

Table 4.2. Cost Comparison for Production Input

	Tijuana, Mexico US$1=P9.125		San Jose, Costa Rica US$1=¢342.49		Panama US$1=1 balboa		San Salvador	
	US$	Remark	US$	Remark	US$	Remark	US$	Remark
Wage:								
Worker	634-1,020	Ave.	350.38		350		200-232	El Pedregal FZ
Engineer	1,219-2,037	Incl. benefits	1,094.92		1,000		1000-1500	El Pedregal FZ
Manger	2,204-5,192		1,313.91		500		1000-2515	El Pedregal FZ
Land:								
Industrial estates (purchase)	34	Nordika I.E.	75		15-350		50	El Pedregal FZ
Industrial estates (rental)	50.5	Nordika I.E.	4.1		3.5++		1.25	
Office (rental)	15	Torres Gemelas	18.56		10++		20	WTC
Telecommunications:								
Phone line installment fee	405.48		78.54		40		335.75	TELECOM
Phone monthly basic charge	24		4.67		2.5-29	0.04/min	13.71	TELECOM
Internet dialup fee	23.8	Monthly	25		20	Monthly	67.8	TELECOM
Internet broadband	493	Monthly	500		44.95-49.95	Monthly	360	TELECOM
Electricity:								
Industrial use (per kWh)	0.05		0.08		0.11		0.07	SIGET
General use (per kWh)	0.15		0.04		0.12		0.07	SIGET
Water:								
Industrial use (per m^3)	2.4		1.13		1.15	Industry	0.39	ANDA
General use (per m^3)	0.43		0.21		0.8		0.23	ANDA
Gas:								
Industrial use	0.08/ℓ		0.19/ℓ		130	500lb	0.25/ℓ	Propane
General use	0.32/ℓ		0.20/ℓ		26	100lb		
Gasoline: Regular (1 liter)	0.62		0.45		0.43	US$1.61/gal.	0.41	
Shipping: Container (40ft)	1,650	LB*-Yokohama	2,680	Limón-LB*	5,737	Panama-LB*	3,750	El Salvador-LB*
Tax:								
Corporate income tax (basic rate)	35%		30%		34%		25%	
IVA	10%		13%		5%		13%	

*LB=Long Beach/Los Angeles, CA, US.

Source: JETRO, *Tsusho Koho* (*JETRO Daily*), Apr. 19, 2002.

Table 4.3. Comparison of Applicable Incentives in Free Trade Zones

Incentive	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama
Exemption from income tax	Yes 10 years[1]	Yes 15 years	Yes 15 years	Yes[2]	Yes	Yes 50%
Exemption from patrimony/assets taxes	Yes 10 years	Yes	*	*	*	Yes
Exemption from municipal taxes	Yes 10 years	Yes 10 years	*	Yes 10 years	Yes	*
Exemption from import taxes on machineries and/or raw materials	Yes	Yes	Yes	Yes	Yes	Yes
Exemption from sales tax for certain operations	Yes	No	No	Yes	Yes	Yes
Exemption from real estate transfer tax/tax on real state	Yes 10 years	Yes	Yes 5 Years	*	Yes	Yes
Exemption of value-added tax (IVA)	*	Yes	Yes[5]	*	*	*
Sales to local market	Up to 40%	Yes	Up to 20%	Yes	Yes	Yes (restricted to Free Zone of Colón)
Others	- Two classes according to the location of the free zone - Bonus to free zones located in less developed zones[3] - Assistance from Ministry of Labor[4]	- Allows commercial operations, e.g., distribution center in free zone - The same incentives for call centers		- Free zone country - Allows 100% foreign property - Best ports in Central America		

[1] Percentage of exemption according to location: Enterprises located in zones of relatively smaller development granted 100% exemption for 12 years and 50% in the following 6 years; Export commercial companies and non-producing companies located in a zone of relatively greater development granted 100% exemption for 4 years and 50% in the following 2 years; while the ones located in zones of relative smaller development, exoneration of the 100% for 6 years and 50% in the 4 following years

[2] Exemption for 20 years for operating companies and indefinitely for other companies

[3] Companies have the right to receive a bonus equal to 15% of the total sum paid for wages in the previous year according to the certification of a list reported to the Costa Rican Bank of the Social Insurance.

[4] Ministry of Labor offers training for personnel and advice and assistance for companies, etc.

[5] Exemption on goods transferred between FTZs within Guatemala

* Basically "No" with some exceptions

operations in the free zone such as distribution centers. Also call centers can obtain the same incentives in El Salvador.

(2) Promotion activities

PROESA

To attract foreign direct investments, PROESA first sends promotion materials to prospective investors by direct mail, telephone or e-mail. PROESA then arranges visits to countries with investors expressing interest to invest in El Salvador and propose possible destinations.

PROESA follows up the procedure for investors to make their investment decisions. The performance of PROESA investment promotion is summarized in Table 4.4.

Table 4.4. Results of PROESA Investment Promotion, July 2000-July 2003

Sector	No. of firms	Direct employment
Textile and apparel	64	23,523
Electronics	1	300
Manufacturing	5	175
Agro-industry	5	1,514
Distribution centers and others	20	2,342
Total	95	27,854

Source: PROESA.

PROESA launched in July 2002 a campaign called "El Salvador Works" to promote El Salvador abroad and attract foreign investments, appealing the Country's reputation of having a loyal and hard working labor force. It also stresses that the Country is one of the most competitive, market-driven economies in the world, as the Heritage Foundation and the Wall Street Journal have placed the Salvadoran economy as one of the two most open economies in Latin America.

ONI

ONI facilitates authorization for investors to establish operation, advises them on legal requirements, and provides simplified procedures. The only procedure for an investor to record foreign investments is to request registration with photocopies of legal instruments of his/her company, a form indicating the amount of foreign currencies entered into the Country or bank evidence of fund transfer, and a copy of initial general balance sheets in case the investment has been made in foreign currencies. The investor may request ONI to issue his/her Tributary Identification Number (NIT), IVA card, Employer Identification Number (NIP), business license, company registration, registration of general balance sheets, and residence status (temporary or permanent)/foreign resident identification cards.

4.1.3 Family remittance

Not only El Salvador but also several other countries in Latin America and the Caribbean receive sizable family remittance as shown in Table 4.5. El Salvador ranks third in total amount of remittance, following Mexico and Brazil. Dependence on remittance, however, is higher in El Salvador as it accounts for 17% of GDP and 60% of total export value. These ratios are third highest of all the countries compared, next only to Haiti and Nicaragua, respectively.

Monthly average remittance made by emigrants was US$243 for El Salvador, the fifth smallest of 16 countries compared. This is much smaller than US$382 for Mexico and US$367 for Costa Rica (not shown due to incomplete data). That is, El Salvador receives remittance from

many overseas family members, each having relatively small financial capacity. Nevertheless, the variance in per capita remittance by emigrants is much smaller than the variance in per capita income of residents, implying stronger motivation of overseas Salvadorans to make remittance than those originated from Costa Rica and Mexico.

Formal banking institutions charge for remittance made through them, but the total charge has been decreasing. More people using bank transfer do not deposit, and use a debit card for family consumption. A recipient does not need a bank account to receive money transfer either. In case of Western Union, one of major money transmitters, a recipient only needs to show his/her ID and report a reference number. The average charge for remittance is relatively low in El Salvador due to dollarization and well-organized financial institutes.

Table 4.5. Remittances to Latin America and the Caribbean, 2001

Country	Remittance (US10^6)	% of GDP	% of exports	Ave. monthly remittance/emigrant (US$)
Mexico	9,273	1.7	6.5	382
Brazil	2,600	0.4	4.0	342
El Salvador	1,920	17	60	243
Dominican Republic	1,807	10	27	205
Colombia	1,600	2.1	2.4	259
Ecuador	1,400	9	20	281
Jamaica	967	15	30	n.a.
Cuba	930	5	40	n.a.
Peru	905	1.7	10.6	194
Haiti	810	24.5	15	n.a.
Nicaragua	610	22	80	147
Guatemala	584	3.1	16	267
Honduras	460	7.5	17	267
Bolivia	103	1.25	6.71	284
14 countries	23,969			

Source: Federal Reserve Bank of Chicago, *Remittances, Costs and Market Competition*.

4.1.4 CAFTA

(1) Recent progress

On January 8, 2003, the Trade Representative of the U.S. and ministers from Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua announced the launch of negotiations on an agreement to eliminate tariffs and other barriers to trade in goods, agriculture, services, and investment between the U.S. and Central America under CAFTA. Working-level negotiations on CAFTA began in San José, Costa Rica, on January 27, regarding issues such as market access, investment, service, government procurement, intellectual property right, right of labor, environment and dispute resolution. Participants sought to complete all the nine negotiation rounds by December 2003. Ministers also agreed upon a special framework to immediately address sanitary and phytosanitary issues related to agricultural trade. This special effort

focused on resolving such problems as import bans on U.S. pork, poultry, and dairy products. Five negotiating groups covered topics such as market access; investment and services; government procurement and intellectual property; labor and environment; and institutional issues such as dispute settlement. A sixth group on trade capacity building met in parallel with the five negotiating groups.

CAFTA with the U.S. finally concluded on December 17, 2003 to provide Central American countries and the U.S. better access to affordable goods and to promote exports and employment. Costa Rica, however, is still pending its decision and expected to sign in April 2004. This agreement will further the regional integration of Central America and contribute to the work on the Free Trade Area of the Americas.

(2) Outline of CAFTA

The Central American countries have already been enjoying duty free access to the U.S. market through the CBTPA although quotas and non-tariff barriers protected some U.S. industries. On the other hand, these countries had high tariff and non-tariff barriers for U.S. exports. CAFTA will open these markets either immediately or under the agreed tariff reduction schedule. The overall tariff reducing schedule and the rule of origin are reviewed below.

Tariff reduction schedule

More than 80% of U.S. exports of consumer and industrial goods become duty free immediately and the tariff of remaining goods will be reduced under the schedule prescribed in CAFTA (U.S. Trade Representative, "U.S. and Central American Countries Conclude Historic Free Trade Agreement", December 17, 2003). The goods of a given country are categorized into different groups according to sensitivity and competitiveness to open markets, and each group has different tariff reduction schedule. The tariff reduction schedule for El Salvador and the U.S. is summarized in Table 4.6.

Table 4.6. CAFTA Tariff Reduction Schedule

Period of duties reduction	Agricultural Sector		Industrial Sector	
	% of exports from U.S.	% of imports to U.S.	% of exports from U.S.	% of imports to U.S.
Immediate access	53.0	89.0	78.0	99.7
5 years	13.1	0.3	6.9	0.0
10 years	15.6	0.2	15.1	0.3
12 years	1.9	0.0	0.0	0.0
15 years	11.6	6.1	0.0	0.0
15 years with quota	1.3	0.0	0.0	0.0
18 years with quota	0.9	0.0	0.0	0.0
20 years with quota	2.6	4.3	0.0	0.0
TRQ/MFN with quota	0.1	0.0	0.0	0.0

Note: TRQ=Tariff rate quota, MFN=Most Favorite Nation
Source: MOE, explanatory document, January 2004.

Mainly agro-products are granted longer tariff reduction periods (over 10 years). Also, if domestic agro-industries in any participating country suffer significant damage from rapid increase in imports from other participating countries, the country is entitled to impose safeguard measures on the imports during the tariff reduction period. El Salvador can impose the safeguard measures on poultry, cheese, butter, milk powder, ice cream, liquid dairy and other dairy products, pork, rough rice, milled rice, beans, sorghum, vegetable oil, canned meat, and high fructose corn syrup.

Rule of origin

Goods obtained or produced entirely in the CAFTA participating countries apply to tariff free trade. Non-originating materials used in the production of goods with applicable changes in the tariff classification defined in the CAFTA or goods that satisfy any applicable regional value content or other requirements may also be considered as CAFTA originating goods.

Certain percentage of regional content value is required for some goods to be treated as CAFTA originating goods. This rule applies mainly to goods assembled from many parts. Simple methods have been adopted to calculate the regional content value. The good that does not undergo a change in tariff classification may still be considered as CAFTA originating, provided that the value of raw materials and parts originated in an area outside the CAFTA countries accounts for less than 10% of the adjusted value of the good (cf. the "de minimis" rule).

(3) Expected macro impact

CAFTA is expected to contribute to free trade, investment promotion and economic reform in Central America. The case of Mexico under NAFTA as a precursor may be indicative of macro impact of CAFTA on Central America. Foreign direct investment (FDI) in Mexico increased from the annual average of US$3.6 billion during 1986-93 to US$8.9 billion during 1994-2000. The average export value increased from US$93 billion in the former to US$192 billion in the latter period. Based on this NAFTA impact on Mexico, trade and investments in Central America are projected to increase at 7.8% and 4.1% per annum, respectively. Consequently, the per capita GDP of the region is expected to increase at 3.6% per annum.

Another subtle effect of CAFTA on Central America may be improvement of images of Central American countries from civil war torn, natural disaster stricken countries to open and viable economies. Through CAFTA discussions on intellectual property right, labor issues and environmental concerns, sense of more equal partnership may develop between Central America and the U.S.

From NAFTA experiences, the following advantages are expected of CAFTA:

1) increase of export competitiveness by reduced tariffs,
2) decrease in import costs,

3) expansion of markets,
4) creation and maintenance of stable business environment,
5) ease of setting up a business base for production and sales, and
6) increase in transactions due to increased trips by businessmen and larger cargo movement.

At the same time, the following possible disadvantages are noted:

1) more severe competition for domestic products with import goods,
2) loss of vested interests due to changes in rules,
3) deterioration of business environment for those benefiting from protected markets,
4) increasing competition with foreign companies in each country, and
5) enforcement of labor-related and environmental regulations.

(4) Impact on trade

The FTA with Mexico and the Dominican Republic has led to significant increase in trade with these countries. Export to Mexico increased from US$15 million in 2000 to US$26 million in 2001 and US$32 million in 2002, and likewise export to the Dominican Republic from US$12.3 million in 2001 to US$22.6 million in 2002. Major export products include cashew nuts, shark fins, cookies, fruits, and apparel for Mexico and plastic products, medicines, tableware, fruit nectar, and cookies for the Dominican Republic.

Potential export products

CAFTA will increase export of some Salvadorans products to the U.S., especially those for overseas Salvadorans. They include ethnic products such as cornmeal, red beans, loroco, semita, hard cheese, and horchata. Prices of these ethnic products sold in the U.S. are quite high as compared with domestic prices in El Salvador. The Ministry of Economy has estimated that potential export value of five ethnic products (except cornmeal) amounts to US$224.5 million (Table 4.7).

Table 4.7. Exportable Products Actually Consumed in the U.S.

Product (unit)	Volume (10^6)	Export price (US$)	Total (US$$10^6$)
Red beans (lb)	68.6	0.35	24.0
Loroco (lb)	13.8	1.00	13.8
Semita (pkg.)	30.2	2.50	75.5
Hard cheese (lb)	44.5	2.25	100.1
Horchata (lb)	27.6	0.40	11.0
Total			224.5

Source: MOE.

MAG has identified potential products for, and problems associated with their export. MAG is promoting the production of selected fruits and vegetables, and also supporting the fishery and

livestock sectors to meet requirements of the market.

(5) Impact on industrial goods

Practically all the industrial products exported to the U.S. will enjoy no tariff immediately with only 0.27% of products having no trade records in the past three years subject to tax reduction up to 10 years. This is expansion of the benefits by the CBI, which allows only duty preferences. The products that will be granted these benefits include: tuna canned in oil, jewel cases, textile and apparel products, shoes, jewelry, fishing hooks, shovels, hoes, packaging materials, iron and steel products, etc.

On the other hand, 78% of industrial goods imported from the U.S. to El Salvador will have an immediate tax cut. This represents 77% of the industrial goods trade, of which 90% already enjoys free trade with the Most Favored Nation import duty. The remaining products will undergo the tax relief over 5-10 years, according to the sensitivity of the products to free trade. To protect some of them during such periods, non-linier tax cut will apply to reduce the impact during the initial years.

(6) Impact on agricultural goods

Of agricultural products, 89% will enjoy duty free access to the U.S. market, which represents 95% of the Salvadoran trade towards the U.S. The products subject to this category are: natural honey, fruit juice (e.g., peach, apple and pear), sodas, beer, ethnic beverages (e.g., horchata, cebada and fresco de chan) and ethnic products (e.g., sesame, hard and soft cheeses, semitas, quesadillas, tamales, and pupusas), and spices. In addition, fruits and vegetables (e.g., papayas, jacamas and loroco), flowers, and ornamental plants, which benefited from the CBI, may have permanent duty free access to the U.S. market.

The sugar quota for the U.S. market has been increased by 24,000MT immediately, and will increase every year up to 63,040MT in 2019. It should be noted that sweets and other products containing over 65% of sugar (in weight), packaged for retail sales, are subject to neither the quota nor import duties.

The U.S. government agreed to set up a representative office of the Animal and Plant Health Inspection Service (APHIS) in El Salvador, responsible for directly inspecting the sanitary conditions of both plants and animals to be exported to the U.S. A main characteristic of the CAFTA with the U.S., as compared to WTO mandates, is that sensitive agricultural products are put through transition periods and its special agricultural safeguards. According to the explanatory document issued by MOE in January 2004, those sensitive products that are protected include the following.

- Poultry: Tax cut for 18 years with a 10-year grace period without tax cut. An agricultural safeguard can be implemented during the tax cut period. For the inner parts of chicken, which are more sensitive to external conditions, tax relief at the rate of 164.4% begins as

duty compliance to WTO consolidates.

- Dairy products: Tax break for 20 years with a 10-year grace period. The application of a special agricultural safeguard will be guaranteed while the tax relief is in effect.
- Rice: A non-linear tax break for 18 years with a 10-year grace period.
- White maize: Tax free access has been agreed only for a yearly increasing quota.
- Yellow maize: A non-linear tax break for 15 years has been agreed.
- Pork: A non-linear 15-year tax break has been agreed. The application of a special agricultural safeguard has been ensured for the tax relief period.

For coffee, a rigid origin rule has been agreed upon, which demands the use of coffee produced in the participating countries for the benefits of the treaty. Only coffee cultivated in Central America or the U.S. will be entitled to free trade. Likewise processed coffee products must be made of such coffee to enjoy the benefits of the treaty.

(7) Impact on textiles and apparel

CAFTA has given greater flexibility to the textile and apparel industry by improving the preference level of the CBI. MOE expects more investment, technological enhancement and increase in export, thereby generating more employment opportunities. MOE summarizes the positive effects of CAFTA on the sector as follows.

- CAFTA will improve the preferences of the CBI as any garment processed in the Central American countries using regional fabrics and threads will immediately enter the U.S. free of duties.
- CAFTA's specific rule of origin allows, in most cases, importing fibers (raw material) to produce threads, fabrics and garments. This will expand the textile industry's business opportunities.
- CAFTA permits exporting cut and processed products made of fabrics from the U.S. and threads from anywhere in the world. The duty to be charged will only be based on the added value in El Salvador.
- CAFTA permits procuring materials including flat knit fabrics from Mexico and Canada. By CAFTA, products made of such materials are considered to be goods originated in the CAFTA countries. The initial limit on materials to be imported is 100 million m^2 of fabric. This limit may increase by 100 million m^2 in 2004 through the bonus for increasing acquisitions of threads and fabrics from the U.S. In the future, the amount of materials that can be imported may increase by 200 million m^2 every year without limit.
- CAFTA's broad list of low supply for fabrics and threads not produced in sufficient amounts both in the U.S. and Central America offers the opportunity to procure such products considered to be of low supply from anywhere in the world, process and export to the U.S.

without paying duties on final garments.

(8) Impact on the services sector

The impact of CAFTA on the services sector would be large as most small and medium enterprises (SMEs) operate service-oriented business. In order for them to benefit from CAFTA, entrepreneurs would need to link with export, packaging and transport services. For distribution industries, El Salvador has already been open to foreign investors. FTAs with other countries not as open as El Salvador would attract such industries to locate in El Salvador.

4.1.5 Security conditions in El Salvador and the Eastern Region

As part of the Study, a survey on public safety in El Salvador focusing on the Eastern Region has been conducted, combining a review of the existing data and study reports, a questionnaire survey with over 800 samples, and three focus groups' discussion. The main results are summarized.

According to the data of the National Civil Police (PNC), the number of criminal activities in El Salvador has been declining for the past few years: from 61,546 in 2000, 53,110 in 2001 and 44,595 in 2002, to 15,669 in January-May 2003 (Table 4.8). The Eastern Region is not the area with the highest crime rate in the Country. The total number of criminal activities reported in the Region in 2000-02 accounts for 18.3% of the national total, smaller than its population share. The crime rate is the highest in San Salvador with a 36.8% share, followed by La Libertad with 10.5%, and Santa Ana with 7.7%. The shares of the Eastern Region, however, are larger in domestic violence (20.1%), rape (21.7%), assault (22.4%), extortion (22.5%), and negligent manslaughter (22.7%).

In the Eastern Region, the homicide rate is higher than the national average (56.6 per 100,000 inhabitants in 2000) in Usulutan (65.6) and La Union (62.6), and lower in San Miguel (53.5) and Morazan (31.1), according to the Attorney General's Office (Table 4.9). Rates of other violent crimes are lower than the national average in all the four departments (PNC).

According to the questionnaire survey results, inhabitants in the Eastern Region perceive criminal activities as the main problem, identified by 27% of the respondents. However, they report economy-related problems (e.g., unemployment, poverty, dollarization, inflation/high prices, etc.) to be the main problem much more (a 52% share as combined) than all the crime-related problems combined (33%).

Practically a half of the survey respondents in the Eastern Region admit that they have had to change their behavior because they felt unsafe. Of the business owners who responded, 8% closed their businesses in 2002 due to their fear of becoming crime victims. It is interesting to note that their behavioral changes derived from perceptions of unsafeness are positively correlated with exposure to news by the mass media.

Table 4.8. National Crime Statistics, 2000-2003

Type of crime	2000	2001	2002	2003 (Jan.-May)
Larceny-theft	16,565	14,166	11,225	3,775
Robbery	10,599	7,740	5,304	1,689
Intimidation	6,278	6,278	5,523	1,999
Aggravated assault	5,583	5,746	4,538	1,876
Vehicle theft	4,564	3,464	3,064	804
Willful homicide	2,341	2,207	2,024	955
Damage	1,895	1,841	1,532	600
Vehicle robbery	1,701	1,602	1,864	573
Unintentional assault	1,643	2,818	0	0
Negligent manslaughter	832	993	982	451
Forcible rape	778	818	842	361
Domestic violence	0	1,521	599	175
Robbery/theft of merchandise-loaded vehicle	795	656	262	112
Extortion	508	318	374	117
Kidnapping	114	49	19	5
Embezzlement	23	29	0	0
Homicide attempt	0	0	5	0
Other	7,327	2,864	6,438	2,177
Total	61,546	53,110	44,595	15,669

Source: Based on National Civil Police statistics.

Table 4.9. Homicide Rate by Department, 1999-2000

Department	Population		No. of homicides		Homicide rate per 100,000	
	1999	2000	1999	2000	1999	2000
Ahuachapán	313,327	319,780	246	195	78.5	61.0
Cabañas	151,968	152,842	45	124	29.6	81.1
Chalatenango	195,245	196,583	94	73	48.1	37.1
Cuscatlán	200,844	202,951	100	136	49.8	67.0
La Libertad	662,096	682,092	404	335	61.0	49.1
La Paz	288,022	292,887	226	241	78.5	82.3
La Unión	286,173	289,021	183	181	64.0	62.6
Morazán	172,569	173,499	59	54	34.2	31.1
San Miguel	471,341	480,276	197	257	41.8	53.5
San Salvador	1,936,290	1,985,294	1,107	976	57.2	49.2
San Vicente	159,165	161,105	48	139	30.2	86.3
Santa Ana	541,197	551,259	636	394	117.5	71.5
Sonsonate	439,533	450,116	220	224	50.1	49.8
Usulután	336,541	338,332	280	222	83.2	65.6
Total	6,154,311	6,276,037	3,845	3,551	62.5	56.6

Source: Attorney General's Office.

Among the victims of criminal acts in the Eastern Region identified by the survey, only 34% reported their cases. This may reflect the lack of people's trust in the efficiency and efficacy of institutions in the public safety and justice sector. Another factor may be insufficient coverage by the local law enforcement. Of the neighborhoods in which the survey respondents live, only

29% have police posts.

In the Eastern Region, people have better assessment of police efficacy to apprehend offenders and criminals, compared to the justice system's capacity to judge and punish them. There are some cases of coordination between private enterprises and PNC reported in the cities of San Miguel and La Union.

In sum, criminal activities have steadily been decreasing in the Country as a whole in recent years, and the crime rate is lower in the Eastern Region than other advanced regions in the Country. The local residents perceive poverty and other economic problems to be more serious than crime-related problems.

4.2 SWOT Analysis on Salvadoran Economy for Investment and Export

Based on the foregoing examination of competitive environment of El Salvador and interviews with entrepreneurs and investors as well as government officials, strengths (S), weaknesses (W), opportunities (O), and Threat (T) for investment and export in El Salvador are analyzed. This SWOT analysis clarifies the comparative position of El Salvador for attracting investments and promoting export.

4.2.1 Strengths

(1) Strategic location in Central America

That El Salvador is centrally located in Central America, neighboring on Guatemala, Honduras and Nicaragua, allows the Country to benefit more from the Central American integration. Its proximity to the U.S. markets gives the Country advantage over competitors of China and other Asians countries. The hub function of its international airport and frequent flight services to main cities in the U.S. provide additional advantages.

Its location facing the Pacific ocean has not much benefited El Salvador, for its main markets have been the U.S. gulf coast and European countries such as Germany and Belgium. This may change if El Salvador becomes the gateway for Central America connecting with the U.S. west coast and Asian countries. Realization of this potential, however, depends on the development of transportation network and transport related industries in Central America.

(2) Labor force

It has been stressed on various occasions that Salvadoran workers, fast learners in nature, make loyal labor force to ensure high productivity and low employee turnover for companies. Also, the Government efforts to focus on the basic education in the recent years have improved the quality of labor. It is difficult to evaluate, however, whether or not Salvadoran workers are ready for new industries that call for more complexities and precision in manufacturing processes. Further, that the number of college graduates is not increasing currently may

constrain the development of more technology-oriented industries.

(3) Relatively transparent and stable government and economy

El Salvador has a relatively transparent and stable government in comparison with other Latin American countries. The government has put a lot of effort into setting up good business climates through the improvement of regulatory and institutional frameworks. One of good examples is El Salvador's Foreign Trade Integrated System (SICEX) – an online clearinghouse – that enables exporters to obtain an export permit within one hour.

FTA negotiations and provision of financial incentives are some of the tools to change the business environment for export and investment. This alone, however, cannot ensure success or competitiveness to the firms over their rivals in neighboring countries since the conditions are almost the same throughout Central America with only a few minor differences as noted in the previous section. The transparency and stability of the government are important factors to maintain a positive business environment for export and investment. A recent survey by the American Chamber of Commerce (AMCHAM) shows that the business environment in El Salvador has improved and that one of the most positive factors is monetary stability due to dollarization.

4.2.2 Weaknesses

(1) Limited size of local market

The size of the local market is not large enough to justify mass production of certain commodities. The total population of all the Central American countries is little more than 30 million, and the combined GDP some US$45 billion, corresponding to less than a half of the economy of Thailand. Since the industry sector has not much developed in the Country and in the region, the demand for intermediate goods is quite limited except the textile and garment industry.

(2) Image of the Country and security problem

The country still suffers from the image of the civil war and natural disasters, and the security problems hinder foreign direct investments. PROESA has been working to change these image problems by the "El Salvador Works" campaign. According to the data provided by the National Civil Police (PNC), however, criminal activities have declined constantly for the past few years (Subsection 4.1.5).

(3) High cost of operation

One of the reasons for higher transportation costs is the inefficiency of the existent domestic port so that a great amount of raw materials and intermediate goods are imported through ports in Guatemala and Honduras at present. The transportation costs are expected to decrease with the privatization of the high-cost Acajutla port and the operation of the new La Union port.

El Salvador has higher wages than Nicaragua by 20-30% but the high productivity compensates for this disadvantage. It is obvious, however, that El Salvador cannot compete with Asian countries, especially China, in term of labor cost per unit of production. Small domestic markets also hinder reduction in unit cost because many companies cannot introduce mass production machinery.

The privatization of the electricity sector has improved the quality of electricity supply, but the electricity price has not been reduced significantly. While the level of electricity price for commercial and industrial uses is low compared with neighboring countries and the U.S., many SMEs complain about the high energy cost.

(4) Low level of industrial accumulation

Historically, El Salvador depended on traditional commodities such as coffee, sugar and shrimp. Only the textile and apparel sector has been developed save a few existing light industries. The industrial sector is still undeveloped and thus the level of accumulation in terms of the number of companies, human resources and the level of technology is low. This situation impedes not only technology-based investment but also human resources development in the Country.

4.2.3 Opportunities

(1) CAFTA with the U.S.

CAFTA is expected to provide Central American countries and the U.S. better access to affordable goods and to promote export and employment. The experience of Mexico with NAFTA indicates rapid increase in investment by FTA.

According to a FUSADES survey, there are more firms (60%) that find some benefit brought by free trade agreements already concluded than those (40%) that do not. The same survey shows that three main advantages of their products and services are quality (reported by 69.9% of the respondent companies), good service and efficiency (57%), and prices (54.4%). Nevertheless, based on the information collected through a series of interviews, those companies, especially SMEs, are not ready for real free trade with major industrialized countries and those that are confident in their products may have never confronted serious competition from outside Central America.

(2) Central American integration

El Salvador is in the position to benefit from the ongoing SICA and PPP initiatives. Particularly, the unified customs system under the Central American Customs Union and the integration of transport, power and telecommunications infrastructures will facilitate investment and export promotion.

(3) La Union port and related infrastructures

The establishment of the La Union port and related infrastructures will reduce the cost of import and export, particularly of container cargoes, which are presently loaded and unloaded at the costly Acajutla port or other ports in Guatemala and Honduras. The realization of full potentials will be subject to the upgrading of artery roads and links with the existing airport and port.

4.2.4 Threats

(1) Dependency on the U.S. economy

The recent deceleration of the U.S. economy has affected investment and export in El Salvador. There always exist threats derived from fluctuations of the U.S. economy, on which Salvadoran export depends heavily. Despite the government efforts to diversify export destinations, it has been difficult to change the structure of the maquila industry.

(2) Increasing competition

Although FTAs will certainly promote export, the domestic market will face fierce competitions from industrialized countries at the same time. Easier access to the Asian countries by the opening of the La Union port may allow inexpensive Asian products to flow into the country.

(3) Abolition of export promotion measures

In compliance with the WTO's Trade-related Investment Measures, some incentives and measures for export promotion will be abolished in steps, including the exemption of import/export duties and most, if not all, of other incentives associated with free zones. There are many uncertainties related to the abolition schedule of other measures.

4.3 Strategy for Investment and Export Promotion

The strategy for investment and export promotion in El Salvador is established, focusing on the Eastern Region. The strategy should utilize or further enhance the strengths and overcome the weaknesses identified in the previous section, taking advantage of the opportunities and coping with the threats also clarified by the SWOT analysis. Strategies commonly applicable to investment and export promotion are presented in Subsections 4.3.1 and 4.3.2, respectively. Under these common strategies, more promising industries and commodities are identified, and specific strategies for those industries and commodities established in Chapter 5

4.3.1 Investment promotion strategy

(1) Targeted and proactive marketing

Marketing for investment opportunities should be targeted more at U.S. based firms. Most firms have headquarters functions for Latin American operations in Miami, New York and

Houston. As CAFTA with the U.S. is effected, new opportunities would emerge to attract investments by U.S. based firms.

Proactive marketing should be combined with broad-based investment promotion. A database for potential investors should be elaborated by PROESA, and investment information should be sent out periodically via the Internet. Information may be customized to meet the needs of various investors. A customer relationship management (CRM) system may be eventually introduced.

Most embassies have investment-related brochures produced by PROESA but lack knowledge on what investors need. Staff of embassies and consulates should be trained to serve as proactive marketing agents. They should be able to answer basic questions by potential investors and collect basic data for market research. Also, correspondents should be placed, on a commission basis at the beginning, in target cities such as New York, Miami, Houston and Los Angeles to collect information on investors and convey investors' requests to PROESA.

(2) Promotion group

A promotion group should be established to attract investments in the Eastern Region with the participation of CND, CEPA, PROESA, MOE, MAG, and other agencies and institutes. The roles of this group are 1) planning and coordinating investment promotion activities among actors, 2) exchange of investment information, and 3) monitoring of ongoing projects. The group should also undertake the marketing of the La Union port in cooperation with the private sector to attract more cargoes and shipping lines. Specific activities include 1) conducting port seminars, 2) setting up a website and permanent sales window, 3) dispatching missions to the U.S., and 4) producing brochures. Domestic promotion should target at industries including maquilas currently using Port Cortes or Santo Tomas de Castilla for export.

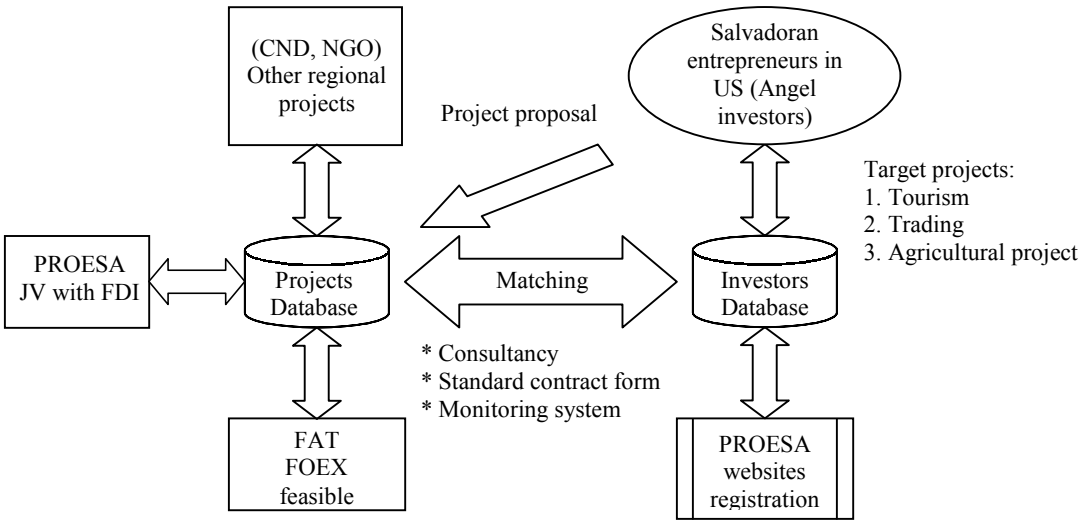
(3) Strengthening of network with overseas Salvadorans

Overseas Salvadorans, especially those in the U.S., are potentially most significant investors but currently lacking in access to information on business opportunities in El Salvador and also mutual trust to undertake joint investments. They should be linked by information network. A database should be established on potential investors and also possible investment opportunities. Through the network, overseas Salvadoran investors and local projects are matched (Figure 4.1).

(4) Incentives

Labor costs in the Eastern Region should be reduced to attract labor-intensive industries such as textile and apparel. One way is to introduce exclusive labor incentives such as subsidized training and job bonus, practiced in Costa Rica for a designated area. Another possibility is to introduce differential minimum wage rates and apply a lower rate in the Eastern Region for a limited time. Employment at the lower wage would be definitely preferable to unemployment.

Figure 4.1. Matching Mechanism for Overseas Salvadoran Investors and Local Projects



FITEX is a trust fund to promote development of industries in free zones. FITEX grants compensation to the interest rate of loans through certain financial institutions for construction and/or acquisition of industrial buildings. This scheme should be extended to industries outside free zones in the Eastern Region alone for a limited time to accelerate industrial location.

(5) Infrastructure for FTZ

To enhance the attractiveness of the free trade zone (FTZ) to be established at the La Union port, high-grade infrastructure should be provided. In addition to basic infrastructure, facilities and services to be provided would include 1) refrigerated storage system, 2) common silos, 3) a third party inspection company with a laboratory, 4) bonded warehouses with preferential low rates for Honduran and Nicaraguan companies, 5) training facilities equipped with sawing machines for apparel companies, and 6) IT facilities with optic fiber link for 24 hour services.

(6) Logistic cluster

Strong logistics functions are essential for effective operation of the La Union port. Conversely, the establishment of the La Union port would provide opportunities to develop various logistic industries. Existing logistic and distribution related industries should be strengthened.

As a first step, the profiles of the existing companies involved in logistic and distribution services should be prepared. To apply the existing government program to develop these industries, a logistic cluster should be formed. Possible actors to be included in the cluster are 1) shippers/consigners, 2) trucking companies, 3) shipping companies, 4) forwarders, 5) warehouse operators, 6) airlines, 7) CEPA, 8) customs office, 9) port operators, and 10) government agencies. During initial cluster meetings, a common goal should be set among the actors, and issues involved in the cluster development identified such as regulations, multi-modal transport system, telecommunications, and electronic data exchange. Working groups

may be formed to conduct research on more essential issues.

4.3.2 Export promotion strategy

(1) Export orientation

Most SMEs in the Eastern Region have never considered export business seriously. Export orientation should be provided for local entrepreneurs to raise awareness for export opportunities, particularly associated with the La Union port. As a first step, COEXPO should organize a seminar or workshop in San Miguel, for the first time in the Eastern Region. Subjects to be covered include export diagnostics, successful cases, available services and fund by export promotion agencies, and basic export procedure. Similar seminars/workshops should be conducted in series in Usulutan, La Union and Santa Rosa de Lima, while responses of participants should be evaluated each time for more effective programs.

(2) Stepwise development of export capacity

It is much easier for SMEs to replace goods in the domestic market imported from the neighboring countries rather than to export goods. Most goods imported from the neighboring countries are also produced domestically, but production costs are generally higher. To outdo imported goods in the domestic market, local SMEs should aim at high-quality market in the Country. In so doing, SMEs would improve their productivity necessary to produce for the export market. Also, production capacity needs to be expanded to overcome the threshold of export quantity. Cooperative-based production of vegetables should be encouraged. In most cases, even cooperatives are too small to produce for export, and a consortium needs to be formed.

Development of export capacity should be realized selectively to create export winners. For this purpose, a database of potential exporters/suppliers in the Eastern Region should be prepared by CENTROMYPE, and more promising entrepreneurs or companies selected for assistance.

Chapter 5 COMPETITIVENESS OF SALVADORAN INDUSTRIES AND COMMODITIES AND THEIR PROMOTION STRATEGIES

5.1 Promising Subsector Industries and Commodities

Promising subsector industries in El Salvador are identified focusing on the Eastern Region, based on macro trade statistics and the results of surveys conducted as part of the Study. First, the competitiveness of subsector industries in El Salvador is analyzed in Subsection 5.1.1 based on trade statistics. Second, the results of the surveys are summarized in Subsection 5.1.2 for advantages and disadvantages of El Salvador as perceived by potential investors and also for possible new industries that may be established in the Eastern Region. Third, combining these analyses, three models for promising industries in the Eastern Region are clarified also in Subsection 5.1.2 in relation to the La Union port. Two models represent manufacturing industries that may be established in the Eastern Region induced by improved locational conditions provided by the La Union port. The third model represents indigenous resources-based industries.

Industries of the third model are further examined in Subsection 5.1.3, combining the analysis on the trade statistics in Subsection 5.1.1, and interviews and field surveys in the Eastern Region. More specific commodity groups are identified, and more promising ones are selected by a set of evaluation criteria.

5.1.1 Analysis on competitiveness by subsector industry

(1) Competitiveness by commodity group in El Salvador

Competitiveness of the existing economic activities is analyzed to identify more promising ones that may be promoted further. For El Salvador has been pursuing open economic policy and free trade, the competitiveness of any activity or commodity may be judged based on its export performance. Table 5.1 presents the export performance in recent years by commodity class. Other than textile dominantly of maquila, four growth areas are identified with export value of more than US$100 million in 2001: (i) prepared foodstuffs, (ii) wood pulp products, (iii) base metals and their articles, and (iv) machinery and mechanical appliances.

The trade specialization coefficient (TSC) may be used to make a broad judgment on comparatively better export competitiveness. This is defined as the export value minus the import value divided by their sum. As also shown in Table 5.1, the TSC is negative for all the commodity groups, except vegetable products, and textile and textile articles, indicating that El Salvador imports these goods more than it exports. Taking those groups with the TSC value larger than -0.50, the following are identified as more promising commodity groups:

1) Animals and animal products,
2) Vegetable products,

Table 5.1. Export Growth, 1997-2001

(Unit: US$10^3)

Sections	1997	1998	1999	2000	2001	Total	Share (%)	Growth (%)	TSC†
Animals and animal products	54,206	58,094	46,995	47,470	39,208	245,973	2.4	-7	-0.36
Vegetable products	538,359	344,212	267,270	333,167	150,988	1,633,996	15.8	-22	0.31
Animal or vegetable fat	11,672	11,541	13,391	15,414	13,662	65,679	0.6	5	-0.71
Prepared foodstuffs	155,695	181,942	173,452	183,500	227,458	922,047	8.9	10	-0.09
Mineral products	47,695	48,575	55,047	69,933	74,954	296,203	2.9	12	-0.76
Chemical products	146,779	159,890	152,601	154,017	157,385	770,672	7.5	2	-0.47
Plastics and rubber	33,134	39,329	44,303	56,186	62,604	235,557	2.3	17	-0.65
Hides and skins	5,715	6,472	11,436	7,685	8,782	40,091	0.4	18	-0.23
Wood and wood products	1,926	1,779	1,570	1,775	2,094	9,145	0.1	3	-0.88
Wood pulp products	69,126	71,993	80,329	90,525	100,730	412,702	4.0	10	-0.35
Textiles and textile articles* (mainly maquila)	126,971	144,390	1,338,776	1,184,937	1,702,326	4,497,401	43.6	218	0.07
Footwear, headgear	16,007	18,147	15,122	19,148	19,480	87,904	0.9	6	-0.32
Articles of stone, plaster, cement, asbestos	4,781	3,247	7,161	9,955	11,391	36,535	0.4	35	-0.81
Pearls, precious or semi-precious stones, metals	1,845	1,091	776	388	273	4,374	0.0	-37	-0.61
Base metals and articles thereof	75,856	90,893	92,381	109,903	110,597	479,631	4.6	10	-0.46
Machinery and mechanical appliances	49,504	48,981	95,013	113,755	135,498	442,751	4.3	33	-0.75
Transportation equipment	1,074	935	836	1,343	3,438	7,625	0.1	48	-0.99
Instruments (measuring and musical)	1,443	804	1,547	2,683	2,502	8,978	0.1	29	-0.94
Arms and ammunition	7	2	14	28	1,301	1,352	0.0	1,290	-0.86
Miscellaneous	17,364	20,441	25,442	27,094	26,437	116,778	1.1	12	-0.51
Art works	29	8	11	15	8	70	0.0	-13	-0.82
Total	1,359,188	1,252,767	2,423,470	2,428,923	2,851,115	10,315,464	100.0		

*Some maquila exports not included / †TSC=(Export-Import)/Import+Export
Source: BCR.

3) Prepared foodstuff,
4) Chemical products,
5) Hides and skins,
6) Wood pulp products,
7) Textiles and textile articles,
8) Footwear and headgears,
9) Base metals and their articles, and
10) Miscellaneous commodities.

Three commodity groups ranked high by both of the methods used above may have comparatively better prospects. These are prepared foodstuffs, wood pulp products, and base metals and their articles. In addition, textile articles derived mainly from maquila constitute another promising group.

Three commodity groups have very high rates of export growth although the TSCs of these groups are close to –1.0 reflecting the dominance of import. They are (i) articles of stone, plaster, cement, asbestos, etc., (ii) transportation equipment, and (iii) measuring and musical instruments. Only some specific commodities in these groups may be promising and subject to export promotion.

5.1.2 Identification of promising import/export industries

(1) Potential investors survey

The potential investors survey was conducted separately in Japan for Japanese firms/companies and in Central American countries. According to the survey in Japan, important factors for Japanese investors to make investments decisions in Central America are 1) public safety, 2) low country risk, 3) quality of labor, and 4) good infrastructure, while such factors as stable macro economy, friendly people (amiable nationality), government support and simple procedure of setting up a company are considered to be less important. Unfortunately, none of the Japanese firms that responded to the questionnaire (40 in total of 117 firms surveyed) has a plan to establish a factory or a sales office in El Salvador. The main reasons for this lack of interest are 1) limited knowledge of the Country, 2) small market, even including neighboring Central American countries, and 3) less attractive business environment compared to East Asian countries.

According to the survey in Central America, over 60% or 83 of 135 firms that responded to the questionnaire evaluate El Salvador as a good or excellent investment destination. Over 90% of the respondent firms already have business experiences in El Salvador. Important factors for them to make investment decisions in Central America are 1) low country risk, 2) good security, and 3) good access to markets, while such factors as amiable nationality, low labor cost, and

availability of incentive measures are considered as less important. For El Salvador, more important factors for investments decisions are found to be low country risk, simple procedure of starting business, and simple laws and regulations. The respondent companies identified the strengths of El Salvador as 1) high labor quality, 2) dollarized economy, and 3) amiable nationality. El Salvador is considered to be weak in utilities cost, consistent and simple law regulations, and government support.

According to the survey, about 40% of the respondent firms are considering investing in the Eastern Region with additional 14% expressing a high possibility of investment. Of the companies operating in free zones, 5% is considering and 18% expressing a high possibility to invest in the Eastern Region. The types of industries considered to be promising by the respondents are 1) snack food industry for snacks, cereals, bakery, etc., 2) textile and apparel, 3) logistic and distribution, and 4) construction.

(2) Survey on the existing industries

The survey on the existing industries was conducted as part of the Study, comprising questionnaire and interview surveys. The main results are summarized in Subsection 8.1.2. The questionnaire survey covered a total of 203 enterprises in various subsector industries. Based on the results of the questionnaire survey, 28 enterprises were selected for a more detailed survey by interviews. The interview survey has revealed existing import and export related industries as summarized in Table 5.2. Some of these industries may shift to or expand into the Eastern Region once the La Union port is established.

Table 5.2. Import and Export Related Industries Revealed by Industrial Interview Survey

(1) Existing import of raw materials for processing

Raw materials	Import from	Products	Markets
Unhusked rice	U.S.	Polished rice	Domestic
Feed raw materials	Unknown	Feed concentrate	Domestic
Fabrics, springs, stuffing	Europe	Mattresses, furniture	Domestic, CA, Belize
Pork	U.S.	Meat products	Domestic
Parts	Japan	Zippers	Domestic
Paper raw materials	U.S., Belgium	Carton boxes, printing	Domestic
Steel	Unknown	Agricultural implements	Domestic, CA, Caribbean, Mexico
Food and other additives	U.S., Germany	Beverages, pharmaceuti-cals, etc.	Domestic, Honduras, Domini-can Rep.
Medicine raw materials	Guatemala, U.S., Europe	Pharmaceuticals	Domestic, Honduras, Nicaragua
Wood, wood parts Textile, wires	Guatemala, Honduras U.S., Mexico	Furniture	Domestic, CA
Chickens	U.S.	Chicken meat products	Domestic, CA
Steel, parts	Unknown	Metal products	Domestic, CA, Dominican Rep.

(2) Existing and possible export goods – Advantage of the Eastern Region

Products	Export to	Advantage	Reasons
Sisal and kenaf bags	Guatemala, Honduras, South of Mexico	High	Possible increase in raw materials
Raw sugar	U.S.	Medium	Availability of raw materials
Molasses	CA (Nicaragua, Guatemala)	Medium	Availability of raw materials
Shrimps*	Japan	Medium	Improved access by La Union port
Shoes	CA	Low	
Confectionery*	CA, U.S.	High	Availability of raw materials
Food products based on grains and beans	Canada, U.S., Germany, Taiwan	Medium	Improved access by La Union port to Asian market
Processed coffee	U.S.	Medium	
Instant coffee*	U.S.	Low	
Dehydrated fruits*	Japan, Europe	Medium	Improved access by La Union port

*possibilities mentioned by interviewees

Source: JICA Study Team, op. cit.

5.1.3 Identification of promising indigenous industries in the Eastern Region

(1) List of promising commodities in the Eastern Region

Based on the list of the more promising subsector industries identified in Subsection 5.1.1, more promising indigenous industries are identified focusing particularly on the Eastern Region. To evaluate the indigenous industries, the selected subsector industries need to be examined at the level of more specific commodities based on the availability of indigenous resources in the Region. Therefore, a larger and more specific list of promising commodity groups has been prepared as shown below.

List A

1) Animal or vegetable oils: prepared edible fats and animal or vegetable waxes;
2) Construction materials;
3) Beverages, spirits and vinegar;
4) Cereals;
5) Cocoa and cocoa preparations;
6) Cotton;
7) Dairy products, bird eggs, honey and other animal products;
8) Edible fruits and nuts: citrus fruits or melons;
9) Processed meat and fish (including crustaceans, mollusk and other aquatic invertebrates);
10) Essential oils and resinoid: perfumery, cosmetic or toilet preparations;
11) Food industry residues or waste: prepared animal feed (including indigo's waste);
12) Furniture;
13) Glass and glassware;
14) Lac, gums, resins and other vegetables soap and extracts;
15) Leather articles;

16) Oil seeds and oleaginous fruits;
17) Industrial and medical plants;
18) Paper and paperboard;
19) Pharmaceutical products;
20) Plastic and its articles;
21) Raw hides and skins;
22) Silk (sericulture);
23) Soap, waxes, polish, candles, modeling plasters, and dental preparations using plaster;
24) Sugars and sugar confectionary;
25) Tanning or dyeing extracts;
26) Tools, implements, cutlery, spoons and forks;
27) Vegetable plaiting materials; and
28) Wood and articles of wood.

Interviews were conducted with selected enterprises in the Central region, the Western region and the Eastern Region to investigate more promising commodity groups. Also, field surveys were carried out in the Eastern Region to examine some locational conditions including the availability of indigenous resources. The results of the interviews and field surveys in the Eastern Region are summarized in Table 5.3. Based on these, another list of commodity groups has been prepared as follows.

List B

1) Dairy products: cow's milk processing, cheese, etc.;
2) Poultry farming;
3) Vegetables: cucumber, tomatoes, green pepper (chile verde), kidney bean (ejote), etc.;
4) Fruits production and distribution center;
5) Cashew nuts (marañón);
6) Cacao;
7) Apiculture and honey-related products;
8) Sugar refining and related products;
9) Preserves (jams);
10) Indigo and its dye works;
11) Organic coffee production;
12) Shrimp culture;
13) Leather manufacturing;
14) Plastic products;
15) Packing materials; and
16) Jewelry works.

Table 5.3. Promising Commodities in the Eastern Region Identified through Field Surveys

Department	Field/Commodity	Reasons for Selection	Reference/Remarks
1. La Union			
El Carmen	Dairy products	Division of works with Honduran seafood and Nicaraguan wooden products in the common market	Mayor's Office at La Union city.
Conchagua	Vegetables and fruits	To establish a supply center in the area.	(The same as above)
San Antonio Silva	Cheese	To expand existing market and to make a supply center in the area.	Specific products to be selected. It's necessary to utilize upgrading technology.
La Unión	Plastic products Packaging materials	New investment expected in the hinterland of the La Union port area.	Mayor's Office at La Union city
Santa Rosa de Lima	Cashew nut (marañón) Jewel work Honey Molasses Jam	Lands suitable for cultivation. To utilize the mineral resources and skilled workers existing in the area. Demand to expand after the completion of new port construction. Market to expand for healthy food into other Central American countries. To bring Honduran consumers back, who left the market due to dollarization in El Salvador.	Commerce Association of Santa Rosa de Lima city.
Anamorós	Poultry farming Leather Cheese Vegetable	Unstable chicken market due to buy-up to be corrected. Revival of old industry with new technology. Cheese producers as well as market existing; they only need to be organized to produce quality products. Cooperative with a vegetable testing farm by own irrigation system planning to expand their activities.	Stock Raising Farmer Association of Anamorós.
2. San Miguel			
San Miguel	Cow's milk processing	Milk collection channel to be established and a processing plant installed.	San Miguel Chamber of Commerce and Industries.
San Miguel	Cow's milk Dairy products	No plant existing in the Eastern Region; with fully equipment plant, the market can expand.	El Salvador Stock Raising Farmer Association San Miguel Branch.
San Miguel	Indigo product	Indigo can grow in abandoned agricultural lands and also substitute low elevation coffee. El Salvador can become world no.1 producer.	Discussed with Mr. Miguel Angel Espinal, Indigo Association.
Tierra Blanca	Cashew nut	Cooperative producing 500 ton/year on its land of 1.400ha only for seed to be exported to India through a Japanese trading firm; renovation of old trees necessary.	Cooperative Coralama

Department	Field/Commodity	Reasons for Selection	Reference/Remarks
3. Morazan			
San Francisco Gotera	Organic coffee Vegetables (cucumber, tomato, green pepper (chile verde), kidney bean (ejote). Fruits Cow's milk Indigo	MAG plans to establish a fruits center (Centro de Acopio de Frutas) in Morazan department. ADEL has a plan to make a test cultivation of indigo in its own field. Pilot plant to establish with laboratory for processing to extract its dyes and to make the dyeing works for final products. ADEL considering cow's milk processing viable.	ADEL Morazan
4. Usulutan			
Usulutan	Shrimp (prawn) culture	Cooperative planned to expand its operation; reform of distribution channel and improvement of product quality (from the grade C at present) necessary; Technical assistance sought.	Shrimp cultivators cooperative in the Jiquilisco Bay area
Usulutan	Organic coffee	Expansion of cultivated area in Jucuapa, Tecapan and Las Marías planned; the brand "Monte Nuevo" developed.	Representatives of coffee cooperatives in their production area.
Nueva California	Cacao	Cooperative having 150ha to produce 50ton/year cacao for processing with OCIA certification.	Cooperative La Carrera

Source: JICA Study Team.

Classification

Theses commodity groups may be categorized into the following three classes:

- Class I for industries that may be started in the short term,
- Class II for industries promising for medium-term development, and
- Class III for industries for which some essential conditions need to be satisfied before they can be started.

	Class I	Class II	Class III
List A	3, 7, 8, 21, 24, 25, 27, 28	1, 2, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 23	17, 22, 26
List B	1, 2, 3, 5, 6, 7, 8, 10, 13, 16	4, 9, 11, 12, 14, 15	

The division between Class I and Class II is based on the judgment on:

1) whether the production expansion of raw materials would be a prerequisite to establishing respective industries, and
2) whether more advanced technologies or high-grade skills would be required.

The essential conditions to be satisfied for industries classified into Class III are:

A17 – identification of useful plants and development of extraction technology,

A 22 – sufficient development of dye works to justify product diversification, and

A 26 – sufficient development of metal works to support quality products.

(2) Evaluation of potentials

Of the long list above, those commodities and industries in Class I, which may be started in the short term, are evaluated. First, eight commodity groups in List A and 10 commodities groups in List B are consolidated and the following 15 commodities groups are identified for evaluation: 1) beverages, spirits and vinegar, 2) dairy products, 3) edible fruits, 4) raw hides and skins, 5) sugar and confectionery, 6) indigo and dye works, 7) vegetables, 8) wood and articles of wood, 9) poultry farming, 10) cashew nuts, 11) cacao, 12) apiculture and related products, 13) organic coffee, 14) shrimp culture, and 15) jewelry works. In addition, kenaf is included for evaluation as it has potential linkages with various industries in the long list such as construction materials, pulp and paper, and packing materials.

Two-step evaluation is conducted by a set of criteria in each step. The criteria for the initial evaluation are related to existing and immediate future conditions of individual companies, industry, and inter-industry aspects as shown in Table 5.4. The results of the first evaluation are given in Table 5.5. Three commodity groups are eliminated from further consideration due to very low scores. The jewelry works industry, despite its low score, is retained for its prospects in FTZ.

Table 5.4. Criteria for Evaluation of Promising Commodities in the Eastern Region

Initial evaluation

Criteria	Score and evaluation
1. Companies	
A. Access to raw materials	1: Difficult 2: Some problems to be solved 3: Easy 4: More than sufficient
B. Product/industry management	1: Weak 2: Fair 3: Very good 4: Very good encompassing various producers
C. Product quality	1: Need improvement 2: Medium 3: Good 4: More than sufficient
D. Product marketing	1: Marketing only in local areas 2: Marketing throughout department 3: National marketing 4: Export marketing
E. Client service	1: Many client claims 2: Fair customer satisfaction 3: High customer satisfaction 4: Very high customer satisfaction
2. Industry	
F. Production experiences	1: Production decreasing or failed 2: Fair production 3: Very good production 4: Production for export quality
G. Employment impact	1: Small employment opportunities 2: Good employment opportunities 3: Large employment opportunities in the long term 4: Large employment opportunities in the short term
H. Potential markets	1: Not known 2: Little information 3: Other market conditions known 4: Aiming at new markets
I. Expansion	1: Little prospect 2: Fair prospect 3: Strong prospect 4: Specific projects for expansion
3. Inter-industry	
J. Integration with other industries/products to form clusters/alliances in the Eastern Region	1: Poor relationship with other industries/products 2: Possible to organize some producers 3: Likely to form association 4: Cluster being formed

Second evaluation

Criteria	Score and evaluation
K. No. of producers in the Eastern Region	1: Very few 2: Small 3: Medium 4: Large
L. Export experiences	1: None/almost none 2: Little 3: Some 4: Sufficient
M. Potential production for export	1: Very low capacity 2: Fair capacity 3: Good capacity 4: Large capacity with know-how and technology
N. Other derivative products	1: None 2: Few for export 3: Several for export 4: Many for export
O. Contribution to export or import substitution	1: Exclusively domestic market oriented 2: Mostly domestic market oriented with some import substitution 3: Export market oriented or significant import substitution 4: Highly export market oriented

Source: JICA Study Team.

Table 5.5. Initial Evaluation of Potential Products in the Eastern Region

Item \ Criteria		A	B	C	D	E	F	G	H	I	J	Total score
Apiculture & related products	B-7	2	4	4	4	4	4	4	4	4	4	38
Poultry farming	B-2	4	4	4	3	4	4	4	4	4	2	37
Cashew nuts	B-5	2	4	4	4	4	3	4	4	4	3	36
Organic coffee	B-11	2	4	3	4	4	3	4	4	4	3	35
Dairy products	A-7/B-1	2	4	3	3	4	3	4	4	4	3	34
Sugar derivatives	A-24/B-8	4	4	3	3	4	3	4	3	4	2	34
Indigo & dye works	B-10	3	3	3	4	4	2	3	3	4	1	30
Kenaf		2	2	2	3	2	2	3	3	3	3	25
Shrimp cultivation	B-12	3	3	2	2	2	2	2	2	3	3	24[*1]
Vegetables	A-27/B-3	2	4	3	1	3	2	1	2	3	3	24[*2]
Edible fruits	A-8	2	2	2	3	2	2	3	2	3	2	23[*3]
Wood & wood article	A-28	3	2	2	2	2	2	3	2	2	2	22[*4]
Jewel works	B-16	2	1	1	2	1	1	2	2	2	1	15[*5]
Raw hides & skins	A-21/25, B-13	2	2	2	1	1	1	1	1	3	1	15
Beverages, spirits & vinegar	A-3	2	1	1	1	3	2	1	1	1	1	14
Cacao	B-6	1	1	1	1	2	1	1	1	2	1	12

[*1] JICA technical cooperation should be continued.
[*2] Technical extension and collection for distribution should be improved.
[*3] Quality and distribution systems should be improved.
[*4] Metal mechanics industries in San Miguel area should be organized.
[*5] Operation in FTZ may be considered.

Source: JICA Study Team.

The remaining 13 commodity groups are subject to the second evaluation. The criteria for the second evaluation are related to the prospects for further and continued development of each industry as shown in Table 5.4. The results are given in Table 5.6. Three commodity groups are found to have very high potentials: apiculture and related products, cashew nuts, and poultry farming. Additional four commodity groups have high potentials: organic coffee, sugar derivatives, dairy products, and indigo and dye works.

Four commodity groups have medium-high potentials: kenaf, shrimp culture, vegetables, and edible fruits. In particular, development of edible fruits and vegetables is subject to quality improvement through technical extension and the improvement of distribution and marketing systems. Technical extension has been currently undertaken by MAG, and the improvement of distribution and marketing systems will be realized through the improvement of transport infrastructure particularly related to La Union port development. Therefore, these products are expected to develop as the population grows and income levels increase, for they are basically demand-driven. More strategic approaches will be required for other types of commodities.

Table 5.6. Second Evaluation of Potential Products in the Eastern Region

Item	Criteria	Initial score	K	L	M	N	O	Grand total	Overall potential
Apiculture & related products	B-7	38	2	4	4	4	4	56	Very high
Cashew nuts	B-5	36	3	3	3	4	4	53	Very high
Dairy products	A-7/B-1	34	4	3	4	4	3	52	Very high[*1]
Organic coffee	B-11	35	2	3	3	2	4	49	High
Sugar derivatives	A-24/B-8	34	3	4	4	2	1	48	High
Poultry farming	B-2	37	3	1	2	2	1	46	High[*2]
Indigo & dye works	B-10	30	2	2	2	3	4	43	High[*2]
Kenaf		25	2	3	2	3	3	38	Medium[*1]
Shrimp cultivation	B-12	24	3	2	3	2	3	37	Medium[*3]
Vegetables	A-27/B-3	24	2	1	3	2	3	35	Medium
Edible fruits	A-8	23	2	2	3	2	2	34	Medium
Wood & wood article	A-28	22	2	1	3	2	2	32	Low[*1]
Jewel works	B-16	15	1	2	3	3	3	27	Low

[*1] Supplement
[*2] Certain conditions should be met.
[*3] JICA technical cooperation should be continued.

Source: JICA Study Team.

5.1.4 Promising import/export industries in the Eastern Region

Three models are conceived for promising industries in the Eastern Region, particularly those related to import and export, which may be induced as the La Union port is established. They are as follows.

Model 1: Procurement of raw materials by land from neighboring countries for processing in the Eastern Region and export from the La Union port,

Model 2: Import of raw materials and/or intermediate goods through the port to produce final products for domestic and international markets, and

Model 3: Processing of indigenous resources to produce export commodities.

Promising industries/commodities of Models 1 and 2 are identified below in reference to the results summarized above. The strategies to promote those most promising are presented in Section 5.2. In Section 5.3, promising industries/commodities of Model 3 are analyzed and the strategies to promote the most promising ones are presented.

Model 1

Raw materials	Export goods
Wood and lumber from Honduras	Plywood, fiberboard, furniture
Fruits	IQF or dehydrated fruits, jams, preserves, juice, etc.
Vegetables	IQF vegetables
Milk	Cheese and processed cheese products
Meat	Meat products

Model 2

Import materials & goods	Final products
Waste paper, paper raw materials	Toilet paper, carton boxes, etc.
Iron and steel	Steel products
Cement, cement raw materials	Cement products (blocks, slates, etc.)
Machine parts	Agricultural machinery
Grains and other feed ingredients	Mixed feed, feed concentrate
Textile and fabrics	Garments

Other industries would also develop in the Eastern Region, linked with those in the more advanced Central region. They include the following types:

1) sales and distribution functions of San Salvador-based firms,
2) subcontractors to process imported materials into intermediate goods to be supplied to San Salvador-based firms,
3) retail outlets of large discount stores or supermarkets,
4) supply of goods for daily needs, consumption goods and office supplies, and
5) R&D services related to agriculture and the food industry.

5.2 Promotion Strategies for Import/Export Manufacturing

Strategies for promotion of manufacturing industries that may be established in the Eastern Region induced by the La Union port are established: Model 1 industries in Subsection 5.2.1 and Model 2 industries in Subsection 5.2.2. For industries identified as promising in Subsection 5.1.2, more specific products and markets to be targeted for promotion are clarified.

5.2.1 Strategies for promotion of Model 1 industries

(1) Existing conditions and prospects

Wood products

El Salvador imports lumber from Honduras. Its quantity is small (some 40,000ton) and the import duty is nil. A small wood plant exists in San Miguel processing pine and cedar lumber imported from Honduras and Nicaragua. Other semi-finished products are also imported such as wood doors. Manufacturing of furniture is limited.

In view of high prices of imported pine and cedar lumber, the wood products industry in the Eastern Region should aim at high quality products such as furniture and medium density fiberboard rather than plywood. For fiberboard manufacturing, technology as well as machinery needs to be introduced from an advanced country.

Processed fruits and vegetables

Production of export quality fruits and vegetables is quite limited in Honduras and Nicaragua except banana. Some fruits and vegetables produced in Honduras are marketed in the Eastern Region in small quantities. The Eastern Region does not produce any processed fruits or vegetables at present.

Processing industries for fruits and vegetables based on imported raw materials will not likely be established in the Eastern Region in the foreseeable future. IQF fruits and vegetables produced in Honduras and Nicaragua may be exported from the La Union port in the medium term future once the export process is simplified to allow direct shipment of consignments without additional inspection on the Salvadoran side.

Processed cheese products

Milk is currently imported from Honduras and Costa Rica in the form of processed and packed milk, and sold at prices 5-10% higher than domestic milk. Illegal import of milk and cheese is observed particularly in the Eastern Region. The establishment of milk and dairy plants is contemplated in the Eastern Region.

Meat products

Nicaragua exports beef in large quantities, 12,634 ton to fetch US$32 million in 2002. Slaughterhouses and meat processing plants for export to the U.S. satisfy sanitation requirements. El Salvador imports Nicaraguan beef at present. The establishment of the meat products industry in the Eastern Region for export would have to conform to high quality and sanitation requirements.

(2) Strategies

These resource-based industries commonly locate in areas of raw materials production. The establishment of such industries in the Eastern Region could be justified only under certain conditions. One possible condition is to establish a processing plant based on domestic resources and expand its operation with import resources. Another possibility is to import semi-finished products after primary processing in the neighboring countries and to further process then into final products for export. In this case, high quality/high value products need to be produced. The first possibility is effectively a case of indigenous industries. The second possibility should be further pursued.

The wood product industry in the Eastern Region should pursue fiberboard manufacturing with technology and machinery to be introduced from an advanced country. It would be ideal then that products are exported to the same country. Manufacturing of processed cheese products may be based on primary processing in the neighbouring countries, but a milk and dairy plant should be established in the Eastern Region based on domestic milk initially. According to the survey on Salvadorans in the U.S. conducted as part of the Study, cheese and other dairy products are most demanded nostalgic products, consumed by over 50% of the surveyed Salvadorans. This niche market is expected to respond to the supply of diversified high quality products.

5.2.2 Strategies for promotion of Model 2 industries

(1) Existing conditions and prospects

Paper products

El Salvador produces toilet paper, carton boxes and other paper products from domestic and imported raw materials. Some products are exported mainly to neighbouring countries. The annual export of toilet paper and carton boxes reaches 36,000 ton and 28,000 ton respectively. El Salvador imports these products in smaller quantities: 7,400 ton for toilet paper and 8,300 ton for carton boxes annually. The manufacturing industry and markets for paper products are well established in Central America with division of work for different products. There exist eight manufacturers of carton boxes in El Salvador, including the second and the third largest in Central America. They have excess production capacity and face severe price competition.

As many industries establish associated with the La Union port, the demand for carton boxes will probably expand beyond the existing production capacity. The demand for toilet paper will also expand as the population increase accelerates and the number of tourists increases. Since El Salvador does not produce paper pulp, waste paper, pulp and raw materials would have to be imported.

Steel products

In El Salvador, there are three manufacturers with electronic furnaces to produce ingots and steel bars for construction. Raw materials are partly reclaimed domestically but mainly imported. El Salvador also imports 24,500 ton of steel products annually. These products are transported by land and further processed into various uses locally. Once the La Union port is established, the steel products industry may establish in the Eastern Region to process import raw materials into final products to satisfy at least the regional demand.

Cement products

Cement supply in El Salvador is dominated by CESSA, which provides training and other supports to individual cement products manufacturers. Diversified cement products are produced from the domestic cement. Also, El Salvador imports various cement products totaling 22,000 ton annually.

The La Union port may induce the establishment of a cement plant based on import raw materials in the port hinterland, and the cement products industry may expand throughout the Eastern Region. The development of the cement products industry based on import cement is less likely as cement products manufacturers may be deprived of CESSA's support.

Agricultural machinery

Use of agricultural machinery in El Salvador is very limited, reflecting the lack of incentive to increase agricultural productivity. According to the FAO statistics, there exist 3,430 tractors and 420 combine harvesters in El Salvador as of 2001.

As marketing opportunities expand along with the Eastern Region development, including export opportunities from the La Union port as well as expansion of urban markets for fresh fruits and vegetables, incentives to increase agricultural productivity will be enhanced. This would increase the demand for irrigation and agricultural machinery as well as other production input. Since the farm holding size has become smaller as a result of the agrarian reform, the demand would be higher for small agricultural machinery, mainly small tractors. In particular, the dominant soil type in the interior valley area of the Eastern Region demands adequate agricultural machinery for plowing and other operations. Also, the undulating terrains call for small agricultural machinery.

Mixed feed and feed concentrates

The livestock sector in El Salvador is supported mainly by domestic production of feed grains (e.g., maize and sorghum) as well as grazing land for cattle. El Salvador at present imports only 15,000 ton feed annually.

As the incentive to increase agricultural productivity enhances induced by the La Union port

and the Eastern Region development, more land would be converted from pasture and maize/sorghum cultivation to cultivation of high value crops partly under irrigation. Increased feed grains and other feed ingredients would need to be imported to compensate for reduced domestic feed supply.

Another possibility is the establishment of fishmeal plants by using currently unused fish wastes. Supply of fish wastes will increase as the ongoing and planned fish processing expands. Complementary development of poultry farming and fishmeal manufacturing is conceived.

Other industries

Various consumer goods will be imported increasingly through the La Union port for distribution in the Eastern Region and partly in other regions and possibly to some limited extent in neighboring countries as well. Some consumer goods, typically bulky ones or large volume-small value goods, may start to be produced in the Eastern Region with import raw materials or intermediate goods. An example is the manufacturing of common plastic products from synthetic resins to be imported. Also, some assembly operations of bulky durable goods may be established in the Region, based on import of parts through the La Union port. Examples include refrigerator, motorcycle and some industrial machinery that have a relatively small number of parts.

(2) Strategies

These industries import raw materials mainly from the La Union port and produce for both the domestic market and the regional market of neighbouring countries. Most of then are expected to locate close to the port area. The demand for these industries would be supported by accelerated population increase and urbanization. To support the development of these industries, logistic functions related to the La Union port should be fully developed, and related transport infrastructure improved to facilitate the distribution of their products.

These industries would not locate in free zones since their target markets are mainly domestic and partly regional. As they would benefit from logistic functions of the port, however, an industrial area should be established in the port hinterland to encourage the location of these industries.

Those industries suggested above under “other industries” would not need to locate near the port. It is easier to transport the raw materials and intermediate goods to be imported through the La Union port by land than their products. Therefore, they would locate closer to major demand centers. An inland industrial estate should be established at a nodal point of the transport network to facilitate their location.

5.3 Promotion Strategies for Indigenous Industries

Strategies to promote indigenous industries (Model 3) in the Eastern Region are established. First, for all the industries/commodity groups identified in Subsection 5.1.3, broad strategies are derived in Subsection 5.3.1. Second, for most promising commodities in the Eastern Region selected in Subsection 5.1.3, more specific strategies are presented in Subsection 5.3.2.

5.3.1 Broad strategies for all the commodity groups

For all the commodity groups included in the long list, broad strategies are derived. Commodity groups promising in the short (Class I) and the medium (Class II) terms and others (Class III) are divided into 10 broad groups based on possible approaches for promotion, and strategy derived for each broad group is summarized in Table 5.7.

Specific strategies are established in the next subsection only for those commodity groups identified as most promising in the Eastern Region. They are mostly in Class I. In addition, organic coffee is selected from Class II in consideration of its unique position in the socio-economy of El Salvador and the Eastern Region. Kenaf is also added in view of its land suitability and possible linkages with other subsectors. Of the other commodity groups shown in Table 5.7, fruits and vegetables, wood products and jewelry in Class I, and construction materials in Class II may be comparatively more promising.

Table 5.7. Broad Promotion Strategies by Commodity Group

Commodity group	Promotional approach	Broad strategy
Class I		
A-25 B-10	Pilot implementation for establishing indigo industry	- Organizing all the actors to muster existing knowledge and experiences for cultivation, dye extraction, dye works, and marketing - Developing related industries - Aiming at international markets for high quality products
A-7, 8, 21, 27, 28 B-1, 2, 3, 13, 16	- Support for existing organizations - Technical extension - Invitation of local firms from the Western region	- Organizing local farmers and providing technical extension to organized farmers - Aiming at local market
A-24 B-7, 8	Cluster formation	- Organizing local actors and developing cluster/ complex based on existing activities elsewhere - Aiming at local and Central American markets as regional leaders
A-3 B-5, 6	Maximum utilization of local resources	- Improving product quality and diversifying products for increased value added - Aiming at local and export markets
Class II		
A-1, 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 18, 20 B-9, 11, 12, 14, 15	Satisfaction of increasing domestic demand for better products	- Improving product quality through association with local or foreign producers - Aiming at national market

Commodity group	Promotional approach	Broad strategy
A-6	Specialization in high quality products	- Supplying high quality products to dye works - Contributing to diversification and upgrading of textile and apparel industries
A-10, 19, 23	Specialized production using local resources	- Supplying products from 100% natural resources - Aiming at international markets in U.S., Europe and Japan
Class III		
A-17	Cluster formation	- Developing new products based on local resources - Aiming at urban market
A-22	Specialization in high quality products	- Supplying high quality products to dye works - Contributing to diversification and upgrading of textile and apparel industries
A-26	Satisfaction of increasing domestic demand for better products	- Establishing local industries based on imported materials - Supporting development of basic metal and machinery industries

Source: JICA Study Team.

5.3.2 Strategy for most promising commodities in the Eastern Region

(1) Apiculture

Existing conditions in El Salvador

There exists an apiculture cluster based in San Salvador with 600 producers from different regions of the Country, including also seven export enterprises and four packaging firms. El Salvador is the leading honey producer in Central America with respect to technology, product quality and export performance. In addition to honey, over 60 derivative products are produced consisting of health products such as vitamins and face/hand creams, and veterinary products for cattle. The cluster is supported by training programs for national producers, development programs for suppliers and consumers, production technology, and assistance programs by Cuban experts. It covers the production, processing and export of *Aloe vera* as well.

El Salvador produced 2,113 ton honey and exported 985 ton in 2001, to which the cluster contributed about 50%, respectively. The apiculture cluster sells their products mainly in the national and the Central American markets, but they also export to Europe and U.S. They sell not only loose honey, but also some 60 pharmaceutical products. El Salvador has a 1% share in the honey international market.

In the Eastern Region, honey is produced in Santiago de Maria and Tecapan in Usulutan. Producers in these areas recently produced 70 barrels of honey (about 29,000 liters). In the Eastern Region, there are many potentially useful trees and plants for apiculture.

Shortages of flowering plants constitute a constraint to apiculture development. The producers move their beehives to Guatemala to collect additional honey. To maintain their leading

position in Central America continued technological development is expected to ensure the quality and the variety of honey and derivative products. The cluster expects to develop export markets, particularly in Japan and Europe.

International market situations

The world honey production is increasing only slowly: 960,000 ton in 1991 to 1,263,000 ton in 2001 at the average annual rate of 2.8% (APISERVICES website). Large producers are China (156,000 ton in 2001), former USSR (125,000 ton), the U.S. (100,000 ton), EU (11,000 ton), Argentina (90,000 ton), Turkey (71,000 ton), and Mexico (56,000 ton). The world total export of honey was 375,000 ton in 2000 or 30% of the total production. The average export price has been consistently decreasing, from US$1,724 ton in 1996 to US$1,176/ton in 2000, reflecting increasing competition. The average export price is the lowest for China at US$845/ton and for Argentina at US$989/ton, followed by US$1,129/ton for Mexico.

Import and export prices of honey vary depending on seasons. Import prices for Germany, importing 80,000-90,000 ton honey annually in recent years, varied from US$0.49/lb (June) to 0.78/lb (December) in 2001. Import prices for the U.S., importing over 40,000 ton honey since 1991, varied from US$0.45/lb (February-April) to 0.62/lb (December) in 2001. Export price for China averaged US$0.46/lb in December 2002, and that for Mexico was US$0.54/lb in the first half and US$0.59/lb in the second half of 2001. CIF prices at European ports averaged US$1,200/ton or US$0.54/lb in 2000.

Position of El Salvador

Both production and export of honey in El Salvador has only small shares in the respective world total. El Salvador, however, has competitive advantage for honey production over the major producers in Latin America, Argentina and Mexico. The unit cost of production per beehive is reported to be US$26.5 in El Salvador, US$49.7 in Mexico, and US$51.3 in Argentina (CONAPIS). The average sales price of honey in El Salvador was US$1,160.5/ton or US$0.53/lb, comparable to the average export price in the international market. This means the profit margin is much larger for Salvadoran honey.

Strategy

1) Marketing strategy

Global competition is fierce in the honey industry. Though the Salvadoran honey industry might compete in the international market because of the quality of its products and the low production costs, it ought to pursue its own niche market. Argentina and Mexico, major competitors in Latin America, export their products in bulk mainly to the U.S., Germany and other remote markets. El Salvador should specialize in high quality products packaged for export to neighboring countries.

The world largest honey producer, China, exports its products all over the world. In Latin America, China exported 1,029 ton of honey to Mexico for the FOB price at US$0.36/lb and 20 ton of honey to Panama for the FOB price at US$0.37/lb in 2002. The FOB price for export to the U.S. was US$0.48/lb in 2002. At much higher production costs than El Salvador, Argentina can competitively export to the U.S. market. El Salvador could be more competitive than Argentina in the U.S. market, and even more so in neighboring countries.

Another strength of the Salvadoran honey industry is its ability to produce many derivative products. Neighboring countries currently importing these products from Germany, the U.S. and other advanced countries are large potential markets for Salvadoran honey derivatives, including propolis.

2) Promotion strategy for the Eastern Region
   i) Organizing suppliers in the Eastern Region to receive training from the existing cluster;
   ii) Developing local sales outlet for stable operation and adequate profits to allow expansion of production and diversification of products;
   iii) Exchanging information with local farmers planning to expand horticultural and fruit production and establishing long-lasting relationships for complementary development; and
   iv) Aiming at establishing full scale processing facilities in the Eastern Region to strengthen the cluster as the leader in Central America.

(2) Cashew

Existing conditions in El Salvador

At present, over 5,000mz is cultivated with cashew and its annual production at 55,000qq. Of this total area, some 1,500mz are devoted to organic cashew. SAMO (Agroindustrial System of Organic Cashew) in the low Lempa area of San Vicente is an NGO that has 300mz land cultivated with organic cashew. It has its own processing plant and it has been exporting shelled cashew to Europe for five years. Ex-factory prices average US$2.50/lb, while international market prices range in US$2.55-3.27/lb. Their organic cashew is certified every year by BCS of Germany. SAMO staff are trained also in processing cashew apple into juice, honey, vinegar, wine, etc.

In the Eastern Region, a cooperative of Coralama in La Union has 1,130mz cultivated with organic cashew. Due to financial difficulties, its production is low and processing machinery is in bad conditions. They sold 3,336 ton of unprocessed cashew nuts in 2002 at US$675/ton. FOB price at Acajutla was US$750/ton for export to India. There are other plantations in the Region such as Gualica (Delirio area), Chilanguera, Maquigue, San Carlos Lempa, Moncagua, Isla Tazajera, and San Juan del Gozo.

Non-organic cashew is cultivated in 3,500mz. The cashew producers' cooperative society with five member cooperatives of San Ramón, Chilanguera, Maquigua, El Platanar and Gualnea and four companies own 1,100ha supported by Canada, and the rest is planted with Brazilian trees younger than two years. The society exports to Canada through an intermediary in Guatemala without processing. The total cashew export was 583MT in 2000 for US$755,502, of which 71% was shipped to India.

Most agricultural land in El Salvador is suited to cashew cultivation. Cashew can grow successfully even in slightly saline soil along the coast. SAMO has cultivated 100mz in the coastal area of Usulutan. They plan to sell small grafted cashew trees at US$1 per tree to promote the organic cashew cultivation throughout the Country. SAMO exported 12.5ton of cashew to Europe to gain US$100,148 in 2001, and 9.5ton to rake in US$82,280 in 2002. A Japanese trading company purchases unprocessed nuts from the Coralama cooperative for processing in India and marketing in Japan.

Cashew production technology with organic fertilizer application is well established in El Salvador. Technology for processing cashew apple is also available. SAMO staff have been trained for the production of 10 cashew apple derivatives.

International market situations

The world production of cashew nuts was 1.2 million ton in 1999, of which 324,000 ton or 27% was traded (MAG FRUTALES). Major importing countries are India, the U.S., Netherlands, U.K., Germany, Japan and France (Table 5.8). The average import prices are the highest in Spain (US$2.99/lb in 1999) and Japan (US$2.92/lb), followed by Israel, U.K., Netherlands and the U.S. They are generally lower in developing countries and the lowest in India (US$0.43/lb).

The largest cashew producer is India with a 36.6% share of the world production in 1999, followed by Nigeria (14.6%), Brazil (12.8%), Tanzania (8.9%), Indonesia (5.74%), and Vietnam (3.4%), as presented in Table 5.9. Yields vary widely among producing countries. Of the major producers, Nigeria at 0.63 ton/ha and India at 0.61 ton/ha have the highest yields, and yields are much lower in Brazil (0.26 ton/ha), Indonesia (0.29 ton/ha), and Vietnam (0.22 ton/ha).

Position of El Salvador

El Salvador exported 583,202 kg of cashew in 2000 to obtain US$755,502 at the average price of US$0.58/lb. India was the most important trade partner sharing 71% of the total export amount from El Salvador. The average export price to India, however, was only US$0.37/lb, much lower than the average export price of US$2.44/lb to the U.S., the second most important partner. The average yield of cashew is more or less 0.7 ton/ha in El Salvador.

Table 5.8. Import of Cashew Nuts by Country, 1999

Country	Amount (ton)	Value (US$10^3)	Average price (US$/lb)
USA	71,565	431,335	2.72
Netherlands	19,316	117,999	2.77
UK	7,905	50,282	2.88
Germany	4,968	26,483	2.41
Japan	4,886	31,389	2.92
France	4,639	21,512	2.10
Canada	3,735	20,554	2.49
China	2,533	12,554	2.24
India	204,459	195,904	0.43
UAE	2,380	11,792	2.24
Argentine	1,910	6,320	1.50
Italy	1,866	10,068	2.44
Singapore	1,802	6,797	1.71
Israel	1,189	7,587	2.89
Spain	901	5,939	2.99
World total	324,006	1,438,515	2.01

Source: MAG, *Frutales* (original data by FAO).

Table 5.9. Production of Cashew Nuts by Country

(Unit: ton)

Country	1970-79 average	1980-89 average	1990-99 average	2000	2000 average yield (ton/ha)
India	145,115	220,957	363,496	440,000	0.61
Brazil	41,504	96,721	129,129	153,921	0.26
Nigeria	25,000	25,000	94,800	176,000	0.63
Tanzania	104,457	33,196	58,511	106,500	
Indonesia	4,223	19,377	63,880	69,027	0.29
Vietnam	3,920	8,280	53,300	41,200	0.22
Guinea-Bissau	2,650	12,450	32,482	38,000	0.40
Mozambique	156,790	44,433	40,017	35,000	
Costa de Marfil	400	3,390	18,300	28,000	0.29
Thailand	1,920	10,110	17,585	22,000	
Sri Lanka	5,037	8,098	12,600	15,000	
Senegal	-	250	3,750	15,000	
Malaysia	7,510	6,135	12,200	13,000	
Benin	729	1,374	7,650	10,000	
Others	38,330	32,815	30,219	38,910	0.15
World total	537,584	522,585	937,919	1,201,558	0.46

Source: op. cit.

Strategy

1) Marketing strategy

Cashew export from El Salvador should aim at high-end market of developed countries: Japan,

the U.S. and E.U., in view of high quality cashew produced in El Salvador and the Eastern Region. Particularly, Japan is the most promising market. The per capita import of quality cashew in Japan is only one-eighth of that in the U.S. Major competitors are India, Indonesia and Vietnam, but El Salvador has an advantage of higher yields, and thus lower production costs, about three times as high as the yields in Indonesia and Vietnam. A good portion of cashew imported by Japan from India is cashew exported from El Salvador and processed in India. By producing high quality cashew, El Salvador can export directly to Japan.

In particular, organic cashew production should be pursued aiming at the Japanese market. At present, with 1,500 m^2 devoted to organic cashew, some 700 ton can be produced. Expansion of area for organic cashew would be fully justified even for the export market to Japan alone.

2) Promotion strategy for the Eastern Region
   i) Promoting organic cashew aiming at export market to take full advantage of high quality cashew produced in El Salvador and the Eastern Region;
   ii) Supporting expansion of cashew planting and production through revival of old trees by grafting (for about 1,000mz), and producing and distributing saplings (at present for ¢1.00/tree) to farmers; and
   iii) Expanding processing capacity through utilizing existing idle plant and investing in new facilities.

(3) Organic coffee

Existing conditions in El Salvador

Cooperatives of Las Marias, San Mauricio and UPREX in Usulutan produce organic coffee. They expect to produce 2,500-3,000qq in 2002-2003, and 5,000qq in 2003-2004. Their organic coffee is certified for international marketing by OCIA of the U.S. and BCS of Germany. ADEL Morazan has a financing system to support the cultivation of organic coffee. Organic coffee production is still a small industry in El Salvador. The Ciudad de Barrios cooperative also produced organic coffee in 2002/03 for 17,900qq out of the total coffee production of 89,500qq.

The cooperatives in Usulutan export their organic coffee to Germany, Japan and the U.S. through UCRAPROBEX. They have developed their own brand “Monte Nuevo.” They intend to expand their market both domestically and internationally for specialized and gourmet coffee. They have integrated their production, grinding, packaging, and marketing, but for exporting they depend on the intermediary. They may be vulnerable to competition with large producers that dominate the coffee market.

The total export value of coffee was US$119 million in 2001. International coffee prices declined from US$185/qq in 1997 to US$85/qq in 2000. Consequently, the unit price paid to

farmers decreased from US$108/qq in 1997 to US$45/qq in 2000.

International market situations

The world coffee production reached 7 million in 2002, increased from the average 6 million in 1996-98, despite the declining international prices during this period (International Coffee Organization; ICO).

The world total export of coffee increased through 1996-2001, and declined only slightly to 5,259,000ton in 2002. International market prices of coffee decreased continuously during 1996-2002, but show a sign of recovery in 2003. The ICO composite price decreased from the average US¢115/lb in 1996-98, through US¢85.7/lb in 1999 and US¢64.3/lb in 2000, to US¢45.6/lb in 2001. It increased to US¢47.7/lb in 2002. The average price of arabica coffee ranges in US¢45-65/lb.

Sales of certified organic coffee, generally grown under more traditional shaded conditions are growing faster than any other type of specialty coffee. It represents 1-2% of the export coffee market. Certified organic coffee beans sell for 10-15% more than standard gourmet beans, fetching generally US$2-3/kg or US$0.90-1.35/lb.

Position of El Salvador

Coffee production in El Salvador is declining since 1999. In 2001, it produced 2,090,900qq or 96,200ton of coffee. Coffee yields are low in El Salvador, reflecting the dominance of more traditional production under shade trees. Due to the decline in international coffee prices, coffee producers in Central America suffer losses (Table 5.10).

Of the total coffee production in El Salvador, strictly high grown coffee represents 20% (CEPAL). During 1998-2000, strictly high grown coffee accounted for 32% of the total coffee export from El Salvador. Export of gourmet and organic coffee from El Salvador accounted for 1.1% during the same period.

Table 5.10. Profitability of Coffee Production in Central American Countries

Country	Production costs (US$/ha)	Coffee yield (qq/ha)	Unit production cost (US$/qq)	Price paid to producers (US$/qq)	Loss to producers (US$/qq)
Costa Rica	2,748	31.8	86	57	-29
El Salvador	825	14.4	57	45	-12
Guatemala	1,466	19.8	74	51	-23
Honduras	879	14.3	62	37	-25
Nicaragua	1,164	16.7	70	43	-27

Source: CEPAL.

Strategy

1) Marketing strategy

Although the international market prices of coffee are picking up recently, coffee production in El Salvador and other countries still faces difficulty. There are generally two main directions to pursue to restore the viability of coffee industry. One is to pursue alternative marketing, including "fair trade", to reduce commissions and other intermediate changes to ensure adequate profit (Table 5.11). The other is to produce gourmet or organic coffee for higher prices.

Table 5.11. Comparison of Cost Structure by Alternative Marketing Channels

	Marketing	
	Conventional	Alternative
CIF price in New York	60.00	60.00
Transport & insurance	3.00	0.00
Quota paid to CSC & PROCAFE	0.85	0.85
FOB price	56.15	59.15
Quality discount	7.20	3.00 (5%)
Processing	23.00	3.00
Gross price	25.95	53.15
Contribution to "emergency fund" for coffee	5.00	5.00
Interest	0.50	0.70
Price paid to producers	20.45	47.45

Source: Distribuido por los pirineos S.A. de C.V.

To take advantage of large remaining area under traditional shaded production system, El Salvador should specialize in gourmet and organic coffee production. As it takes several years to establish such a system elsewhere, El Salvador can enjoy advantage for some time even if certification for organic coffee takes a few years. During this period, El Salvador should be able to establish international fame for high quality organic coffee of its own with original brands.

At the same time, small coffee farmers should produce low cost coffee of good quality for blending. For this purpose, small coffee farmers should be organized to establish their own processing facilities to reduce costs.

2) Promotion strategy for the Eastern Region

   i) Promoting organic coffee particularly in high elevation areas for high quality products aiming at export market;

   ii) Supporting the expansion of high elevation coffee under the shade tree system as part of a reforestation program to help coffee growers suffering from low prices;

   iii) Establishing sales channels to chain coffee shops in developed countries; and

   iv) Establishing and promoting Salvadoran brands of coffee.

(4) Dairy products

Existing conditions in El Salvador

Milk production in El Salvador was 386,760,000 liters in 2000, of which 45% was produced in the Eastern Region. This production, however, is small compared to the milk powder import of 23,739,740kg in the same year. Of the total cattle population estimated at 805,000, cows account for 358,650 or 44.5%, of which only 175,000 produce milk.

In the Eastern Region, ADEL Morazan manages six cattle farmer cooperatives with 300 cattle raising members. Of the total cattle, 50% are cows. Other producers in the Region are those of San Miguel and Anamoros.

Milk and dairy products supplied by firms in San Salvador are marketed in the Eastern Region, together with products from Honduras and Nicaragua. Some of the latter come illegally from "blind points" along the border. There is a tradition in the Region to sell fresh milk at doorsteps (*ventas de zaguan*) or on the street.

Competition with products smuggled from Honduras and Nicaragua constrains the development of this subsector industry, undermining its economic viability. The three groups of cattle raisers in the Eastern Region envision the establishment of a dairy plant. The investment cost of initial development to process 30,000ℓ of milk daily would be US$2 million. They consider that they will be able to collect additional milk in Honduras and Nicaragua. They foresee their potential markets in Central America and the U.S., particularly for Salvadorans there. They expect the technical support from MAG, particularly for veterinarian services and further breed improvement.

Import/export markets for El Salvador

El Salvador imports various dairy products from Latin America, EU, North America and Oceania, while the Country imports liquid milk almost exclusively from Costa Rica and Honduras. These two countries are only countries in Central America producing more milk per capita than in El Salvador (Table 5.12).

Table 5.12. Milk Production in Central American Countries

Country	Prod. in 2001 (ton)	Per capita prod. (ton)
Belize	7,200	30
Costa Rica	730,000	183
El Salvador	400,814	67
Guatemala	320,000	29
Honduras	593,766	99
Nicaragua	230,636	46
Panama	170,646	57

Source: FAO.

El Salvador imported 8,058ton of cheese and its products in 2001, paying US$23.1 million, at the average import price of US$2.87/kg. The average import prices vary widely among supplier countries. It is by far the highest for Switzerland at US$7.07/kg, followed by Spain at US$5.85/kg and Denmark at US$4.91/kg. The average import prices from neighbouring countries range from US$3.49/kg for Panama and US$3.19/kg for Guatemala to US$1.97/kg for Costa Rica. Import prices from Honduras and Nicaragua, respectively US$2.52/kg and US$2.70/kg, are comparable to the average retail price in the domestic market.

Comparative prices of cheese and its products for import from Honduras and Nicaragua and in the domestic market indicate that the dairy industry in El Salvador under protection by high tariffs has price competitiveness against these countries in the domestic market. According to MAG, dairy farmers in El Salvador receive on the average US$0.25/ℓ for their milk, the largest in Central America.

Strategy

1) Marketing strategy

The competitive advantage in the domestic market of the dairy industry in El Salvador has been undermined by dairy products imported illegally from Honduras and Nicaragua, and the Eastern Region, the main dairy region in the Country, suffers the most from this situation. As the import tariff would be reduced in line with the CAFTA, dairy production costs need to be reduced by enhancing productivity and reducing production costs, mainly of feed. At the same time, high quality products should be produced for export aiming at niche markets. In particular, overseas Salvadorans communities especially in the western coast of the U.S. constitute the most promising market. For processed cheese products, price variance could be very large as manifested by cheese import prices from different countries.

2) Promotion strategy for the Eastern Region

   i) Organizing dairy framers and integrating them with other related farmers and organizations, including grains producers and importers, feed traders, veterinary services providers, disease control and insemination facilities;

   ii) Establishing a dairy plant for cheese through a joint venture with foreign investor aiming at export market, including overseas Salvadorans; and

   iii) Promoting milk supply to students with a government subsidy to improve nutrition, to give students an incentive to pursue education, and to boost dairy farming.

(5) Sugar and its derivatives

Existing conditions in El Salvador

El Salvador is the second largest producer of sugar in Central America although far behind the

top producer, Guatemala. El Salvador exports 22% of its sugar production mainly to the U.S. under the quota system, while Guatemala exports 40% of its production. The Salvadoran export declined significantly since its peak in 1982/83. The Salvadoran sugar export contributed to the income of US$44 million in 2002. Despite the recent decline, the sugar industry contributes to 1.4% of the total employment, including sugarcane producers and managers, employees in processing industries, and those involved in the transport of cane and sugar, and 2.7% of the total value-added in the Country.

In 2001/02, the total sugar production was 492,873 ton by 10 sugar plants, consisting of 60% raw sugar and 40% refined sugar. The total production of molasses was 153.9 million liters in 2001/02. Molasses is used to produce liquor (29.6 million liters) such as vodka and rums and also ethanol (25.8 million liters).

In the Eastern Region, there is only one sugar mill in San Miguel. A cooperative at La Carrera cultivates sugarcane for 1,730mz.

International market situations

The world sugar production is increasing only slowly: from 115 million ton in 1992 to 143 million ton in 2003 at the average annual rate of 2.2% (FAO). Production is becoming more concentrated among countries, and by 2001 the top 10 producers accounted for 70% of the total production. International trade in sugar and its products has contracted recently. This is due to increased production in countries where sugar export is heavily subsidized, discouraging other exporters. The proportion of production exported has also declined. Export value decreased from US$9.8 billion in 1980 to US$6.4 billion in 2001.

Sugar markets are significantly distorted due to government intervention of several producing and importing countries. Domestic market prices are higher than US$0.50/kg in EU and higher than US$0.40/kg in the U.S., while the international market price fluctuates around US$0.20/kg since 1990. As sugar trade distortions are reduced slowly under the free trade regime, only most efficient, low-cost sugarcane producers will increase their export such as Brazil, Guatemala and Colombia.

Position of El Salvador

Although El Salvador is the second largest producer of sugar in Central America, the production quantity and export are insignificant even in the Latin American context. Its sugar exports is mainly to the U.S. under the quota system, and no significant expansion is expected. As the distortions in sugar markets are reduced under free trade agreement, El Salvador can probably maintain its export market. Production of sugar byproducts would help to maintain the overall competitiveness of the sugar industry in El Salvador.

Strategy

1) Marketing strategy

Under the presently distorted and highly uncertain market conditions, the sugar industry in El Salvador needs to be made more robust to changing conditions. Together with the modernization of sugar manufacturing for more efficient, low-cost production, processing of molasses and bagasse should be further increased. Processed goods such as liquor and ethanol from molasses would be marketed domestically or at most in the Central American market. Bagasse may be supplied to domestic processors for power generation and possibly non-tree paper manufacturing in the future.

2) Promotion strategy for the Eastern Region

   i) Modernizing the existing sugar factory in the Eastern Region to increase sugar yield and to improve the quality;

   ii) Conducting a pre-feasibility study for complete cycle processing of sugarcane to fully utilize processing opportunities for sugar into confectionary, molasses into liquor and ethanol, and bagasse; and

   iii) Developing confectionary products aiming at domestic and Central American markets.

(6) Poultry

Existing conditions in El Salvador

Of the poultry population in El Salvador, some 3.85 million are domestic birds (chicken, turkey, duck, hen, and cock) and 12.82 million commercial birds as of 1999 (MAG). Some 1,000 companies/producers participate in the aviculture association of El Salvador (AVES), of which over 85% are small and microproducers. Chicken meat production increased rapidly from 33,000 ton in 1990 to 48,000 ton in 1998 and 73,000 ton in 2001. The supply of eggs in El Salvador is abundant, and many are exported to Honduras. The domestic production of eggs was over 1.1 billion in 2001.

There are nine major commercial producers specialized in chicken, eggs, powder bred chicken, and sausages. A few of them have dominant market shares. Pasteurized eggs are distributed to the national market and also exported across Central America. Large producers have their own system of production, processing and sales and undertake sales directly using their trucks. They are also linked to major restaurant chains. The aviculture industry concentrates in the Western region for the ease of import feed transportation from Acajutla.

Import/export markets in Central America

According to FEDAVICAC, Central American countries, with the chicken population of 17.6 million, produced 338,000 ton of chicken meat and 4.9 million eggs in 1998 (Table 5.13). The

share of Central America in the world's chicken meat production is less than 1%. Between 1996 and 1998, Central American countries imported processed products of chicken meat worth a total of US$51.7 million and eggs worth US$26.3 million (Table 5.14). Guatemala is the largest importer of chicken meat products, followed by Honduras. Honduras is also the largest importer of eggs, while El Salvador is a net exporter of eggs exporting mainly to Honduras. El Salvador also exports chicken meat products mainly to Guatemala and Honduras. The total export value of Salvadoran aviculture products fluctuates in recent years; it increased from US$9.9 million in 1996 to US$17.5 million in 1998, decreased in 1999, reached a peak of US$20.7 million in 2000, and decreased to US$11.4 million in 2001 (SIECA and MAG).

Table 5.13. Chicken Meat Production in Central America and Major Producers

(Unit: 10^3ton)

	El Salvador	Costa Rica	Guatemala	Honduras	Nicaragua	Panama	Subtotal	Mexico	USA	Brazil	China
1990	33	43	67	28	7	25	203	750	8,667	2,356	2,583
Share (%)	0.1	0.1	0.2	0.1	0.0	0.1	0.6	2.1	24.5	6.7	7.3
1998	48	80	120	54	36	48	386	1,558	12,724	4,490	7,700
Share (%)	0.1	0.2	0.2	0.1	0.1	0.1	1.0	3.0	24.8	8.8	15.1

Sources: MAG, INCAE (Costa Rica) and FEDAVICAC.

Table 5.14. Import of Chicken Meat Products and Eggs by Central American Countries

(1) Chicken meat products (Unit: US10^6)

Products	El Salvador	Costa Rica	Guatemala	Honduras	Nicaragua	Total
Meat entrails	1.9	0.4	22.8	9.7	2.8	37. 6
Frozen chicken	0.2	0.0	2.1	0.4	0.2	2.9
Chicken breast	0.1	-	1.5	0.0	-	1.6
Others	3.3	-	2.4	2.7	1.2	9.6
Total	5.5	0.4	28.8	12.8	4.2	51.7

(2) Eggs

From \ To	El Salvador	Costa Rica	Guatemala	Honduras	Nicaragua	Total
El Salvador	-	0.3	0.3	20.7	0.6	21.9
Costa Rica	0.5	-	0.0	-	0.7	1.2
Guatemala	1.3	0.3	-	1.0	-	2.7
Honduras	0.1	-	-	-	0.2	0.3
Nicaragua	-	-	-	0.2	-	0.2
USA	1.0	2.1	0.9	1.8	10.9	16.8
Total	3.7	3.1	1.5	24.3	14.5	47.0
Panama	0.7	0.3	0.0	0.5	1.9	3.5
Others	0.1	0.0	0.2	0.0	0.2	0.5

Sources: SIECA and MAG.

Cost performance of aviculture in El Salvador

The structure of production costs for aviculture is compared between El Salvador and main producing countries (Table 5.15). A very large share of feed cost characterizes the cost

structure of aviculture in El Salvador. Other costs in El Salvador are comparable to those in most efficient producers such as the U.S., Brazil and China. The total production cost is US¢47.5/lb in El Salvador, significantly higher than US¢23.0/lb in Brazil, US¢25.7/lb in the U.S., and US¢34.2/lb in China. The average retail price is US¢69.7/lb in El Salvador with much smaller profit margin than in these three countries.

Table 5.15. Comparison of Aviculture Production Costs

(Units: US¢/lb)

Cost element	USA	Brazil	China	El Salvador	Netherlands	Japan	Russia
Feeds	16.0	13.6	26.2	38.2	30.3	43.0	58.6
Chicken starters	3.8	6.4	2.0	4.9	9.3	12.4	8.4
Manpower	3.6	2.0	1.0	2.4	4.1	4.3	3.3
Others	2.3	1.0	5.0	2.0	5.2	21.0	13.4
Total cost	25.7	23.0	34.2	47.5	48.9	80.7	83.7
Retail price	55.8	42.6	60.3	69.7	88.0	147.9	120.2

Source: MAG.

Strategy

1) Marketing strategy

The aviculture industry in El Salvador has competitive advantage in the Central American market as manifested by the export performance in recent years. It suffers, however, from high feed costs. In fact, if the feed costs become comparable to those in most efficient producers of the U.S. and Brazil, the Salvadoran aviculture may be competitive in the larger international market. With the CAFTA, the aviculture in El Salvador would face severe competition against import from the U.S., but feed costs would also be reduced. It would be most essential for the Salvadoran aviculture to maintain its competitive advantage in the Central American market. For this, the Eastern Region may hold a key as it will have advantages of importing feed from the La Union port and also proximity to Honduran and Nicaraguan markets.

2) Promotion strategy

i) Promoting feed import from Nicaragua, and also through the La Union port after 2007;

ii) Establishing fishmeal plants in the Eastern Region using currently wasted fish;

iii) Organizing small and micro producers; and

iv) Providing technical assistance through organized producers for breed improvement and adequate feeding.

(7) Indigo and dye works

Existing conditions in El Salvador

The Indigo Producers' Association of El Salvador (AZULES), formed in 2000, is based in San Salvador. In the Eastern Region, ADEL Morazan manages a cooperative of indigo producers,

consisting of 32 members in Arambala, Jocoaitique and Rosario. The cooperative members cultivate indigo on their own land and process it, with the technical assistance of GTZ. They sold 600kg of indigo dye at $22/kg in 2002. In Usulutan, cooperatives of Las Marinas and San Mauricio are seeking technical support for indigo cultivation. The total production of crystallized indigo was about 1,000kg in 2003. The total cultivation area was 18,000mz but only a small portion of the area was used to extract indigo dye.

In 2003, MAG supported 200 indigo producers in nine municipalities of Cabañas. They expected to produce 80lbs/mz annually in two crops and to obtain a profit of $571.4/mz.

The Association has exported indigo dye to Switzerland, Germany and France. The Interamerican Institute for Agricultural Cooperation (IICA) controls the quality of indigo through its laboratory. Some indigo producers in the Central and the Western regions and ADEL Morazán produce textiles dyed with indigo in a small scale.

In addition to the three countries mentioned above, Japan, the U.S., and the Netherlands are potential markets. Indigo dye is priced at US$40/kg in the international market. At present, only indigo powder is exported, and no textile dyed with indigo. ADEL Morazan sold indigo at $22/kg to national wholesalers, who later export it to Europe. UCRAPROBEX is a national intermediary for export. As indigo production has started to revive only recently, production is still small and scattered. Producers are not linked with related business and markets yet.

Market situations

Comprehensive data on the production and export of indigo dye and dyed products are not available as they are still quite limited. While EU has recently introduced bans on synthetic dyes, the international market is still dominated by synthetic indigo and other dyes.

Typical prices of indigo dye in the domestic market in Japan, a major consumer of the product in the world, have been obtained from a dye shop. Synthetic indigo is sold at US$65/kg for a 500g package and US$125/kg for a 50g package. Natural Indian indigo is sold at US$27/kg for 1kg liquid, US$255/kg for 500g powder and US$273/kg for 100g powder.

Indigo dye is generally priced at US$40/kg in the international market for the standard quality product of 45% indigotin content. Usually, a premium of US$0.85/kg is added to each additional percentage point of indigotin content. Consequently, the export prices of indigo dye products range between US$40-53/kg.

Position of El Salvador

El Salvador has a long history of cultivating and processing indigo, and the indigo industry once played a very important role in the economic development of the Country. Indigo produced in El Salvador is known for its high quality due to the favorable climatic conditions. Indigo production in the Country has been expanding rapidly since the formation of AZULES.

It increased from 100kg in 2000 to 600kg in 2001, and the estimated production in 2002 was 1,800kg.

The export prices of Salvadoran indigo generally range from US$30/kg to US$50/kg. These are lower than even the domestic market prices of synthetic indigo in Japan. In 2002, El Salvador exported 600kg of indigo dye, of which 400kg were directed to Germany.

The indigo cultivation in the Eastern Region yields on the average 18kg/mz of indigo dye per harvest or 79kg/ha for two harvests per year. At the ongoing sales prices of US$22/kg, the gross production value is US$1,738/ha (ADEL-Morazan). With the data in Cabañas, the profit margin is calculated to be US$15.8/kg or US$1,253/ha.

Strategy

1) Marketing strategy

Indigo dye production appears to be quite profitable in terms of the profit rate as indicated above. This is due to the low production cost. On the other hand, the domestic sales price is quite low, compared to the export price. To ensure the export quality of the product, the production cost may increase. In view of inherent high quality of the raw material, indigo dye production in El Salvador should aim at the export quality product.

Production of indigo dye products is still very limited in El Salvador. The market for these products is rapidly expanding, however. Price data on some of these products have been obtained through the Internet as shown below.

Product	Prices (US$/piece)	Weight (g)
Jeans	135-270*	700
T-shirt	36-54	180
Long-sleeve men's shirt	72-81	n.a.
Bandana	27	20
Shoulder bag	53	n.a.

* By specialty jeans manufacturers in Japan

To dye a T-shirt weighing 180g, 30g of indigo powder is required. The following simple calculation shows high profitability of indigo dyed T-shirts.

Sales per 1kg of indigo powder
- No. of T-shirts dyed: 33
- Price of T-shirt: US$45
- Total sales value: US$1,485

Production costs
- Indigo powder: US$40
- Material: US$165 (US$5/shirt)

Labor: US$33 (US$30/day for 30 shirts)
Transportation: US$165 (US$5/shirt)
Overhead: US$81 (20% of the above)
Profit before tax: US$1,001

The profit margin for indigo dyed products is much larger than that for indigo dye, by an order of magnitude on the unit indigo dye basis. Clearly, this represents a major opportunity for the indigo industry in El Salvador, especially in view of the established textile and clothing industry in the Country. A prerequisite, however, is to produce high quality indigo dye.

2) Promotion strategy in the Eastern Region
   i) Expanding the pilot project through participation of all the actors, including farmers, dye producers, dye workers, designers, marketing agents, researchers, etc.;
   ii) Establishing and promulgating the basic policy to promote Salvadoran indigo and indigo culture;
   iii) Supporting products development for diversified products ranging from handicraft to high value clothing; and
   iv) Undertaking vigorous marketing for both dye and indigo dyed products.

(8) Kenaf

Existing conditions in El Salvador

Kenaf cultivation in El Salvador has a long history, although it has never become a major industry. At present, kenaf cultivation area is estimated at some 1,500ha, situated mainly in the Eastern Region. In Chapeltique, at the elevation of 290m, kenaf is produced by some 800 farmers for 20,000-30,000qq/year and processed into gunny bags. Another factory in Moncagua is supplied from a 400ha farm. Both factories, however, import additional raw materials from Brazil. They would face difficulties once 50% duties on import gunny bags end in three years, and they are seeking to diversity their products into carpet and handicraft manufacturing. Export of kenaf fibers, on the other hand, faces severe competition with jute from Bangladesh.

A feasibility study was carried out for kenaf pulp manufacturing based on kenaf cultivation in 10,000ha and a pulp mill in Usulutan on the Lempa river (JETRO, 2002). It was found that with the initial investment cost of US$73million, the pulp mill would be only marginally profitable if the products were to be exported to Japan. It may become viable if the product is supplied to a paper mill nearby, preferably also in Usulutan, to reduce transportation and head office costs. Other possibilities include the use of other waste materials to mix with kenaf to reduce raw materials costs and the smaller capacity without sacrificing product quality while ensuring environmental standards.

Another study has examined the possibility of producing kenaf fibers for export (BEC, 2003). Investment costs for machinery are US$900,000 for crop cultivation in 1,000ha and US$1,150,000 for fiber extraction at 10ton/ha. Export prices are assumed to be US$500/ton for long fiber (bark) and US$170/ton for short fiber (cure) for an average of US$300/ton. Internal rate of return is calculated to be 30-36% for 10 years operation.

International market situations

In trade statistics, kenaf is usually treated together with other fibers, except cotton, as jute and allied fibers (JAF). The world production of JAF is generally declining in recent years from the peak production of 3.86 million ton in 1997/98 to 2.95 million ton in 2001/02. Kenaf and allied fibers production decreased also from 0.82 million ton in 1997/98 to 0.45 million ton in 2001/02. JAF production is dominated by jute produced in India and Bangladesh accounting for 91% of the world production in 2001/02 (83% in 1997/98). JAF production in Latin America is dominated by kenaf in Brazil, Cuba and Peru.

Of the world production of JAF, 1,032,000ton in 2000, about two-thirds, 678,400ton in 2000/01, are exported as products rather than fibers. Jute export is mostly by Bangladesh, Myanmar and Nepal. Kenaf and allied fibers are exported only by China and Thailand. Developed countries import some 60% of the total import of JAF products, and small portion (11-12% in 1997-2000) of the total import of raw JAF. JAF yields vary widely among producing countries. In 2001/02, the average kenaf yield was 2.72ton/ha in China and 1.60ton/ha in Thailand, and the average jute yield was 1.89ton/ha in Bangladesh and 0.90ton/ha in Myanmar. India and Nepal produced both jute and a much smaller amount of kenaf and allied fibers with the average yield of 1.84ton/ha and 1.24ton/ha, respectively.

JAF prices are generally declining in recent years. Particularly, jute export price (FOB Mogla) decreased from over US$500/ton in 1996 to the lowest of US$250/ton during 1998-99. It has recovered slightly thereafter.

Position of El Salvador

El Salvador imports small amount of JAF fibers, some 400,000ton annually in 1997-2000. Mainly kenaf is produced in El Salvador, and yields are generally high. The recent study for kenaf fiber export assumed the export price of kenaf fiber at US$300/ton, but the jute export price has been lower than US$300/ton most of the time since 1998.

Strategy

1) Marketing strategy

Although kenaf production in El Salvador is small, it has a long history and production technology is well established and yields are among the highest in the world. That is, El Salvador has competitive advantage for kenaf fiber production. While the export of kenaf

fibers faces severe competition with jute fiber from Bangladesh in general, the kenaf industry in El Salvador can survive even at much lower prices of fibers than the current export price of the Bangladesh jute, if processing is well established. The kenaf industry in El Salvador should be established aiming at promising future markets for kenaf reinforced composites, particleboard, geo-textile and other industrial products as well as non-tree pulp and paper

2) Promotion strategy for the Eastern Region
   i) Undertaking kenaf fiber production initially aiming at export to the U.S. and Europe (e.g., Germany) where products development is more advanced;
   ii) Diversifying kenaf products including not only carpet, handicraft, fiber mats and other domestic products but also light construction materials through R&D; and
   iii) Seeking partnership with foreign investors for either pulp and paper mill or light construction materials, depending on market conditions that may evolve in the coming decade.

5.4 Promotion Strategies for Textile and Apparel Industries

This section is devoted to the most important industries in El Salvador: textiles and apparel. While they are well established, particularly in free zones as the maquila industry, they are at a transition phase in relation to CAFTA and WTO as described in Subsection 4.1.4. The existing conditions and prospects of these industries are examined in Subsection 5.4.1 and the strategies to promote them are presented in Subsection 5.4.2.

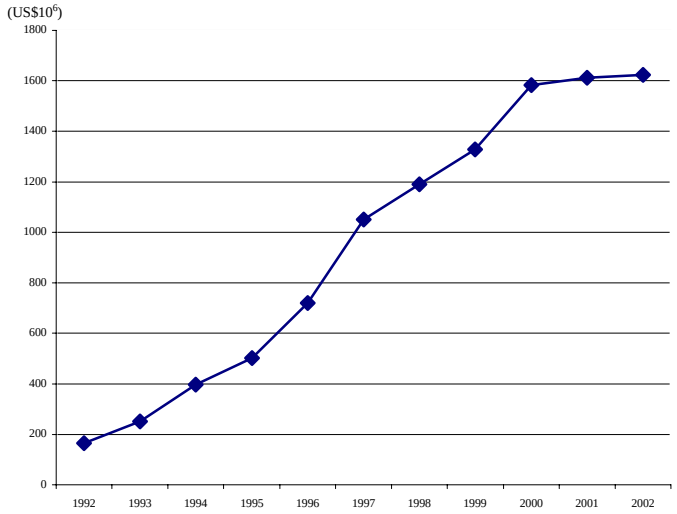
5.4.1 Existing conditions and prospects of textile and apparel industries

(1) Growth performance

The textile industry has been the most important subsector of the manufacturing industry in El Salvador since the 1950's. Decreasing export tariffs and tax stimulated the cut and sew industry (apparel industry) directed to the U.S. market. The textile industry, however, did not grow much during the civil war and did not recover until the Peace Accord. After that, companies started to replace inefficient machinery and tools for better efficiency.

Since 1995, textile and apparel have grown as the maquila industry. They generated US$489 millions of income in 2001. The average growth of total maquila export reached 12% annually during 1995-2000, although the export decreased by 2.6% in 2001. The growth of the apparel export to the U.S. has been tapering off in recent years (Figure 5.1).

Figure 5.1. Growth of Apparel Export from El Salvador to the U.S., 1992-2002



Source: Office of Textile and Apparel (OTEXA), 2003.

(2) Companies

There are about 260 operating companies in these subsectors consisting of 179 apparel, 15 textile and 66 accessories and service companies. There is a concentration of apparel companies in San Salvador, mainly in the Ilopango and Soyapango areas. La Libertad is the second most important location. The textile and apparel industries are concentrated in a radius of 20 to 30km outside San Salvador. The industries offer a total of 87,030 jobs. The apparel subsector employs 81,631 workers while the textile subsector employs 2,752 and the accessory subsector 2,647. There are two large companies with American capital located in La Libertad generating 10,018 jobs. However, 65% of the apparel subsector's capital originates in local sources, followed by the U.S. and Asian ones (as of March 2003).

(3) Performance

The five main product categories, which cover 65.5% of the total apparel export to the U.S., are women's underwear, cotton T-shirts, knit blouses, hosiery, and trousers. Many apparel companies are registered under the program 807-A of the CBPTA. In the program, apparel is assembled in El Salvador using fabrics that are produced from the U.S. yarns and cut in the U.S. This means that Salvadoran apparel companies provide only sewing services to cut fabrics owned by the U.S. companies. Under the program 809, apparel is cut and assembled in El Salvador using fabrics produced from yarns and threads made in the U.S. Apparel production under these two CBPTA programs account for 70% to 80% of maquila export in El Salvador. Therefore, the value added of this industry is still very limited despite the fact that apparel accessories and services companies, which provide labels, fasteners, embroideries, and washing services, are now operating in the Country. CBPTA provisions are summarized in Table 5.16.

Table 5.16. CBPTA Provisions for Textile and Apparel Industries

Description of Provision	Yarn	Thread	Fabric	Cutting	Assembly
Apparel assembled from U.S. formed and cut fabric from U.S. yarn. (807-A+)	US*		US	US	CBI
Apparel assembled and further processed from U.S. formed and cut fabric from U.S. yarn. (807-A+)	US*		US	US	CBI
Apparel cut and assembled from U.S. fabric from U.S. yarn and thread (809)	US*	US	US	CBI	CBI
Apparel knit-to-shape from U.S. yarn and knit apparel cut and assembled from regional or U.S. fabric from U.S. yarn. (Tariff Rate Quota)	US		CBI	CBI	CBI
Knitted or crocheted apparel cut and assembled form U.S. fabric from U.S. yarn and thread. (809)	US	US	US	CBI	CBI
Non-underwear T-shirts made of regional fabric from U.S. yarn (Tariff Rate Quota)	US		CBI	CBI	CBI

* Nylon filament yarn (other than elastomeric yarn) from Canada, Mexico and Israel may qualify.
Source: OTEXA.

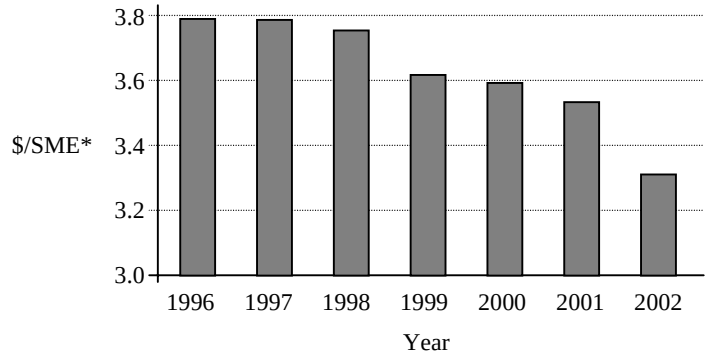
Apparel industries in the Central American region launched the Full Package Summit in July 2003. This event aimed to integrate the Central American textile, apparel and accessories sectors through shifting to “full package” (manufacturing textile to apparel) production systems for the region as a whole. The change will not only imply higher value added to the production of the region but also assure higher competitiveness of the entire textile and apparel industries. Without improving their competitiveness, the industries in the region will have difficulty competing with China in the future. However, at present, the textile subsector lacks capacity to provide sufficient materials to the apparel subsector. The industries expect that CAFTA will give more flexibility to the rule of origin, favoring the transition to full package production systems. More specifically, the industries are seeking the rule known as "cumulation," under which fibers, yarns and fabrics are defined as qualifying inputs from other countries that are either their free-trade partners or under preferential agreements with them or the U.S. That is, apparel companies in El Salvador could use materials from any country that has free-trade deals with the U.S. or Central American countries and still have the benefit of duty-free entry into the U.S. with finished products.

(4) Prospects

For the past few years, the prices of textile and apparel products for export to the U.S. have been declining (Figure 5.2). One reason is that the rapid growth in Asian export, especially from China, has forced to bring down prices. It is difficult for textile and apparel companies in El Salvador to compete with China in price and quality. One strategy for the textile and apparel industries in El Salvador to stay in competition is to adopt quick response (QR), small lot production taking advantage of its proximity to the U.S. market. To put this strategy into effect, it is important to have a supply chain inside the region; otherwise it would take too much time to purchase raw materials from the U.S. or elsewhere. On the other hand, continuous effort to

reduce production costs is necessary at the same time.

Figure 5.2. Price Trend of Textile and Apparel Export to the U.S.



* SME: square meter equivalent
Source: OTEXA.

5.4.2 Strategies to promote textile and apparel industries

One essential condition for the development of textile and apparel industries is to expand the capacity of the textile subsector in the Country by inviting textile companies that can produce sufficient amount of major fabrics such as circular knitted fabrics, tricot and denim. To compete with Asian exporters, innovative production systems such as lean production, kaizen, QCC, and six sigma need to be introduced to reduce production costs and production lead-time. The industries are advised to use the proposed diagnosis program (Subsection 9.3.6).

The markets and customers need to be diversified with different product lines and original designs. It is important to foster young local designers. Apparel companies should learn and apply the concept of design development as part of their marketing processes.

Once all the necessary businesses to serve in full package operation are identified, an agency or a broker should organize them. It is important to develop “agency business” with functions of merchandises distribution (control supply chain), collection and distribution of market and fashion trend information, and organizing and coordinating of different actors for particular customers and for collaboration among them.

Chapter 6 DEVELOPMENT FRAMEWORKS FOR EL SALVADOR AND THE EASTERN REGION

6.1 Socioeconomic Framework for El Salvador and the Eastern Region Development

A socioeconomic framework for the Eastern Region development specifies the expected level of the development in the target year of 2019 by a set of socioeconomic indices projected in a mutually consistent way. As a prerequisite, the national context is clarified with respect to the economy and population based on existing works. As reliable macro data at department or regional level are limited, the socioeconomic framework for the Eastern Region development is worked out referring to the projected national framework. The base year is taken to be the year 2000, for which more consistent data are available.

6.1.1 National socioeconomic framework

(1) Existing conditions

Population and employment

The total national population was 6,272,353 at the 2000 census. The percentage of population in the age group 15-64 years or the labor force coefficient was 59%, and the labor participation ratio 75% to make the total labor force 2,780,000.

The industrial sector employed 658,000, including both formal and informal employment, or 24.6% of the total employment, 2,680,000. Employment in the other broad sectors is estimated at 1,247,000 or 46.5% in services and 775,000 or 28.9% in agriculture.

The population increased from 5,668,600 in 1995, at the average annual rate of 2.04% through 2000. The crude birth rate is reported to be 27.5 per 1,000, and the crude death rate 6.0 per 1,000 (DIGESTYC). Comparison with the observed population increase indicates net outmigration of over 6,000 people annually.

GDP and labor productivity

The gross domestic product of El Salvador was US$13,139 million in 2000. It consists of 10.1% agriculture, 30.2% industry and 59.6% services. The per capita GDP in 2000 is calculated at US$2,088. The value-added per employee or total factor labor productivity by sector is calculated to be approximately US$1,700 for agriculture, US$6,000 for industry and US$6,300 for services.

(2) Projections

Population

Both birth and death rates will decrease in coming decades. According to the PNODT study, the crude birth rate may decrease to 21 per 1,000 over two decades. The crude death rate may decrease at most to 5 per 1,000 in the same period. Assuming zero net outmigration to be

attained, the rate of population increase may become 1.6% per annum by 2019. The population in El Salvador may thus increase to some 8,500,000 by 2019 at the average annual rate of 1.7%. This rate is slightly higher than the rate adopted by the official projection, 1.55% per annum during 2000-2020 (DIGESTYC, *Proyección de la Población en El Salvador 2025*, 1995). The latter projected the population of 6,276,000 in 2000 to increase to 8,533,700 in 2020.

GDP

The PNODT study projected the GDP to increase from US$13,139 million in 2000 to US$22,413 million in 2015 at the average annual rate of 3.62%, accelerating from 2.82% per annum over 2000-05 to 3.89% per annum over 2010-15. The growth rate reaches 4.27% in the last year. Over the extended period up to the year 2019, the annual average growth may attain more or less 4.0% per annum. Thus the GDP in 2019 may be US$27,700 million. The per capita GDP in 2019 is calculated to be US$3,260, comparable to the present levels in Panama and Belize.

Consistency

To check the consistency of the population and the GDP projections, plausible sector-wise projections are worked out under a set of assumptions. The agricultural GDP may increase only at a modest rate, e.g., 1.8%, per annum during 2000-19. The labor productivity in agriculture is expected to increase at the same rate to attain higher production without increasing the rural population. The labor productivity in industry and services may increase at a higher rate, and 2.0% per annum is assumed.

A set of projections consistent with the GDP projection is shown in Table 6.1. As shown, the industry and the services GDP are projected to increase at 4.5% and 4.1% per annum, respectively to attain the overall GDP growth at 4.0% per annum as projected above. The economic structure will change with 6.5% for agriculture, 33.2% for industry and 60.3% for services in 2019.

Table 6.1. Projections of GDP and Employment by Sector, 2000-2019

	GDP (US$10^6)		Growth rate (% p.a.)	Labor productivity ($/cap)		Employment (10^3)	
	2000	2019	2000-19	2000	2019	2000	2019
Agriculture	1,300	1,800	1.8	1,700	2,400	775	750
Industry	4,000	9,200	4.5	6,000	8,700	658	1,060
Services	7,800	16,700	4.1	6,300	9,200	1,247	1,820
Total	13,100	27,700	4.0	-	-	2,680	3,630

Source: JICA Study Team.

The total employment will be 3,630,000 in 2019, consisting of 20.7% agriculture, 29.2% industry, and 50.1% services. The labor force coefficient will increase as younger people enter

the labor market, and 65% is assumed, consistent with the official population projection. The labor participation ratio may increase or decrease depending on various factors. In general, however, it tends to decrease as urbanization proceeds and more people pursue higher education. Thus, 66% is assumed for the year 2019. By applying these ratios, the total employment is converted to the population of 8,500,00, more or less, consistent with the macro projection above.

6.1.2 Socioeconomic framework for the Eastern Region development

(1) Existing conditions

Population and employment

The population in the Eastern Region was 1,281,428 at the 2000 census. The labor force coefficient is smaller in the Region due to job seeking outmigration, and the labor participation ratio in the Region is assumed at the similar level as the national average. The total labor force may be about 520,000. The unemployment rate being 6.0%, the total employment is 490,000. Only data on the formal sector employment in industry and services have been obtained for the Eastern Region. These sectors in the Region engage comparatively more informal sector employment, and the total employment in these sectors is roughly estimated at 60,000 in industry and 190,000 in services. This leaves 240,000 as the employment in agriculture, accounting for 49.0% of the total.

The population in the Eastern Region increased at the average annual rate of 1.59% during 1992-2000. The crude birth and death rates in the Region are calculated at 29.1 and 6.4 per 1,000 respectively, based on data by department reported (DIGESTYC). This implies net outmigration of over 8,000 people annually.

GRDP

The GRDP data at department or regional level have not been obtained. The GRDP in the Eastern Region is derived by sector from the employment figures by assuming the labor productivity in the Region is 10% lower for all the three broad sectors than the national figures obtained above. The GRDP is thus calculated to be US$1,768 million, consisting of US$367 million or 20.8% in agriculture, US$324 million or 18.3% in industry, and US$1,077 million or 60.9% in services. The per capita GRDP is calculated at US$1,380 in the Eastern Region, corresponding to 66.1% of the per capita GDP of El Salvador.

(2) Macro projections

Population

It is assumed that both crude birth and death rates in the Eastern Region will become comparable to the respective national averages, and that outmigration will balance immigration.

Thus the population in the Region may increase to some 1,700,000 by 2019 at the average rate of 1.6% per annum. According to the official population projection by department, the increase in population of the Eastern Region as a whole accelerates from 1.25% per annum during 2000-05 to 1.37% per annum during 2005-10. Further acceleration is most likely with the revitalization of the La Union port and the associated Eastern Region development.

GRDP

It is expected that the economy of the Eastern Region will grow at rates much higher than the national average to fill in the existing income gap. A set of sector-wise growth rates are assumed to attach them: 2.5% per annum for agriculture, 6.0% per annum for industry, and 6.5% per annum for services. The overall growth rate of the GRDP becomes 5.8% per annum. The GRDP will be US$4,740 million in 2019. The per capita GRDP is calculated to be US$2,788 corresponding to 89.1% of the projected per capita GDP in 2019.

Consistency

The labor productivity in the Eastern Region is expected to attain the national averages for all the three broad sectors. This means the labor productivity in agriculture will have to increase at 2.4% per annum during 2000-18, and that in industry and services at 2.6% per annum, respectively. Applying the increased labor productivity, the employment by sector is calculated to be 245,000 in agriculture, 113,000 in industry, and 387,000 in services to make the total employment 745,000 in 2019.

The labor force coefficient will increase significantly as net outmigration decreases, probably to a level similar to the national average (65%). The labor participation ratio will decrease as the urbanization proceeds and more people pursue higher education also within the Eastern Region. It will not decrease as much as at the national level, and 67% may be assumed. By applying these ratios, the total employment is converted to the population of more or less 1,700,000 as projected above. These projections are summarized in Table 6.2.

Table 6.2. Projections of GRDP and Employment in the Eastern Region, 2000-18

	GRDP (US$10^6)		Growth rate (% p.a.)	Labor productivity ($/cap)		Employment (10^3)	
	2000	2019	2000-18	2000	2019	2000	2019
Agriculture	367	587	2.5	1,530	2,400	240	245
Industry	324	980	6.0	5,400	8,700	60	113
Services	1,077	3,563	6.5	5,670	9,200	190	387
Total	1,768	5,130	5.8	-	-	490	745

Source: ibid.

6.1.3 Micro estimate and projections of agricultural and industrial value-added

(1) Agricultural value-added in the Eastern Region

Existing conditions

Agricultural value-added in the Eastern Region in 2000 is estimated separately for crop cultivation, livestock and poultry, and fishery. Crop value-added is estimated based on planted area by main crop, and unit value-added per ha derived from crop budgets. Value-added for livestock and poultry is estimated based on the populations of cattle, swine and chicken, unit production of meat calculated from off take ratio and average carcass weight and unit production of cow milk and chicken eggs, prices and value-added ratios. Fishery value-added is estimated roughly based on production value by various fishery activities obtained by the survey. The results are summarized in Table 6.3.

Table 6.3. Estimated Agricultural Value-added in the Eastern Region, 2000

(1) Crop value-added

Crop	Planted area (ha)	VA/ha (US$)	VA (US$10^6)
Maize	110,000	875	96.3
Sorghum	31,900	875	27.9
Rice	1,300	1,208	1.6
Beans	16,900	1,000	16.9
Sugarcane	12,600	1,242	15.6
Coffee	31,000	565	17.5
Fruits	2,000	1,530	3.1
Vegetables	1,000	12,325	12.3
Subtotal			191.2
Managed pasture	12,000	500	6.0
		Total	197.2

Source: ibid.

(2) Livestock and poultry value-added

Item	Population	Production	Price	Production value (US$10^6)	Value-added (US$10^6)
Cattle	472,000				
- beef		24.8×10^{6}kg	$4.0/kg	99.2	100.3
- milk		169.9×10^{6}kℓ	$0.4/kℓ	68.0	
Swine	77,500				
- pork		2.3×10^{6}kg	$3.0/kg	6.9	4.1
Poultry					
- meat		50×10^{6}lbs	$0.8/lb	40.0	34.8
- eggs		40×10^{6}lbs	$0.45/lb	18.0	
Subtotal					139.2
Others					27.8
				Total	167.0

Source: ibid.

(3) Fishery value-added

	El Salvador		Eastern Region	
	Production (ton)	Production value (US$10^6)	Production value (US$)	Value-added (US$10^6)
Commercial fishery	4,567	15.4	7.0	
Artisan fishery – marine	2,099	9.3	0.5	
– inland	2,830	2.5	2.2	
Aquaculture	259	1.3	0.3	
Total	9,755	28.6	10.0	6.0

Source: Fishery sector survey by JICA Study Team.

The total agricultural value-added is estimated to be US$370 million, largely coinciding the macro estimate. The crop value-added is the largest at US$197 million, accounting for 53% of the agricultural value-added. Of the crop value-added, maize has the largest contribution accounting for 48.8%, followed by sorghum with 27.9%, coffee 17.5%, bean 16.9%, and sugarcane 15.6%. The planted area and the value-added for fruits and vegetables may be overestimated, while their contribution to the agricultural value-added is relatively small. At present, about 4,000ha is devoted nationally to eight principal vegetables to produce 82,000 ton in 2002. The livestock value-added is US$167 million or 45% of the agricultural value-added. The fishery value-added is estimated roughly at US$6 million.

Projection

The agricultural value-added in the Eastern Region is projected to the target year of 2019. The crop value-added in 2019 is calculated by expected planted area by main crop multiplied by the unit value-added per ha derived from future crop budgets under higher productivity and input use. The expected planted area by main crop is consistent with the future land use presented in Section 6.2. The value-added for livestock and poultry in 2019 is calculated based on projected population of cattle, swine and chicken and other parameters used to estimate the present value-added that have been set for assumed future conditions. The fishery value-added is projected simply by assuming an average annual increase at 2.0%. The assumptions adopted to project the crop value-added are summarized in the next page (Box 1).

The results of the agricultural value-added projection up to 2019 are summarized in Table 6.4. The crop value-added is projected to increase to US$331 million at the average annual rate of 2.8%. The largest contributor is green maize and sorghum accounting for 31.5% of the crop value-added, followed by vegetables (20.8%) and staple maize (18.0%). The per capita consumption of vegetables may double from 20kg/year at present to 40kg/year to make the total demand for vegetables in the Eastern Region some 70,000 ton/year by 2019. This would require 3,000-4,000ha for vegetable production. Thus, with the assumed 5,000ha, the Eastern Region would have excess production of vegetables for supply to other regions or export.

Box 1

Assumptions for Crop Value-added Projection

Staple maize	- Self-sufficiency in the Eastern Region at 80kg/cap/year. - Yield at 2.5 ton/ha
Green maize & sorghum	- To support milk self-sufficiency in the Eastern Region in combination with pasture (7 heads of cattle/ha) and import feed
Rice	- Cultivated in 10% of future irrigated area (15,000 ha in 2019)
Beans	- Under irrigation in combination with vegetables (5,000ha) and under rainfed conditions (9,000ha)
Sugarcane	- Same planted area as in 2000 - Higher yield under irrigation (2,500ha) weighted with non-irrigated production (10,000ha)
Vegetables	- Large expansion of cultivated area (5,000ha) to allow export
Kenaf	- Cultivated area large enough to establish a small pulp mill
Indigo	- Cultivated area necessary to produce 105 ton-indigo 40% at 35kg/ha yield
Coffee	- Expansion of high elevation coffee (4,000ha) and reduction of medium elevation coffee - Weighted average of unit value-added for high and medium elevation coffee
Cashew	- Specialization in organic cashew for enlarged cultivation area (5,000ha)
Fruits	- Large expansion of cultivated area (5,000ha) - Weighted average of unit value-added for avocado, lemon and mango
Pasture area	- Area to support the projected cattle population at 7 heads per ha - 20% managed pasture

Sugarcane maintains the present value-added, and the decrease in coffee value-added is small despite the significant reduction in planted area. Kenaf, indigo and cashew to be much strengthened in the Eastern Region as well as sugarcane have relatively small unit value-added, but their expanded production is justified because of their contribution to the processing industries.

Table 6.4. Projection of Agricultural Value-added in the Eastern Region, 2019

(1) Crop value-added

Crop	Planted area (ha)	VA/ha (US$)	VA (US$10^6)
Staple maize	54,400	1,093	59.5
Green maize & sorghum	69,800	1,493	104.2
Rice	1,500	1,465	2.2
Beans	14,000	1,100	15.4
Sugarcane	12,500	1,273	15.9
Vegetables	5,000	13,778	68.9
Kenaf	5,000	1,233	6.2
Indigo	3,000	1,248	3.7
Coffee	8,000	1,902	15.2
Cashew	5,000	1,558	7.8
Fruits	5,000	3,500	17.5
Managed pasture	21,900	650	14.2
		Total	330.7

Source: JICA Study Team.

(2) Livestock and poultry value-added

Item	Population	Production	Price	Production value ($US\$10^6$)	Value-added ($US\$10^6$)
Cattle	765,000				
- beef		41.3×10^6kg	\$4.5/kg	185.9	160.5
- milk		204×10^6kℓ	\$0.4/kℓ	81.6	
Swine	140,000				
- pork		10.5×10^6kg	\$3.5/kg	36.8	22.1
Poultry	1,900,000				
- meat		91.2×10^6lbs	\$1.0/lb	91.2	69.1
- eggs		53.1×10^6lbs	\$0.45/lb	23.9	
Subtotal					251.7
Others					37.8
				Total	289.5

Source: ibid.

(3) Agricultural value-added

	2000	2019	Ave. growth rate (% p.a.)
Crops	197.2	330.7	2.8
Livestock & poultry	167.0	289.5	2.9
Fishery	6.0	8.7	2.0
Total	370.2	628.9	2.8

Source: ibid.

It is projected that the value-added for livestock and poultry will increase to US$290 million at the average annual rate of 2.9%. The poultry subsector attains the highest growth at 3.7% per annum. Including the fishery value-added, the total agricultural value-added is projected to increase to US$629 million in 2019, representing the average annual growth at 2.8 during 2000-19. This growth rate is slightly higher than the rate assumed for the macro projection.

(2) Industrial value-added in the Eastern Region

Existing conditions

Industrial value-added in the Eastern Region, estimated at US$324 million in 2000, is broken down into subsectors of manufacturing, mining, construction and utilities. The shares of construction and utilities value-added are assumed to be 20% and 5% of the industrial value-added, respectively. The mining value-added is by far the smallest with its share less than 2%. The manufacturing value-added is further divided into broad subsectors of consumer goods, constructions materials, agro-processing and others.

Since no comprehensive micro data are available on production value by the manufacturing subsector, employment data are taken as the base to estimate the manufacturing value-added by broad subsector. Comparative labor productivity is assumed to convert the employment structure into the value-added structure. Results are summarized in Table 6.5.

Table 6.5. Estimate of Manufacturing Value-added in the Eastern Region, 2000

Subsector	Employment structure (%)	Comparative labor productivity	VA structure (%)	VA (US$10^6)
Consumer goods	39	150	37	88
Constructions materials	20	100	13	31
Agro-processing (food & beverages)	24	200	31	73
Others	17	180	19	45
Total	100		100	237

Source: ibid.

Projection

The industrial value-added in the Eastern Region is projected up to the target year of 2019, separately for existing industries, and new and strengthened industries. For the existing industries, average annual growth rates are assumed in line with the expected growth of the national and the regional economy. The construction and construction materials subsectors are assumed to grow at 4.0% per annum in line with the average growth of the national economy as they serve the domestic market. The existing agro-processing industries are expected to grow in line with the growth of agriculture in the Region. For consumer goods and others, the grow rates are assumed in line with the growth of GRDP in the Eastern Region.

The value-added for new and strengthened industries is calculated individually based on assumptions related to raw materials availability, products, prices and value-added ratios, depending on different industries. The assumptions used to project the value-added for new and strengthened industries are summarized below (Box 2). The results of the industrial value-added projection to 2019 are summarized in Table 6.6.

Box 2

Assumptions for Manufacturing Value-added Projection

Kenaf fibers	- Raw material production of 75,000 ton at 1 ton/ha (scale large enough to establish a pulp mill if viable) - Price at $300/ton-fiber - Production cost at $128.4/ton, labor costs being $30/ton
Indigo dye	- Production of 105 ton-indigo 40% (from 3,000ha of indigo plant cultivation) - Price at $24/kg and VA ratio 0.8
Cashew nuts	- Raw material production of 6,000 ton-nuts (from 5,000ha) - Price at $2.5/lb and VA ratio 0.6
Cashew wine	- 10% of cashew apple collected and used to produce cashew wine - Price of cashew wine at $4/ℓ, VA ratio 0.6
Dairy	- Use of $50x10^6$ℓ milk to produce 6×10^6kg cheese - Price at $1.3/lb and VA ratio 0.8
Honey	- Production of processed honey 1,500 ton - Price at $1,200/ton and VA ratio 0.8
Sugar	- 60% of sugarcane production in the Eastern Region used for sugar production - Raw sugar production of 72,000 ton - Price $0.25/kg; VA ratio 0.4

Liquor	- Molasses production of 216,000 ton - 20% used for liquor production at 90ℓ/ton-molasses - Price $2.5/ℓ, VA ratio 0.4
Construction materials	- Establishment of a sizable plant for each of cement products, bricks and tiles, wood products, and steel products - Reference to existing plants for production, prices and VA ratios
Agricultural machinery & equipment	- Production of tractors at 2,500 units/year - Price at $4,000/unit, VA ratio 0.25 - Production of pumps, pipes, etc., for pumped irrigation in 10,000ha - Annual costs of equipment $1,000/ha, VA ratio 0.25 - Other miscellaneous products

Table 6.6. Projection of Industrial Value-added in the Eastern Region, 2000 & 2019

(Unit: US$10^6)

Subsector	2000	2019	Notes
Manufacturing			
Existing industries			
Consumer goods	88	257	Growth rate of GRDP
Constructions materials	31	65	Growth rate of construction
Agro-processing	73	120	Growth rate of agriculture
Others	45	131	Growth rate of GRDP
Subtotal	237	573	
New and strengthened industries			
Agro-processing	-		
Sugarcane		11	Complete cycle processing for sugar, liquor
Kenaf		15	Kenaf fibers
Indigo		2	Indigo dye
Cashew		38	Complete cycle processing for nuts, wine
Dairy		14	Cheese
Honey		10	Refined honey
Others		20	Fruits processing, etc
Supporting industries	-		
Constructions materials		29	Cement products, fiberboard, steel products, etc.
Agricultural machinery Equipment		15	Tractors, irrigation equipment, etc.
Other export processing industries	-	38	100ha FTZ
Subtotal	0	192	
Mining	6	15	Lowest growth in the Region
Construction	65	137	Growth rate of national economy
Utilities	16	69	Highest growth in the Region
Total	324	986	

Source: ibid.

The existing industries are projected to grow at 4.8% per annum, not including those to be particularly strengthened such as sugarcane processing. Of the new and strengthened industries, agro-processing industries contribute to the industrial value-added the most with US$110 million, others contributing US$82 million. The manufacturing value-added is projected to increase to US$777 million in 2019 at the average annual rate of 6.4%. Including mining, construction and utilities, the industrial value-added is projected to increase from US$324

million in 2000 to US$986 million in 2019 at the average annual rate of 6.0%, coinciding with the growth rate assumed for the macro projection.

6.2 Spatial Framework for the Eastern Region

Spatial development of any region is affected by various factors such as resource endowments, existing infrastructure facilities, existing distribution of population and economic wealth, and other physical and socio-cultural factors as well as policy interventions. Three most dominant factors, which are more directly subject to planned development, are (1) distribution of settlements or urban centers, (2) transportation artery network, and (3) land use and potential. A spatial framework for the Eastern Region development is prescribed with respect to these factors.

6.2.1 Urban centers

The analysis on the distribution of urban centers in El Salvador has clarified that the Eastern Region is poorly served by urban centers (Subsection 2.7.2). Even a top ranked center of San Miguel is at Tier III. For the Eastern Region development, urban functions need to be much strengthened to support various socioeconomic activities effectively.

Of the 13 larger urban centers analyzed, nine centers may be ranked up to a higher tier for specific functions to be strengthened, respectively. These centers and their main functions are summarized below.

Urban center	Present tier	Future tier	Main functions
San Miguel	III	II	Regional center
Chinameca	IV	III	Agricultural support & distribution center
Santa Rosa de Lima	IV	III	Trade center for import goods; livestock center
Berlín	V	IV	Geothermal-tourism center; agricultural center
San Rafael de Oriente	IV	III	Agricultural support & distribution center
Jiquilisco	IV	III	Tourism center
Conchagua	V	IV	Tourism center
Chirilagua	IV	III	Tourism & distribution center in the south
Ciudad Barrios	V	IV	Agricultural support center in the north

More urban centers need to be designated at Tier IV around those at Tier III and in the northern parts of Morazan and La Union for a total of about 15 centers. They will serve as agricultural support centers and/or processing and distribution centers. Urban centers at Tier V, more or less 25 in number, would provide basic social and administrative services.

6.2.2 Artery network

The existing Pan American and Pacific coastal highways should be strengthened as the east-west arteries. Links between them should be improved to ensure the availability of alternative routes between the La Union port and the Central region under any conditions. The northern

longitudinal road should be established in steps to serve as the third artery. North-south links should be selectively improved to inter-connect tourism areas and to improve access between primary production areas and markets.

Logistic circuits are defined, which interlink San Miguel, La Union, Usulutan and a few other secondary towns as shown in Figure 6.1. The idea is to guide the location of various logistic facilities at nodal points of the circuits, such as regional markets, processing plants, industrial/commercial estates, and other trade and distribution facilities. Practically all the areas in the Eastern Region will be within easy access from/to the logistic circuits so that even the remotest areas can be integrated into the main economy of the Region. North-south links and rural roads should be improved to realize the easy access. The spatial framework of the Eastern Region is illustrated in Figure 6.2.

Figure 6.1. Logistic Circuits of the Eastern Region

6.2.3 Land use

Present land use

The land use in the Eastern Region is summarized by department in Table 6.7, based on the latest GIS map for which data are available. The distribution of land capability classes is summarized by department in Table 6.8, also based on the latest available GIS map. Based on these maps, possible future land use is analyzed using a GIS. For the purpose, a land use conversion matrix has been constructed to designate future land use for each combination of present land use and land capability (Table 6.9). For some combinations, conditional specifications are applied.

Figure 6.2. Spatial Framework of the Eastern Region

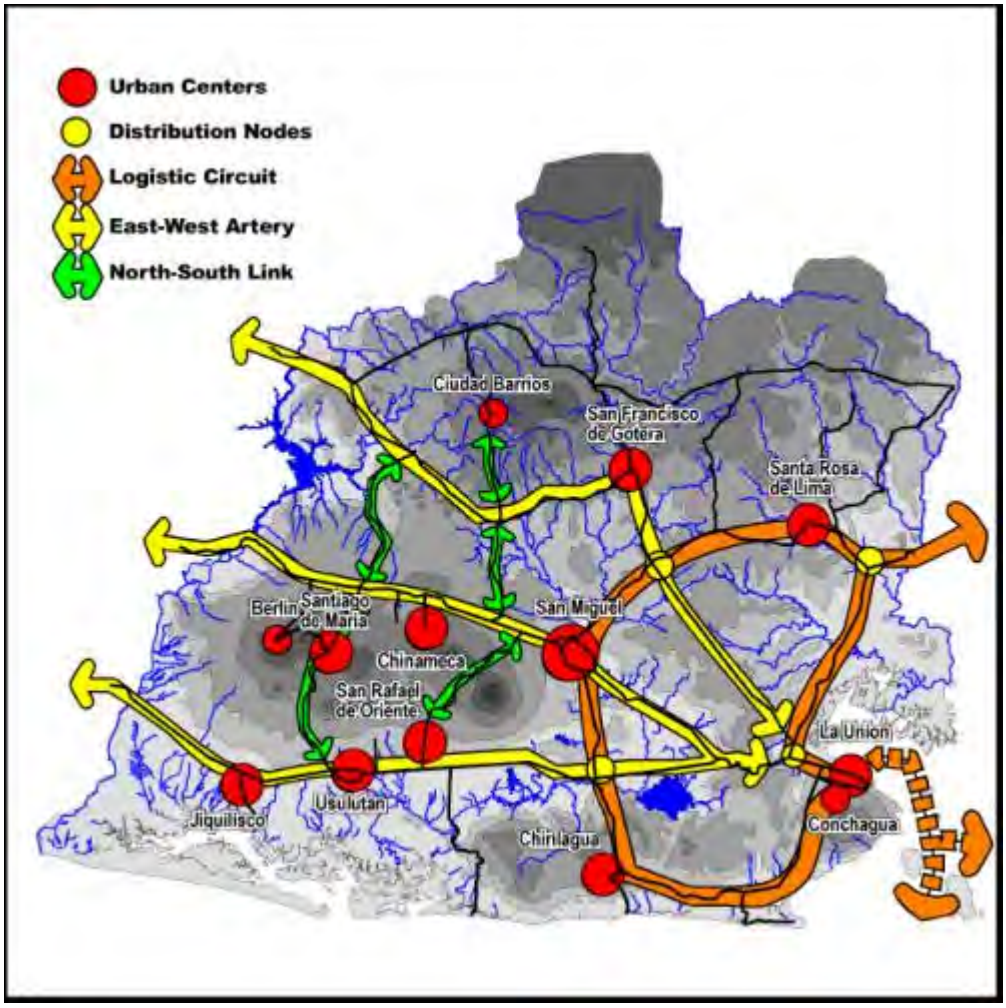


Table 6.7. Present Land Use by Department in the Eastern Region, 1996

(Unit: km^2)

Land use	Usulutan	San Miguel	Morazan	La Union	Eastern Region	Share (%)
Crop cultivated land	804	685	273	468	2,230	29.4
1. Basic grains	510	429	211	449	1,600	21.1
2. Other annual crops	22	107	10	8	150	2.0
3. Coffee	246	136	52	9	440	5.8
4. Other perennial crops	26	13	0	2	40	0.5
5. Pasture/grassland	475	1,002	604	704	2,790	36.8
6. Natural forest	453	334	579	764	2,130	28.1
7. Mangroves	219	0	0	86	310	4.1
8. Urban areas	10	32	4	6	50	0.7
9. Other (water bodies, lava, etc.)	8	24	0	36	70	0.9
Total	1,971	2,078	1,459	2,065	7,580	100.0

Sources: Land use maps of MAG, CATIE and IICA.

Table 6.8. Distribution of Land Capability Classes by Department in the Eastern Region

(Unit: ha)

	Usulutan	San Miguel	Morazan	La Union	Eastern Region	Share (%)
Land capability class						
I	7,093	764	0	0	7,857	1.0
II	22,425	7,949	93	740	31,208	4.1
III	30,572	28,136	3,981	9,068	71,756	9.5
IV	36,888	38,511	11,024	15,747	102,171	13.5
V	3,316	4,625	1,075	18,008	27,024	3.6
VI	26,063	27,571	3,351	15,173	72,159	9.5
VII	59,331	70,720	107,252	119,838	357,142	47.2
VIII	10,205	27,963	19,125	27,654	84,948	11.2
Other (water bodies, urban areas, marshes, etc.)	1,229	1,579	0	223	3,031	0.4
Total	197,124	207,819	145,903	206,452	757,297	100.0

Sources: ibid.

Table 6.9. Land Use Conversion Matrix for Future Land Use in the Eastern Region

	Land capability								
Present land use	I	II	III	IV	V	VI	VII	VIII	X
1. Basic grain	(1)(3)(4)	(1)(3)(4)	(2)	(2)	(5)	(6)	(7)	(9)(10)	(10)
2. Other annual crop	(1)(3)(4)	(1)(3)(4)	(3)(4)	(4)	(5)	(6)	(7)	(9)(10)	(10)
3. Coffee	(1)(3)(4)	(3)(4)	(3)(4)	(4)	(6)	(7)	(7)	(9)(10)	(10)
4. Other perennial crop	(1)(3)(4)	(3)(4)	(3)(4)	(4)	(6)	(7)	(7)	(9)(10)	(10)
5. Pasture/grassland	(1)(3)(4)	(3)(4)	(3)(4)	(6)	(6)	(7)(9)	(7)(9)	(8)	(10)
6. Natural forest	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(10)
7. Mangrove	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(10)
8. Urban area	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(10)
9. Other	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)

Future land use: (1) Irrigated agriculture
(2) Basic grains (maize, sorghum, pulses)
(3) Intensive lowland agriculture (sugarcane, kenaf, cotton, etc.)
(4) Intensive upland agriculture (vegetables, kenaf, indigo, etc.)
(5) Extensive/marginal agriculture
(6) Managed pasture
(7) Tree crops (cashew, citrus/avocado, high/medium elevation coffee) and pastures
(8) Protection forests/mangroves and bush/shrubland
(9) Settlements and tourism areas
(10) Other/miscellaneous

Source: JICA Study Team.

Future land use

Land use distribution expected in 2019 is shown in Figure 6.3 and Table 6.10. As seen in the table, the area for basic grains occupies 125,670ha, just sufficient for self-sufficiency in staple maize and production of green maize and sorghum to support dairy farming (Subsection 6.1.3). Irrigated agriculture is found only in 7,257ha but portions of land for intensive upland and lowland agriculture may be devoted to irrigated agriculture as well. The area for managed

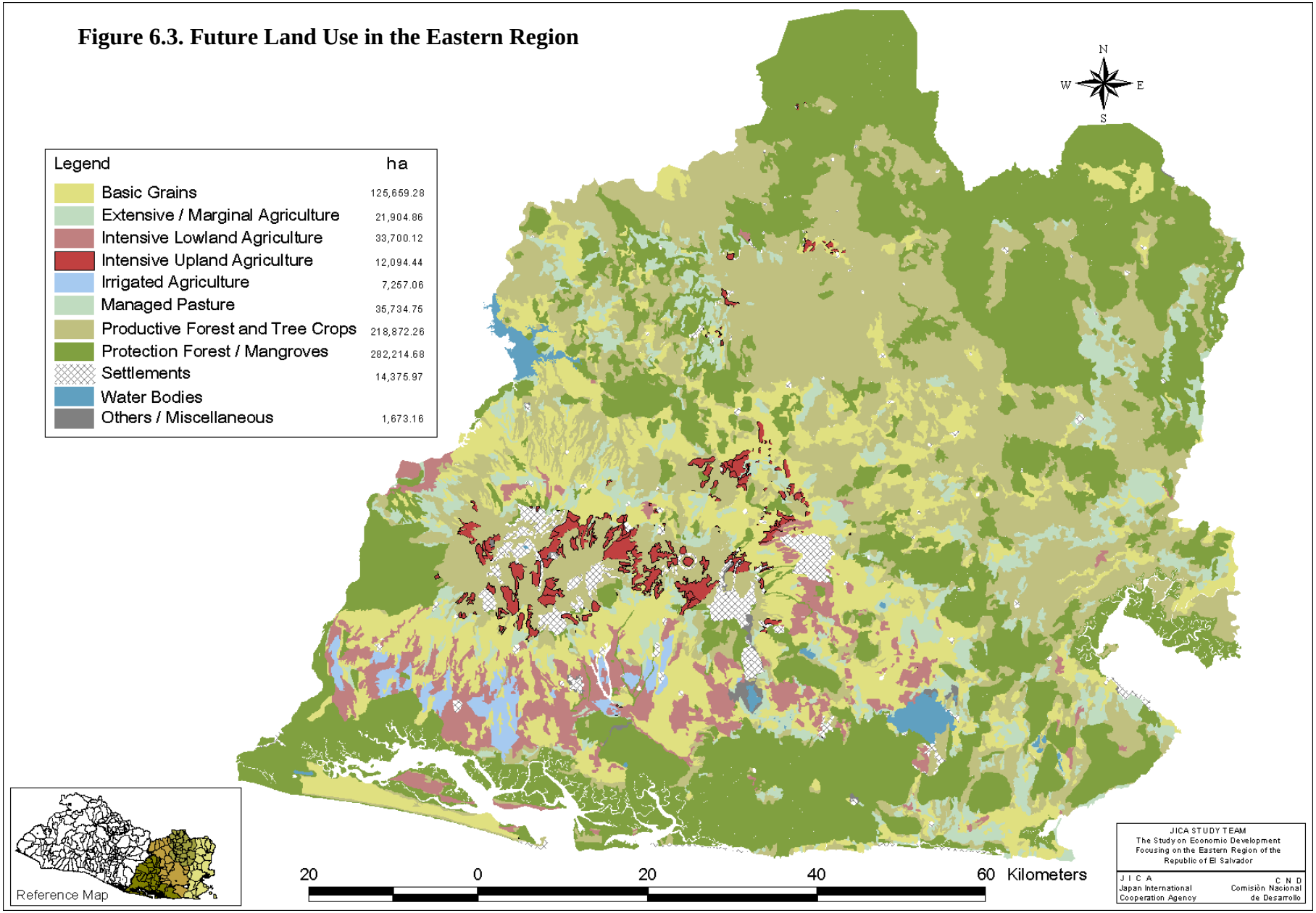
pasture exceeds the need assumed for the value-added estimate.

Table 6.10. Future Land Use in the Eastern Region

Land use	Area (ha)	Share (%)
(1) Irrigated agriculture	7,257	1.0
(2) Basic grains	125,659	16.6
(3) Intensive lowland agriculture	33,700	4.4
(4) Intensive upland agriculture	12,094	1.6
(5) Extensive/marginal agriculture	21,905	2.9
(6) Managed pasture	35,735	4.7
(7) Tree crops and pastures	218,872	28.9
(8) Protection forests/mangroves and bush/shrubland	282,215	37.2
(9) Settlements and tourism areas	14,376	1.9
(10) Other/miscellaneous	5,979	0.8
Total	757,793	100.0

Source: GIS map (Figure 6.3).

Figure 6.3. Future Land Use in the Eastern Region



Chapter 7 DEVELOPMENT SCENARIO FOR THE EASTERN REGION WITH LA UNION PORT REVITALIZATION

7.1 Scenario for the La Union Port Revitalization

7.1.1 Development of traffic demand

The revitalization of the La Union port depends naturally on the development of demand for port utilization. Therefore, the existing traffic demand estimates are reviewed in relation to the economic development of El Salvador and the Eastern Region development. Future traffics for the La Union port consist of the traffic to be diverted from existing ports, the traffic to be newly generated as the result of the development of El Salvador and the Eastern Region, and the traffic to be induced by the upgraded port facilities. The traffic inducement depends particularly on comparative costs of transportation via the La Union port and other existing ports and transfer routes. Comparative analysis is conducted on freight costs to see the extent to which the La Union port may induce traffic.

(1) Review of existing traffic demand estimates

The detailed design of the La Union port revitalization project provides macro and micro analyses on the traffic demand. The macro analysis estimated import and export traffics by correlating the future volume of import and export with the future GDP of El Salvador and the observed GDP development of major trade partners of El Salvador, viz. the U.S., Central America and Germany. To forecast the GDP in the target years, an annual growth rate of 3.5% was assumed. This is slightly lower than the present GDP projection adopted for the Study (Section 6.1).

The main assumptions in allocating cargo transport through the La Union port are as follows.

1) The Salvadoran cargo transport through the Quetzal port in Guatemala, which is mostly containers, will be shifted to the La Union port. The usage of the Quetzal port for Salvadoran cargoes is attributed to the lack of competitiveness of the Acajutla port in handling containers. It is expected that the La Union port will attract not only cargoes for El Salvador but also part of traffic cargoes from Guatemala, Honduras and Nicaragua currently handled at Pacific ports of these countries.
2) A new pattern of sea borne transportation will emerge when the La Union port becomes operational. Panamax ships servicing from the east coast of the U.S. and Europe through the Panama canal to the west coast of the U.S. and Asia will call in the La Union port.
3) The total transport cost, comprising sea borne and land transport, between the east coast of the U.S. and San Salvador via the La Union port is lower than that via Caribbean ports in Guatemala and Honduras. Although the traffic demand for the La Union port with regard to cargo transport via Caribbean ports will probably remain low in the short run, it is

considered to be potential demand for the La Union port in the long term.

4) Population growth rates are assumed at 1.84% for 2001-2005 and 1.50% for 2005-2015, based on the historical trend and estimation by the U.N.
5) The share of Salvadoran ports in the total cargo traffic by all the transport modes is assumed to be 40% for import through the target years and 29% for export from 2005 through 2015 based on the historical trend.

Under these assumptions, the macro estimate of cargo volume through ports in El Salvador is estimated to be 3.7 million MT in 2005, 4.9 million MT in 2010, and 6.4 million MT in 2015.

The microanalysis projected import and export of each commodity by correlation analyses on the GDP, sector GDP and population. Import and export volumes in the target years were determined for each of the main trade commodities in general cargo, dry bulk and liquid bulk. The total overseas trade cargo volume through ports in El Salvador was forecast at 3.1 million MT in 2005, 3.8 million MT in 2010, and 4.6 million MT in 2015. In addition, the local container cargo volume handled at ports in El Salvador was estimated by the current cargo movement through the Quetzal port of Guatemala and the Acajutla port. It was forecast to be 547,000MT in 2005, 827,000MT in 2010, and 1,248,000MT in 2015. Thus, the total cargo volume through ports in El Salvador would be 3.7 million MT in 2005, 4.6 million MT in 2010, and 5.8 million MT in 2015. These micro estimates are considered to be consistent with the macro estimates, with a variance 10% or smaller throughout the forecast period.

The conventional cargo volume through ports in El Salvador was allocated to the Acajutla and the La Union ports based on comparative transport costs estimated for the main trade commodities. The allocation of cargoes at the Acajutla port was determined by cost advantages estimated on the basis of the current characteristics of vessels, origins/destinations of cargoes, cargo lot per vessel, and shipping routes. In the case of the La Union port, the assumptions were that Panamax bulkers could be received at the port and that current origins/destinations would be the same as those at the Acajutla port. In both cases, import destinations and export origins were set within San Salvador.

For container cargoes, the allocation to the La Union port was determined separately for local container cargoes and transit containers to be attracted to the La Union port. It was found that the La Union port could attract local containers from all over the Country despite its disadvantage of longer road distance to/from San Salvador as compared with the Acajutla port. This disadvantage would be largely compensated by the use of larger container ships and more efficient container handling operations even on the route to the U.S. west coast and much more on the route to Asia.

The new container terminal at the La Union port is expected to attract not only Salvadoran local containers but also transit containers destined to or originating from the neighboring countries.

The cost analysis by the DD indicates that on the trans-Pacific routes connecting Asia and America, the La Union port would have an advantage in the total inter-modal transport costs over the neighboring principal ports, viz., Quetzal in Guatemala and Corinto in Nicaragua. En route to the U.S. west coast, however, the La Union port would be at an advantage in transport costs only over the San Lorenzo port in Honduras. Finally, the cargo volume handled at the La Union port in the future up to 2015 is estimated as summarized in Table 7.1.

Table 7.1. Forecast Cargo Volume at La Union Port

Cargo type		2005	2010	2015
General cargo, dry bulk and liquid bulk (10^3MT)	Import	555	657	771
	Export	70	70	70
	Total	625	727	841
Containers (10^3TEUs)		121	185	275

Source: DD Report by JICA.

(2) Comparative cost analysis on transshipment

To assess the potential for the use of the La Union port for transshipment on the Pacific side, transport costs are analyzed comparatively for alternative transport routes. Both land and sea transport costs vary widely depending on transport conditions (e.g., road conditions and border crossing procedure for land transport, and vessel size, port facilities and operation, and contents and occupancy of containers for sea transport). Particularly, the total transport cost is very sensitive to inter-modal factors (e.g., operating conditions and time for loading and unloading at ports). For the comparative cost analysis here, net transport costs are compared based on the model conditions assumed for the representative vessel size and standard operations at different ports. The unit data for this model comparison of transport costs are provided in Table 7.2. Various other costs specific to different transport routes are not included in the net transport costs. Including, for instance, insurance, which may be more or less proportional to the value of cargo contents and the duration of transport (e.g., border crossing and anchorage of vessels), the total transport costs could be several times higher than the net transport costs.

Table 7.2. Unit Data for Model Comparison of Transport Costs

Cost element	Unit/condition	1,270 TEU ship	4,800 TEU ship
(1) Service charge at port*	US$50,000/vessel	US$39/TEU	US$10/TEU
(2) Cost at anchorage†	per vessel	US$14,877/day	US$39,451/day
(3) On/off loading costs*	US$50/container	US$30/TEU	US$30/TEU
(4) Cost at navigation†	per vessel	US$20,926/day	US$66,494/day
(5) Average navigational velocity*		9 knots	15 knots
(6) Days at anchorage*	high-grade ports	2	--
	other ports	3	--

* based on CEPA estimates and JICA Study Team's survey; † DD Report by JICA.

Alternative transport routes are compared from representative origins on the Pacific side in Central America to the U.S. west coast, including routes through the La Union port. The results are summarized in Table 7.3. As seen in the table, the land transport of cargoes to the La Union port and the sea transport by a larger vessel to the U.S. west coast have the smallest transport cost per TEU for origins in Nicaragua and El Salvador as well as Honduras (not shown). There is no case, however, in which transshipment through the La Union port has the smallest unit transport cost although the transshipment through the La Union port is less expensive than that through Panama for cargoes originating in Costa Rica.

Table 7.3. Model Comparison of Transport Costs from Central America to the U.S. West Coast

(1) From Guatemala

Alt.	Land transport	Handling at port	Sea transport	Total model cost
1.	Guatemala c. → Quetzal 90km	Quetzal	Quetzal → Los Angeles 2,063Nmi	
	US$68/TEU	US$104/TEU	US$157/TEU	US$329/TEU
2.	Guatemala c. → La Union 422km	La Union	La Union → Los Angeles 2,267Nmi	
	US$216/TEU	US$92/TEU	US$87/TEU	US$395/TEU
3.	Guatemala c. → Quetzal	Quetzal, US$104/TEU	Quetzal → La Union 161Nmi, US$12/TEU	
	US$68/TEU	La Union, US$102/TEU	La Union → Los Angeles US$87/TEU	US$374/TEU

(2) From Nicaragua

Alt.	Land transport	Handling at port	Sea transport	Total model cost
1.	Managua → Corinto 150km	Corinto	Corinto → Los Angeles 2,294Nmi	
	US$95/TEU	US$104/TEU	US$175/TEU	US$374/TEU
2.	Managua → La Union 340km	La Union	La Union → Los Angeles	
	US$179/TEU	US$92/TEU	US$87/TEU	US$358/TEU
3.	Managua → Corinto	Corinto, US$104/TEU	Corinto → La Union 68Nmi, US$5/TEU	
	US$95/TEU	La Union, US$102/TEU	La Union → Los Angeles US$87/TEU	US$393/TEU

(3) From Costa Rica

Alt.	Land transport	Handling at port	Sea transport	Total model cost
1.	San Jose → Caldera 70km	Caldera	Caldera → Los Angeles 2,536Nmi	
	US$59/TEU	US$104/TEU	US$193/TEU	US$356/TEU
2.	San Jose → Caldera	Caldera, US$104/TEU	Caldera → La Union 309Nmi, US$24/TEU	
	US$59/TEU	La Union, US$102/TEU	La Union → Los Angeles US$87/TEU	US$376/TEU
3.	San Jose → Caldera	Caldera, US$104/TEU	Caldera → Balboa 366Nmi, US$28/TEU	
	US$59/TEU	Balboa, US$102/TEU	Balboa → Los Angeles 2,900Nmi, US$112/TEU	US$405/TEU

(4) From El Salvador

Alt.	Land transport	Handling at port	Sea transport	Total model cost
1.	San Salvador → Acajutla 95km	Acajutla	Acajutla → Los Angeles 2,168Nmi	
	US$70/TEU	US$104/TEU	US$165/TEU	US$339/TEU
2.	San Salvador → La Union 185km	La Union	La Union → Los Angeles	
	US$110/TEU	US$92/TEU	US$87/TEU	US$289/TEU
3.	San Salvador → Acajutla	Acajutla, US$104/TEU	Acajutla → La Union 120Nmi, US$9/TEU	
	US$70/TEU	La Union, US$102/TEU	La Union → Los Angeles US$87/TEU	US$372/TEU

Source: JICA Study Team based on data in Table 7.2.

The unit transport cost for the transshipment through the La Union port is only marginally higher than that for direct shipping from the Caldera port in Costa Rica. If the sea transport costs were higher by 30%, the transshipment would become the least cost option for cargoes from Cost Rica through the Caldera port. In case of cargoes from Guatemala, 80% increase in sea transport costs would make the transshipment through the La Union port less expensive than direct shipment from the Quetzal port.

For shipping from Central America to Asia, a case of shipping from the Quetzal port is examined for three alternative routes: (1) through the U.S. west coast, (2) through the La Union port and (3) direct shipping. The results are summarized in Table 7.4. As shown in the table, the transshipment through the La Union port has the smallest unit cost and the shortest transport time. This comparative position would not change even if sea transport costs were higher than assumed. It will be affected, however, by cargo balance and occupancy. Clearly, the transshipment through the U.S. west coast has an advantage due to heavy traffic between the U.S. west coast and Asia.

Table 7.4. Model Comparison of Transport Costs from Guatemala to Asia

Alt.	Handling at port	Sea transport	Total model cost	Transport time
1.	Quetzal	Quetzal → Los Angeles		
	3 days, US$104/TEU	10 days, US$157/TEU		
	Los Angeles	Los Angeles → Hong Kong		
	2 days, US$102/TEU	24 days, US$337/TEU	US$700/TEU	39 days
2.	Quetzal	Quetzal → La Union		
	3 days, US$104/TEU	1 day, US$12/TEU		
	La Union	La Union → Hong Kong		
	2 days, US$102/TEU	24 days, US$331/TEU	US$549/TEU	30 days
3.	Quetzal	Quetzal → Hong Kong		
	3 days, US$104/TEU	40 days, US$651/TEU	US$755/TEU	43 days

Source: ibid.

(3) Comparative cost analysis for dry canal

Transport costs from the port of Miami, the largest container port in Florida and the gateway of

the Americas, to the La Union port are compared for two alternative routes: (1) through the Panama canal and (2) through the future dry canal linking the Cortes port in Honduras and the La Union port. The same unit data presented in Table 7.2 are used for sea transport and port handling costs. The cost of passage of the Panama canal is US$154,265, including the passage fee, tugboats, locomotives, and inspection and security (by Panama Canal Authority).

Cost estimates for the two routes are given in Table 7.5. The unit transport cost per TEU is 80% higher for the route through the dry canal than the Panama canal route. In fact, the land transport cost along the dry canal alone is already higher than the total transport cost through the Panama canal. The dry canal would become comparable to the Panama canal if gross sea transport costs become 5.5 time of the net costs calculated here. An advantage of the dry canal is that it would reduce transport time to/from Miami for a few days. This would affect, among others, insurance costs.

Table 7.5. Cost Estimates for Transport from Miami to La Union by Two Routes

(1) Panama canal

Sea transport	Panama canal passage		Handling at port	Total model cost	Transport time
Miami → La Union	Service fee	Ship operation	La Union		
1,543Nmi, 5 days		2 days	4 days		11 days
US$69/TEU	US$32/TEU	US$16/TEU	US$73/TEU	US$190/TEU	

(2) Dry canal

Sea transport	Land transport	Handling at port	Total model cost	Transport time
Miami → Cortes	Cortes → La Union	Cortes		
743Nmi, 3 days	371km, 1 day	4 days		8 days
US$41/TEU	US$230/TEU	US$73/TEU	US$344/TEU	

Source: ibid.

(4) Comparative cost analysis for shipping from the U.S. east coast

Transport costs between the east coast of the U.S. and San Salvador are compared for two alternative routes: (1) through the Cortes port in Honduras, and (2) through the Panama canal and the La Union port. The same unit data as above are used for sea transport and port handling costs and the Panama canal passage. Model costs estimated for the two routes are given in Table 7.6.

The unit cost per TEU is slightly lower for the route through the Panama canal and the La Union port although this route takes longer than the route through the Cortes port. The transport time may become more comparable if handling at the La Union port turns out to be more efficient than assumed. Moreover, the second route does not involve cross-border land transportation. The favorable costs of the route from the U.S. east coast through the La Union port would also apply to routes from Europe.

Table 7.6. Cost Estimates for Transport from Miami and San Salvador by Two Routes

(1) Cortes port

Sea transport	Handling at port	Land transport	Total model cost	Transport time
Miami → Cortes	Cortes	Cortes → San Salvador		
743Nmi, 3 days	4 days	380km, 1 day		8 days
US$41/TEU	US$73/T	US$190/TEU	US$304/TEU	

(2) La Union port

Sea transport	Panama canal passage		Handling at port	Land transport	Total model cost	Transport time
Miami → Cristobal Balboa → La Union	Service fee	Ship operation	La Union	La Union → San Salvador		
1,543Nmi, 5 days		2 days	4 days	1 day		12 days
US$69/TEU	US$32/TEU	US$16/TEU	US$73/TEU	US$110/TEU	US$300/TEU	

Source: ibid.

(5) Implications to the phasing of La Union port revitalization

The analyses above have clarified the following. First, viable cargo transport routes in the near future includes land transport from Nicaragua and Honduras as well as from El Salvador through the La Union port to the U.S. west coast. The route from Costa Rica by land through the La Union port to the U.S. west coast may also be viable for some commodities. Second, the cargo transport form the U.S. east coast or even Europe to San Salvador is likely to go through the Panama canal and the La Union port rather than through ports on the Atlantic side. For the viability of the first possibilities, efficient land transportation would be vitally important. In particular, efficient border crossing at El Amatillo would be essential. For the viability of the second possibilities, efficient handling of cargoes at the La Union port should be ensured. Therefore, the border facilities at El Amatillo should be improved, and efficient port operation instituted as the La union port is established.

Transshipment from the Central American countries through the La Union port would become viable as the economies of these countries develop to generate more exportable goods and to demand more consumption and intermediate goods. The economic development in these countries is a prerequisite to making the potentially viable routes between the La Union port and Asia competitive with the route through the U.S. west coast. Further, some Panamax ships servicing between the U.S. east coast or Europe and the U.S. west coast or Asia will call at the La Union port for some commodities once the operation of La Union port is commenced, and further transshipment to/from the neighboring countries may develop at a later stage.

7.1.2 Basic conditions for La Union port revitalization

(1) Concepts applicable to La Union port and its hinterland development

The La Union port is expected to trigger the renewed growth of the economy of El Salvador as a whole through boosting trade, particularly by container-based long distance shipment. To promote trade-related economic activities, a free zone is to be designated in the port area.

There are various types of free zones established in the world with different functions and area coverage as well as management organizations. A few viable concepts applicable to the La Union port area are first clarified.

First, the free zone should be established as a growth center with multiple functions rather than just a port for free trade near a small town. It should be equipped with urban functions and various facilities from an early stage of the development. To allow the location of various functions and facilities expected for a growth center, a large area needs to be designated for special purposes. The port area and the large hinterland area may be called the "free port and economic zone (FPEZ)".

Second, a free zone (FZ) should be established in the immediate hinterland of the port. While the exemption of custom duties tends to become less attractive for investors to locate in an FZ as free trade agreements are promoted, introduction of value-added tax, local taxes and other measures to secure sufficient national revenue under free trade makes their exemption in the FZ still attractive. Also, the FZ allows free transaction and treatment of goods within its territory such as labeling, cleaning, re-packing, selection, repair and disposal. This is another advantage, not enjoyed for instance by bonded warehousing outside the FZ. Common service facilities provided by the FZ offer additional incentives for investors in the FZ. They include processing facilities, storage and distribution facilities such as warehouses and a truck yard, facilities for exhibition of goods and other functions, and an information center as well as a customs office. Moreover, as more industries locate in the FZ, they enjoy generally both the scale economy due to efficiency by large-scale operation and the scope economy through effective combination of goods and services.

Third, the FPEZ should serve increasingly as an international logistic center linked with free zones in other regions and countries, offering storage, transport and distribution, packing and re-packing, and processing functions for goods from many countries. As the international division of work proceeds, transport and distribution functions become increasingly more important part of manufacturing industry. Good and reliable logistic functions alone can attract some industries. The logistic center may be effectively established at an early stage for products from neighboring countries for export. Certification for products with quality control is an important function especially for agro-products.

In sum, the FPEZ is to be designated for a large area, encompassing the port area, the present and future urban areas, area to locate various facilities, and some conservation area to ensure the overall amenity of the FPEZ. The FZ is to be designated within the FPEZ in the immediate hinterland of the port with a standard set of functions and facilities as suggested above. Functions for the logistic center are to develop in steps, starting with products from neighboring countries. Facilities as the growth center include office district, commercial center, hotels and tourism facilities, and urban parks as well as housing, the FZ and other industrial areas.

(2) Success factors for free zones (FZs) and industrial estates

Success of free zones and industrial estates in attracting investments depends on various factors. They include (i) government support, (ii) global economic conditions, (iii) locational factors, (iv) target industries, and (v) operation and management (Box 3). In relation to the FPEZ in the La Union-Conchagua area, factors (i) and (ii) are strongly related to CAFTA and WTO, which affect also factors (iii) and (iv). Location of textile and apparel industries, most dominant in free zones in El Salvador, would not be much affected by CAFTA as analyzed in Subsection 5.1.4. Tax exemption after 2010 in accordance with WTO will apply to all the neighboring countries equally and thus will not affect the investment flow in any significant way. Location of other industries would depend dominantly by various locational conditions of the FPEZ.

Box 3

Free Zones Development in Asian Developing Countries

1. Eastern Seaboard Development, Thailand

The Eastern Seaboard (ESB) Region of Thailand had favorable locational conditions such as the proximity to the Bangkok metropolitan area (BMA), favorable conditions for the construction of deep-sea ports, and lands suitable for industrial development. The Thai government prioritized the ESB development in its five-year socioeconomic development plan (1982-86). All the port facilities, industrial estates and related infrastructures completed by early 1990's, and the ESB region is now the second largest economic zone next to the BMA.

Success factors of the ESB development are the following.

(1) Government initiative: The development was promoted under the government ownership in line with the national plan. Investors were attracted by 1) incentive measures, 2) transport infrastructure, and 3) public utility services.

(2) Global economic conditions: Foreign investments, mainly by Japanese firms, expanded rapidly in 1980's, which induced the development of local firms and capital. Investments by those local firms and subcontracting firms followed in 1990s.

(3) Locational conditions: Other than the conditions listed above, over-concentration of industries in the BMA induced the industrial location in the ESB.

(4) Target industries: Originally export-oriented light industries were targeted, but flexible invitation policy allowed the location of a wide range of assembly industries for automobiles, electric appliances and electronics.

(5) Operation and management – The industrial Estate Authority was established for exclusive operation and management. The land leasing system with relatively low rents, however, is undermining the financial condition of the Authority, resulting in unsatisfactory services.

2. FTZs in Malaysia

The FTZ law was enacted in 1971 to attract FDIs in Malaysia, and eight FTZs were established in 1970s, where 28 Japanese and 26 U.S. firms located. During 1980's, SMEs and subcontracting firms to supply parts and intermediate goods for large manufacturers located in industrial estates (IEs) next to FTZs, contributing to industrial agglomeration. These large enterprises and SMEs are labor-intensive and export-oriented, contributing to industrial development and employment generation. Linkages with local industries, however, are still limited.

The successful industrialization with FTZs has resulted in labor shortages and land price escalation as well as widened inter-regional disparities. The Malaysian government has now shifted its industrialization policy with objectives to develop high-tech industries, and to cultivate SMEs. As a

measure to develop high-tech industries, high-tech parks have been constructed in major industrial areas to invite knowledge-intensive industries such as IT and biotechnology firms, and those to link with existing electronics industries. These high-tech parks are equipped with an incubation center, research and testing laboratory, urban facilities, housing and amenity facilities.

Also, industrial estates to accommodate SMEs are developed to cultivate linkage industries. The Malaysia Industrial Estate Ltd., a State firm, is developing industrial estates for local SMEs. In addition to land development, construction of factory buildings for rent and low cost housing is also undertaken. To further promote the accumulation of SMEs and linkage industries, cooperation between the government, public institutes and the private sector has been pursued.

3. Direction of IE development in ASEAN countries

Both the public and the private sectors have undertaken IE development in Asian developing countries. The development by the public sector has been under the clearly established industrialization policy of respective governments, and undertaken directly by the central government, local government or public corporation created exclusively for the purpose.

The IE development by local or foreign firms provides not only land development and infrastructure provision but also various business services that located firms need. They include: 1) services related to the establishment of firms or construction of factories, 2) support for acquisition of labor permit, custom clearance etc., 3) agent services for accounting and tax declaration, 4) management, finance, personnel and training related services, and 5) insurance and leasing business. These services are not simply part of attracting investments, but business by itself after the land sales. That is, the IE development by the private sector is undertaken increasingly as IE management service business rather than sales of industrial lands.

References:

1. JBIC, *Ex-Post Evaluation*, "Eastern Seaboard Development Plan Impact Evaluation", April 2000; JICA/OECF Joint Evaluation, "Eastern Seaboard Development Program (Thailand)", 2000.
2 & 3. M. Kawabata & M. Miyanaga, *Dai-kyoso jidai no 'mono zukuri' kyoten* (in Japanese), Ryukoku Univ. Research Institute for Social Sciences, February 1998.

(3) Locational conditions

According to the Foreign Direct Investment Survey by MIGA, most important locational conditions for investors are: 1) market access, 2) stable social and political environment, 3) ease of doing business, 4) reliability and quality of infrastructure and utilities, and 5) ability to hire technical professionals (Table 7.7). For those to locate in the FPEZ, market access will improve by the La Union port and CAFTA, and social and political environment is relatively stable in the Eastern Region as in El Salvador. Relatively well-established institutions related to investment in El Salvador under open economy should apply to the Region as well for ease of doing business. To satisfy the last two conditions, infrastructure and utilities should be much improved for the FPEZ, and technical and management staff should be trained at existing and new institutions. The concern on crime and safety has increased among investors especially after the 9/11 incident, but security and safety in the Eastern Region as well as in El Salvador has been improving steadily in recent years as revealed by the survey conducted as part of the Study.

(4) Characterization of the FPEZ

The FPEZ is to be established to offer internationally first-class business environment to satisfy

Table 7.7. Top 20 Critical Locational Factors for Foreign Direct Investments

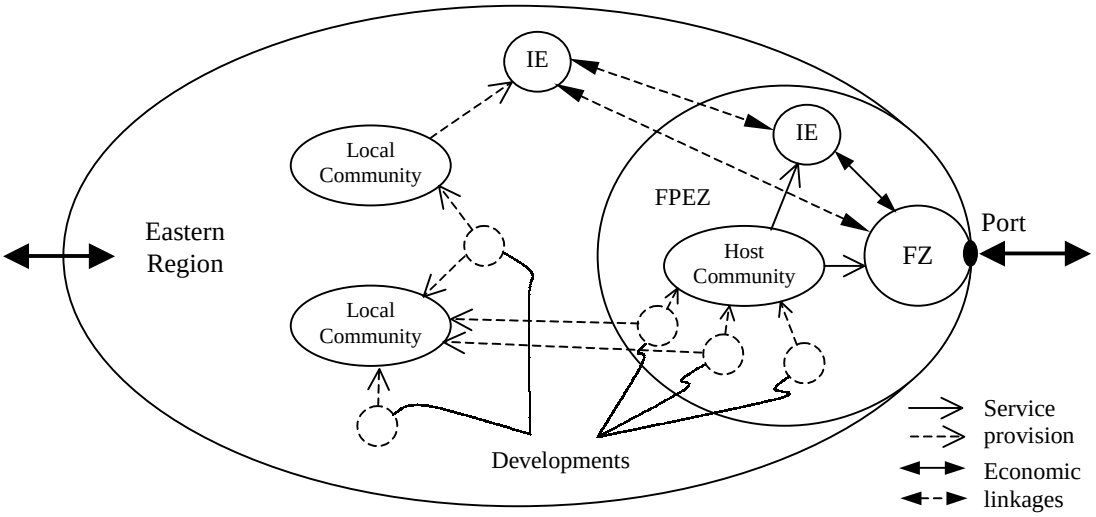
Factor	Frequency
Access to customers	77
Stable social and political environment	64
Ease of doing business	54
Reliability and quality of infrastructure and utilities	50
Ability to hire technical professionals	39
Ability to hire management staff	38
Level corruption	36
Cost of labor	33
Crime and safety	33
Ability to hire skilled laborers	32
National taxes	29
Cost of utilities	28
Roads	26
Access to raw materials	24
Availability and quality of university and technical training	24
Available land with all services in place	24
Local taxes	24
Access to suppliers	23
Labor relations and unionization	23
Air services	23

Source: MIGA, Foreign Direct Investment Survey.

all the locational conditions described above and more. To ensure comfortable living environment for foreign investors and their families as well as local people to live and work with them, various amenity facilities should also be provided within the FPEZ. They include beach and mountain resorts, recreational facilities (e.g., indigo museum, tourist orchard, picnic areas, etc.), and an urban park as well as high-grade urban services. Only the port and the FZ areas will be segregated to enjoy special zone status. For other areas within the FPEZ, limited control should be imposed on land use and transactions, development and landscaping. In return, investors should be able enjoy limited benefits related to local taxes, staff recruitment and labor management.

The FZ in the FPEZ would enjoy the full special zone status. The industrial estate (IE) would enjoy limited benefits allowed for other developments in the FPEZ. As such, individual industries to locate in the FPEZ would enjoy the same benefits as long as they conform to the limited control imposed on any development within the FPEZ. A wider range of industries as suggested in Subsection 5.1.2 would locate outside the FZ in the FPEZ. They would develop interactions with enterprises in the FZ on business or joint venture bases and contribute to accumulating economic activities for the economic development drive in the Eastern Region (Figure 7.1).

Figure 7.1. Image of Eastern Region Development with FPEZ



The designation of two or more special areas in the same location to attract investors by offering a wider range of facilities and functions is not uncommon. Selected cases in Asia are summarized in Table 7.8. Within a larger area, various facilities and functions are provided, including housing, commercial area, sports and recreation area, and nature area in addition to industrial estate and/or free zone.

Table 7.8. Selected Asian Cases of Large Special Area Designation

Special area	Country	Total area (km^2)	Area designation	Management entity	Other functions
Okinawa	Japan	~1,400	- High industrialization area - Free trade area - Special free trade zone - IEs (673ha)	Local government	Urban areas
Subic	Philippines	1,051 Core area 100	- Special economic & free-port zone - IE (214ha)	Public corporation	Airport, tourism & recreation area, commercial area, etc.
Batam Island	Indonesia	415	- Regional growth center - FTZ - IE (500ha)	Private joint venture	Housing, commercial area, etc.
Pan Wol	Korea	317	- New town - IE (783ha)	Government corporation	Park, agricultural area, housing, etc.
Pasar Gudang	Malaysia	49	- Industrial township - IE (1,452ha)	State development corporation	Housing, sports complex, etc.

Source: Compiled by JICA Study Team from various sources.

(5) Initial development

It is expected that the La Union port will be commissioned by the middle of 2007. Along with the port construction, related projects and institutional measures need to be implemented to ensure proper operation of the port from the beginning. Related projects include the bypass for La Union city, wastewater treatment plant for La Union and Conchagua, and other utilities for

the port and its immediate vicinity. Border facilities at El Amatillo should be improved, starting with the relocation of the bridge. Improvement of living conditions in La Union city should also be initiated, including waterfront rehabilitation as currently planned by CND, improvement of solid waste management, establishment of a municipal market and slaughterhouse, and water supply expansion.

The comparative cost analyses in the previous subsection indicate that the transport cost by sea between La Union and Nicaragua is smaller than the land transport cost if full cargo load is ensured and port operation is efficient. These conditions may be realized for ferry operation between La Union and Nicaragua.

Establishment of a new management entity for the port itself is a matter of urgency in view of the implementation schedule of the La Union port. A new law has been passed to allow the Maritime Port Authority (AMP) to be established for the purpose but its specific mandates are to be worked out urgently. Such mandates should make provision for the establishment of a development corporation having areal jurisdiction. The FPEZ is to be designated, including a conservation area around the Fonseca gulf and the Conchagua volcano. The FZ is to be established in the port area in combination with a common IE in the vicinity.

A management plan for the Fonseca gulf-Conchagua conservation area should be prepared by the participation of local communities and people, including indigenous minority. Cooperative management of the Fonseca gulf with Honduras and Nicaragua should be institutionalized extending the Progolfo initiative.

7.1.3 La Union port revitalization by phase

The revitalization of the La Union port would be realized through sequence of activities to develop and events to take place after the new port facilities are established. Export and import would expand and diversify, and other port-related activities would develop in steps. To create a growth center as conceived above, the port city of La Union would develop rapidly with improved infrastructure and services including some high-grade services to establish in time. The La Union port revitalization would be supported by the Eastern Region development and vice versa, for which the strengthening of spatial structure is necessary as a component of the basic strategy presented above.

The main activities and events to be observed in these aspects are presented in Table 7.9 for the three phases: the second half of Phase 1 for 2007-09, Phase 2 for 2010-14, and Phase 3 for 2015-19. Export, import and other port-related activities are presented to indicate expected performance and characterization of the port revitalization in each phase rather than specific activities to be promoted with policy targeting.

Table 7.9. La Union Port Revitalization by Phase

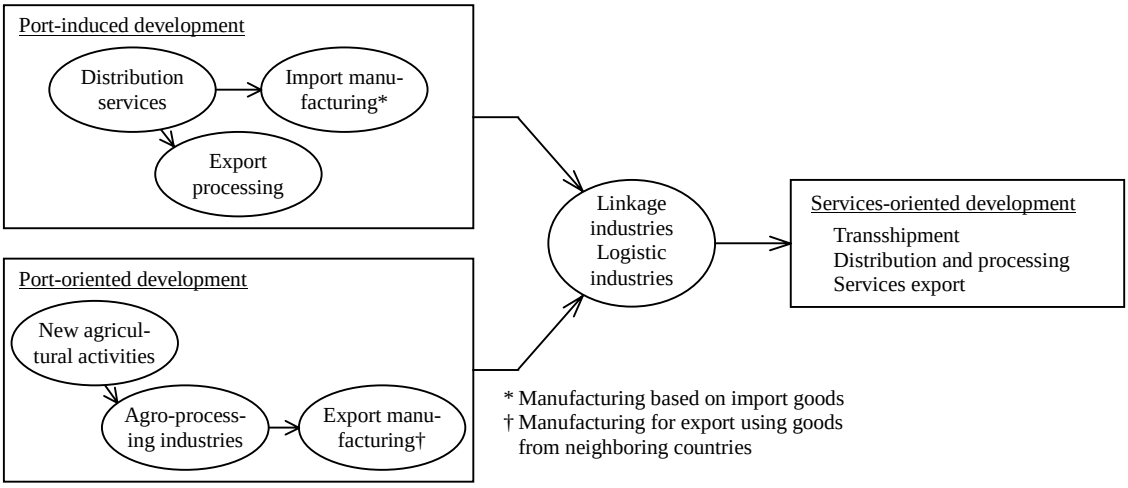
	Second half of Phase 1: 2007-09	Phase 2: 2010-14	Phase 3: 2015-19
Export	- Goods to be diverted from Acajutla or ports of Guatemala and Honduras: e.g., textiles and clothing, coffee, sugar, etc. - Processed fish - Products of initial export processing in port area and Concordia	- Products of export processing at other inland free zone/IEs as well - Specialty products: e.g., fiberboard, dairy products, processed or IQF fruits/vegetables, organic cashew	- New products combining imported raw materials and intermediate goods - Expansion of specialty products with increased raw materials from Honduras and Nicaragua
Import	- Some mass consumption goods - Intermediate goods for processing in the ER: e.g., cement for cement products, steel bars for multiple uses, etc.	- More intermediate goods for export processing	- Goods to transship through the port and the dry canal
Other port-related activities	- Marina for pleasure boats - Commercial fishery - Domestic tourism - Tripartite events in the Fonseca gulf (e.g., inter-island yacht race) - Ferry services to Nicaragua	- Expansion of commercial fisheries with fish from neighboring countries - Local cruise industry - Ship chandling	- International cruise industry
Port city of La Union	- Continuation of city beautification - Enhancement of watershed areas - New residential development - Fully operational FZ in port area - Designation of conservation area in Fonseca gulf-Conchagua volcano	- Water supply expansion with new water source - New sanitary landfill site - Waterfront development - City beautification with urban parks and greenery network - Establishment of nature park	- Satellite towns development - Major recreational facilities: e.g., amusement park, marine park with oceanarium
Spatial development	- Strengthening of regional center and sub-centers (polar development) - Completion of border facilities at Amatillo - Bypass for Usulutan city - Northern longitudinal road: Oscicalla-San Simón improvement	- Establishment of logistic circuits linking San Miguel, La Union and other secondary towns - Bypass for San Miguel - CA1-CA2 link - Strengthening of secondary urban centers - Establishment of El Amatillo-Comayagua road link (dry canal) - Northern longitudinal road: San Simón-San Luis de la Reina improvement	- E1 Divisaledo-Comacaran-San Alejo road - Establishment of alternative link with Honduras through north - Northern longitudinal road: San Luis de la Reina-Nuevo Edén de San Juan improvement

Source: JICA Study Team.

7.2 Scenario for the Eastern Region Development

A series of activities to develop and events to take place over the planning period up to 2019 is described here by phase as the development scenario for the Eastern Region. The Eastern Region development scenario is strongly linked with the La Union port revitalization outlined in Subsection 7.1.3. Some economic activities are induced by the port while other activities are strategically initiated, oriented to the port. In either way, a wider range of activities will establish, facilitated by related linkage and logistic industries. As these linkage and logistic functions develop, the Eastern Region development will be supported more and more by service-oriented activities (Figure 7.2).

Figure 7.2. Evolution of Eastern Region Development Centering on La Union Port Utilization



To describe the Eastern Region development scenario, the same phasing defined in the previous section is used: Phase 1 up to 2009, Phase 2 for 2010-14, and Phase 3 for 2015-19. The expected performance of the Eastern Region development in each phase is described.

7.2.1 Phase 1: 2004-09

Phase 1: 2004-09

Preparation for the La Union port commissioning
- Improvement of related urban and transport infrastructure

Restoration/enhancement of resources capacity
- Land and water resources → Rio Grande de San Miguel Basin
- Human resources → Operation and management of the La Union port
  Farmer organizing for new agricultural activities

Institutional development
- National — Ministerial Task Force → Development Authority/Corporation
- Regional/local — Local Management Group
  Municipal Associations

(1) Overview

This phase is characterized by restoration and enhancement of resources capacity as well as preparation for the commissioning of the La Union port in mid-2007. Human resources necessary for the operation and management of the port will be trained as a matter of urgency at existing institutes and a new technological institute to be established in La Union. Farmers will be organized to prepare for new agricultural activities to develop in response to increasing trade opportunities with the port. Land productivity will be enhanced through watershed management, particularly in the Rio Grande de San Miguel, including improvement of high elevation coffee under cover shade trees, small-scale irrigation with ponds, planting of cashew and other fruit trees (e.g., avocado, citrus and mango) in uplands, and adoption of better farming practices.

Institutional development also characterizes the Eastern Region development during this phase. An intermediate level of administration between the Central Government and municipalities currently discussed will be effectively institutionalized in the form of municipal associations, first for the Fonseca gulf and the Rio Grande de San Miguel. Administrative functions for agricultural extension and support to SMEs will be substantially transferred to this level as well as those for social services and environmental management. In response to this transfer, people's participation will be enhanced and institutionalized as well. The FPEZ will be designated in the La Union-Conchagua area, and an FZ established in the port hinterland. A development corporation will be established by public-private partnership to take charge of the FPEZ. The operation and management of most port and related facilities will be entrusted to private operators.

(2) Socio-economy

After the decades of stagnation, the agricultural sector will start renewed growth during this phase. Fruits and vegetables will be selectively promoted, and new commercial crops introduced/strengthened, such as indigo, kenaf and cashew. Formation and strengthening of farmers' associations are the prerequisite to these activities for joint procurement and marketing, and possible joint venture arrangements with foreign partners. The Eastern Region may join an existing cluster/complex for apiculture and sugar-related processing. A prerequisite would be enhancement of resources base for production increase as well as technical extension by the existing cluster and industries. The improvement of high elevation coffee under cover shade trees will be supported as part of a reforestation program.

Livestock development will pursue increasingly high input-high yield mode of production, particularly for dairy cattle. It will be supported by increasing production of green maize and sorghum for silage production and increasing import of feed grains and supplements.

New agro-processing industries will establish based on new and strengthened crops to be

produced, for instance, indigo dye and dyed products, kenaf fibers, organic cashew, and fruits preserves. For organic or gourmet coffee, original brands of the Eastern Region will be developed for export market. The initial export processing will establish as the port is commissioned, and the processing of imported intermediate goods will start for some consumer goods (e.g., plastic products from synthetic resins) and construction materials (e.g., cement and steel products).

Textile and apparel industries will establish steadily, partly shifting from the Capital region and La Libertad. The conclusion of the CAFTA with the U.S. with the provision for the use of domestic textiles will encourage investments in spinning and knitting industries as well in line with the "full package" strategy for the textile and apparel industries in Central America.

As the population increase, the demand for construction and construction materials industries will increase to justify the local production of cement products and other low cost construction materials. Similarly, food industries will develop for various snacks and breads to supply the increasing population.

Trucking and warehousing services will be improved through the restructuring of the industry organizing service operators. Various business services associated particularly with new and strengthened agricultural and processing activities will develop. Simple distribution processing related to port-based distribution functions will establish, including labeling, label making, quality control, and customers services. Business process outsourcing (BPO) services will develop rapidly, particularly front BPO services led by customer relationship management (CRM) including call centers. Tourism products will be developed mainly for the domestic market, including local recipes, dyed products and other handicrafts, tour circuits, and some artificial tourist attractions.

(3) Spatial development

Spatial development during this phase is basically polar development centering on a few larger urban centers, viz., San Miguel, La Union, Santa Rosa de Lima, and Usulutan. At the same time, major bottlenecks in inter-regional and international transportation should be removed. Following the construction of the La Union bypass, a bypass for Usulutan city will be completed. Border facilities at El Amatillo will be upgraded, starting with the establishment of a new bridge downstream of the existing one.

Rural roads will be improved steadily during this phase, which would allow expansion of areas for new commercial crops subsequently. Ongoing self-help efforts by rural communities will be strengthened, supported by skill training and provision of simple tools and equipment.

New residential development will take place in the La Union-Conchagua area to accommodate increasing flow of people from other regions and countries. The urban road system will be substantially strengthened, associated with the residential development as well as the new

bypass. Other infrastructures and utilities will also be developed to bolster the La Union port and the port city development.

7.2.2 Phase 2: 2010-14

Phase 2: 2010-14

Accelerated economic growth
- Active private investments in FPEZ
- Diversification of indigenous industries

IT-oriented human and institutional development → Innovations for export drive

Central American integration
- Interconnected telecommunications system → Support of logistics functions
- Inter-oceanic logistics corridor in Honduras → Trade expansion

(1) Overview

This is the phase for accelerated growth in all the sectors. Human and institutional development with IT will take place actively to introduce innovations for export drive. Vocational training will be undertaken dominantly by the private sector, supported by tax reduction and other incentives provided by the Government and municipalities. New institutions for entrepreneurial development will be fully operational, including a skill development fund and an incubation center. Active private investments will be directed also to some infrastructure facilities including those for the FPEZ.

This phase is also characterized by the substantiation of the Central American integration. El Salvador will benefit particularly from the interconnected telecommunication system with fiber optic circuits and the integrated power supply system. Also the completion of the El Amatillo-Comayagua road link in Honduras will trigger trade expansion between El Salvador, Honduras and Nicaragua to enlarge processing and export opportunities in the Eastern Region. Continued cooperative management of the Fonseca gulf will be further substantiated with institutionalized people's participation in environmental monitoring and management under a formal agreement between the three countries.

(2) Socio-economy

Areas for new and strengthened crops will expand to support the accelerated growth of the agricultural sector. Fruits and vegetables will be supplied to growing urban markets, particularly in San Miguel and La Union with increasing expatriate communities. The export market will be well established for some IQF fruits and vegetables. The Eastern Region will become integral part of the existing cluster/complex for apiculture and sugar-related processing rather than the suppliers of raw materials.

The high input-high yield mode of dairy farming will be firmly established in areas where water

shortages are largely solved by early development efforts for watershed management. More green maize and sorghum will be produced for silage to support dairy farming in combination with managed pastures and import feed grains and supplements. Poultry farming will develop rapidly, partly shifting from the Western region and taking advantage of import grains through the La Union port. Commercial fisheries will expand with fish supply from neighboring countries as well. Fishmeal plants will be established, which will supply the poultry industry.

Not only apiculture and sugar with its derivatives, agro-processing will produce diversified products, such as light construction materials from kenaf, cashew apple wine and various processed cheeses. As the incentive for farmers to enhance agricultural productivity increases with expanding urban and export markets, irrigation and farm mechanization will proceed rapidly. This will lead to the establishment of the agricultural machinery and equipment industry. This may start with assembly operations at FZ and manufacturing of agricultural implements and equipment from intermediate goods to be imported. These agricultural and processing activities and supporting industries will form in totality what may be called an agro-industrial complex (AIC). The AIC would effectively extend the cluster strategy through broader and deeper opportunities for inter-industry linkages with indigenous and supporting industries (Box 4).

Export processing of the portside FZ will be fully developed. Additional export processing will start at another inland FZ. Export of specialty products will increase, benefiting from supply of additional raw materials from neighboring countries, such as fiberboard, dairy products, and processed or IQF fruits and vegetables.

An increasing number of industries based in other regions, depending on the import materials, will establish in the Eastern Region to capitalize on the La Union port, partly shifting from their original locations. They include the poultry industry; manufacturers of various construction materials based on imported steel, cement and other intermediate goods; some chemical products manufacturers; and maquila industries.

As agricultural production increases, excess production will be processed into frozen and other processed food products mainly for export to overseas Salvadorans. Other food industries based on import grains and pulses will also diversity. The development of various food industries will induce the establishment of the plastic products industry for PET bottles, packaging materials and sheets as well as small packaging industries.

The development of agriculture and the construction industry will generate needs for repair and parts for agricultural and construction machinery and irrigation equipment. This will lead to the establishment of machinery and equipment industries, initially for starting with assembly operation. Also, a maintenance center will establish near the port to support the development of logistic functions.

Box 4

Agro-Industrial Complex and Industrial Clusters

Conceptual background of the agro-industrial complex

The agro-industrial complex (AIC) proposed here is a set of agro-based economic activities, which are interrelated directly or indirectly through chains of input-output relationships. This is similar to the more popular concept of industrial clusters popularized recently by Michael Porter. The cluster is now a technical term, while the complex is not. More promising economic activities are proposed in the form of the complex for three reasons:

(i) To increase and internalize value-added, while minimizing wastes and leakages,
(ii) To allow the Government to take effective measures for agricultural development without direct interventions in the sector, and
(iii) To motivate local people to produce for larger markets including export markets by making linkages visible.

The first reason is common to the cluster strategy as well. The second and the third reasons are pragmatic, representing the planning strategy.

Cluster strategy in the context of Eastern Region development

The concept of industrial clusters may facilitate the understanding of ideas built into the AIC, particularly in the context of the economic development of El Salvador focusing on the Eastern Region with the La Union port. The four key determinants of industry competitiveness identified by Michael Porter are:

(1) factor conditions – availability and quality of production factors such as resources, infrastructure and capital,
(2) home demand conditions – existence of domestic market responsive to such high quality products that may be demanded in the international market as well, and
(3) related and supporting industries, and
(4) industry strategy, structure and competitiveness.

The existing conditions of these determinants are not all favorable in El Salvador and even less so in the Eastern Region. The situation may change drastically with the establishment of the La Union port. The Eastern Region development may be seen as a process to cause favorable changes to these determinants to enhance competitiveness of the Salvadoran economy. Main changes expected in the Eastern Region with respect to each determinant are as follows.

Determinant of competitiveness	Expected changes in the Eastern Region
(1) Factor conditions	Increased availability of raw materials and intermediate goods through import; improved port and related infrastructure; inflow of investment capital and technology
(2) Home demand conditions	Increased demand for high quality products linked through processing and services to export market; growing urban markets
(3) Related and supporting industries	Establishment of port-oriented industries in FZ; development of indigenous industries linked to FZ
(4) Industry strategy, structure and competitiveness	Coherent industry strategy across subsectors; “coopetition” among industries under the regional development strategy

The success of any industrial cluster depends on effective utilization of external economy due to the agglomeration of industries by means of some joint actions of inter-related industries in the competitive environment. For this to be possible, the cluster needs some depth to allow the division of works, accumulation of technologies, and intensive information flow between the industries. It is well known, however, that those industries to locate in FZ do not develop initially strong linkages with indigenous industries. This means that the determinant (3) above would not improve much with the establishment of the La Union port alone.

Applicability of cluster strategy

There are different ways to apply the cluster strategy to economic development in any country or region. A typical way is to take a primary good that has the competitive advantage and promote related economic activities with forward or backward linkages to internalize and increase value-added and strengthen the competitive advantage for a whole set of goods involved in the chain of economic activities. This may not be widely applicable to the economy of El Salvador having limited primary goods with the competitive advantage. Indigo and cashew may prove to be exceptions, but with these primary goods alone indigenous industries may not be fully developed to have sufficient impact on the Salvadoran economy as a whole.

The existing sugar industry in El Salvador, on the other hand, has established a sort of cluster based on sugarcane, a primary good having relatively low competitive advantage. Through a chain of processing activities to increase value-added, the industry has established comparative advantages for various processed goods including molasses, feed and liquor as well as brown and refined sugar. Some products are exported; hence, the comparative advantage. Maize is another primary good having relatively low competitive advantage, but is processed into feed to serve the livestock industry for much higher overall value-added. Competitive advantage of livestock products, typically cheese, however, is threatened by import from neighboring countries including smuggling.

Extensions of cluster strategy to the AIC

For effective utilization of external economy, some depth should be ensured to allow inter-industry interactions. As clarified above, the La Union port alone would not contribute much to increasing the depth. Therefore, the existing and potential indigenous industries would have to be utilized to internalize and increase value-added. There exist, however, only limited primary and processed goods in El Salvador and in the Eastern Region having the competitive advantage. To establish comparative advantages of those primary and processed goods having relatively low competitive advantage, a wider range of economic linkages should be effectively utilized. This would require extending the cluster strategy beyond a horizontal cluster of a single economic activity or a simple vertical cluster centering on a single primary good. A whole set of interrelated economic activities, existing and potential, defines the AIC, encompassing both horizontal and vertical clusters.

"If local industries are unproductive, they are going to bring down the export industries as well." – Michael Porter

"Porter cautioned governments (of Latin American countries) against focusing on specific clusters, encouraging them instead to allow all clusters, in both traditional and nontraditional industries, to participate in the development process."

References:

1. Website of the Institute for Strategy and Competitiveness, Harvard Business School accessed on April 1, 2003.
2. JICA, *Industrial Projects Follow-up Study, I. Cluster Analysis*, draft report (in Japanese), Industrial Development Studies Dept., July 22, 2002.
3. C. Quesada, "The Productivity Marathon," IDB America, April 24, 2002, posted in IDB America Online, December 2002.

Distribution and marketing services will be upgraded with IT. Both BPO back and front services will be further promoted. BPO back services will contribute to employment generation and skill training. For BPO front services, CRM services for Central America will further develop.

The local cruise industry will be fully established, supported by core tourism facilities in the La Union-Conchagua area. Tour itineraries will be developed jointly with tour operators in

Honduras and Nicaragua.

(3) Spatial development

Physical and economic linkages between larger urban centers for the polar development during Phase 1 will become stronger, and logistic circuits will be formed linking other secondary towns as well. A bypass for San Miguel and a new link between the highways CA1 and CA2 to shortcut the travel between La Union and Usulutan will be constructed. Continued improvement of rural roads and stepwise establishment of the northern longitudinal road will improve access from other parts of the Eastern Region to the logistic circuits.

A major breakthrough will be attained for the management of water and related land resources in the Rio Grande de San Miguel basin by the construction of a multipurpose dam, the first of the kind in El Salvador. This will change the land use pattern and spatial development as a whole as the dam provides better flood protection along the middle reach of the Rio Grande, combined with dykes and embankment.

7.2.3 Phase 3: 2015-19

Phase 3: 2015-19

Increasingly service-oriented development → Sustainable growth
- Human resources equipped with IT → High grade, human-oriented services
- Logistic center → Transshipment of goods to/from neighboring countries
  Export processing
  Services export

Resources-based development during Phase 1 in combination with IT-oriented human resources development particularly associated with the La Union port development will induce the development of broad logistic functions through Phase 2. Through this process, capital and technical expertise will accumulate and markets expand. Based on these, sustainable growth will be attained during Phase 3 by increasingly service-oriented development.

Continual innovations will allow El Salvador and the Eastern Region to enjoy international fame for quality agro-products and other specialty products. Human resources equipped with IT will support high grade, human oriented services, such as BPO operations, higher education and training, and advanced medical services. Some of them will become export industries serving other countries in Central America as well.

As logistic functions become increasingly an integral part of manufacturing in the free trade regime, a logistic center will best characterize the Eastern Region with the La Union port. Transshipment of goods to/from neighboring countries by the port and the dry canal, export processing, and services export will eventually become main activities for sustainable growth of the Region.

7.3 Impact of La Union Port Revitalization on the Eastern Region and El Salvador

As the La Union port is revitalized in steps as envisioned in Section 7.1, the socioeconomic and the spatial development of El Salvador as well as the Eastern Region will change in various aspects. In this section, likely changes are described to indicate the nature, direction and magnitude of the impact of the La Union port revitalization. Impact on some areas or aspects is quantified in line with the development frameworks for the master plan. This impact assessment is meant to be neither a prediction nor even a projection but rather it represents rational reasoning to anticipate likely changes. Quantified impact, if such is given, is meant to facilitate the visualization of the likely changes. For each aspect of impact, likely changes in the Eastern Region are presented, and their implications to El Salvador as a whole are mentioned for some aspects.

(1) Image and status of the Eastern Region

The Eastern Region at present is a poverty-stricken outmigration region of the Country, relying most heavily on overseas remittance. There exists neither maquila industry nor any major economic activity to symbolize the Region. Moreover, the Eastern Region suffers from poor images of crime, delinquencies and violence. This situation will certainly change for better with the La Union port.

The establishment of the La Union port symbolizes the priority policy of the Government for the Eastern Region. It will bring the Region from a marginal position to the center, which would have serious political implications as well. More substantively, the La Union port area is expected to become a center in the free trade and globalizing economy, where El Salvador places itself. Specifically, El Salvador as well as the Eastern Region will enjoy international fame for quality agro-products and other specialty products and high-grade, human oriented services such as BPO services, higher education and training, and advanced medical services. The logistic functions in the Eastern Region will support El Salvador as a transshipment center in Central America.

(2) Commodity flow

Some of the export commodities currently transported via the Acajutla port and ports in Guatemala and Honduras, such as textiles and clothing, coffee and sugar, will be diverted to the La Union port. New commodity flow will be generated for export and also for the port city of La Union. As the port is established and increasing foreign and domestic investments locate around the port area, the population of the La Union city will expand. Also, foreign communities and the rich may demand more high-grade commodities. In particular, the demand for daily consumption goods will increase, including vegetables and fruits, dairy products, and beverages. Also, more diversified consumer goods may be imported for distribution in the Eastern Region and the neighboring countries near the border.

Additional products to be produced in the Eastern Region as envisioned will generate more export cargoes than projected by the previous studies. The export volume of these products in 2019 is roughly estimated below consistently with the value-added projection in Section 6.1.

Commodity	Production (ton)	Export ratio (%)	Export volume (ton)
Cheese	6,000	40	2,400
Vegetables	150,000	10	15,000
Kenaf fibers	75,000	60	45,000
Coffee	8,000	60	4,800
Fruits	150,000	20	30,000
Cashew	6,000	80	4,800
Honey	1,500	60	900
Sugar	72,000	50	36,000
Construction materials			20,000
Agricultural machinery & equipment			10,000
	Total		168,900

Including other products of export processing, the total additional export could be some 250,000MT, mostly container cargoes except sugar.

Also, the comparative analysis on transport costs indicates that transshipment through the La Union port would be promising for long distance cargo transport for the U.S. west coast, particularly from Nicaragua and Honduras, and marginally from Guatemala and Costa Rica. Transshipment for Asia to/from all the major ports on the Pacific side of Central America on the net cost basis appears to be promising as long as full container loads are ensured. This potential may add some 100,000MT to the export cargo demand at the La Union port.

The volume of container cargoes is projected by the previous studies at some 930,000MT for import and 400,000MT for export in 2015. The additional export cargoes estimated above would improve the balance between import and export, and thus contribute to the reduction of freight costs. The additional import and export cargoes can be handled at the La Union port as the occupancy rate of the container berth is estimated at 43% even in 2015.

This change in commodity flow implies that the comparative positions of different regions for industrial location will change in El Salvador. For instance, the availability of import feed and feed gradients will be improved in the Eastern Region for cattle and poultry farming, and some poultry operations may shift from the Western region. Also, more construction material industries will establish in the Eastern Region to import intermediate goods for processing.

(3) Land traffic generation

According to the DD of the La Union port, an average of 355 container boxes will be handled over 12.1 hours per vessel in 2005, which is projected to increase to 812 boxes over 17.9 hours per vessel in 2015. This implies the traffic of container trucks at every two minutes on average

or 720 trucks/day in 2005, and 45 container trucks/hour or 1,080 trucks/day in 2015.

According to the OD survey, the traffic between San Miguel and La Union over 12 hours is about 3,500 vehicles. As the population increases rapidly in both cities, the intercity traffic may increase up to 14,000 vehicles. Including local traffics, the total number of vehicles on the highway between San Miguel and La Union would be 20,000 vehicles/day, more or less. This is comparable to the heaviest traffic currently observed on the primary roads around San Salvador (Figure 7.2).

(4) Investment distribution

The Eastern Region's share in the public investment was 22.5% of the total in 1996-99 and 21% in 2000. The large allocation during 1996-99 is due to the geothermal development, and consequently Usulutan received a 14.2% of the total public investment during this period. San Salvador received 32.9% in 1996-99 and 31% in 2000. The Eastern Region contributed to only 3.3% of the value-added tax collected in 2000, reflecting the lack of major industries. The contribution is largest at 2.2% in San Miguel, but much smaller at 0.6% in Usulutan, 0.3% in La Union and 0.2% in Morazan. San Salvador contributed the most with a 23.5% share, followed by La Libertad with 16.0%. Investments in the La Union port and related infrastructure will increase the allocation of the public investment to the Eastern Region significantly.

Since the La Union port revitalization is a national project to contribute to the economic development of El Salvador as a whole, unprecedented levels of allocation will be justified. These levels are examined in the light of expected macroeconomic performance of El Salvador (Section 9.5).

Free trade zones (FZs) will be established in the port area and also in the inland. A total of 100ha may be developed, including 50ha allocated to the portside FZ where the land is relatively flat. The establishment of 150 industries is expected for the cumulative investment ofUS$380 million over a 15-year period more or less. Port-induced investments are expected in various services as well as some domestic industries. Moreover, demand-driven investments are expected, associated with the development of the La Union city with its urban market.

(5) Value-added and employment generation

Port-related activities and FZs

According to the current plan, the establishment of the La Union port will generate some 450 employment opportunities during the construction period, and additional 1,500 jobs will be created for port operation. Port-related activities may generate some 2,500 jobs, and employments to be generated in free zones may be up to 10,000. In total, some 15,000 employment opportunities may be generated in the port area and its immediate hinterland alone.

Of the total employment, 6,000 may be in the industry sector and 9,000 in the services sector. Applying the projected labor productivity (Subsection 6.1.2), the value-added generation by port-related activities and FZs is estimated to be US$43.5 million in industry and US$82.8 million in services for a total of US$126.3 million. This may be realized over a 10 to 15-year period starting in 2007.

Agro-industrial complex (AIC)

The value-added and employment due to the AIC are estimated on the same basis applied to the micro estimates of agricultural and industrial value-added (Subsection 6.1.3). Only the representative subsector industries and products are taken for the estimate. The results are summarized in Table 7.10. As seen in the table, the AIC is expected to generate the total value-added of US$453.6 million and 57,200 employment opportunities in 2019.

Table 7.10. Estimate of Value-added and Employment Generation by AIC

Activities & products	Agriculture		Manufacturing		Total	
	Value-added (US$10^6)	Labor	Value-added (US$10^6)	Labor	Value-added (US$10^6)	Labor
Dairy farming & processing						
Green maize & sorghum (69,800ha)	104.2	19,500				
Managed pasture	14.2	3,900				
Meat & milk	152.9	5,500				
Cheese			13.8	1,600	285.1	30,500
Complete cycle processing						
Cashew (5,000ha)	7.8	1,200				
Processed nuts			26.4	3,100		
Cashew wine			24.0	2,800		
Sugarcane (12,500ha)	15.9	3,500				
Refined sugar			7.2	800		
Liquor			3.9	400	85.2	11,800
Niche market-oriented industries						
Kenaf (5,000ha)	6.2	4,000				
Kenaf fibers			15.4	1,800		
Indigo (3,000ha)	3.7	1,600				
Indigo dye			2.0	200		
Honey	2.4	1,000				
Refined honey			9.6	1,100	39.3	9,700
Supporting industries						
Construction materials			29.0	3,400		
Agricultural machinery & equipment			15.0	1,800	44.0	5,200
Total	307.3	40,200	146.3	17,000	453.6	57,200

Sources: Table 6.4 and Table 6.6.

(6) Migration pattern

The Eastern Region has been a net outmigrating region. Even in the post civil war period, when many refugees and some migrants returned to the Country, the population growth in the

Region was lower than the rate of natural increase. Although both death and birth rates have been reduced significantly, crude birth rates are still high in the four departments of the Eastern Region, ranging from 27.4 per 1,000 in Usulutan to 32.3 per 1,000 in Morazan in 1998. Consequently, the natural population increase in the Region is still high at 2.2% per annum. The natural population increase exceeds the overall population growth in three departments except San Miguel. For the Eastern Region as a whole, the difference between the natural population increase and actual growth is about 0.6%, indicating that some 8,000 people outmigrate annually at present.

The two kinds of new economic activities analyzed above will generate incremental value-added of US$580 million in total and incremental employment of 72,200 in 2019. The incremental employment corresponds to the population of 165,800 by applying the labor force coefficient and the labor participation ratio expected in 2019 (Subsection 6.1.3). That is, over 10,000 people will be attracted annually on average by the new economic activities alone. Thus, the Eastern Region is expected to turn into a net immigrating region in 15-year time.

(7) Economic structure

At present, the agricultural sector accounts for slightly over 20% of the gross regional domestic products (GRDP) of the Eastern Region, the industry sector including manufacturing, mining, utilities, and construction little less than 20%, and the services sector close to 60%. As the Eastern Region develops, the economic structure will change significantly.

Agriculture will realize renewed growth with increasing productivity to ensure self-sufficiency in basic grains and milk, enough raw materials supply for agro-processing, and quality feed for livestock. The agricultural growth, however, would be high enough at most to maintain the present rural population. Industry will provide the driving force for the Eastern Region development with export processing and indigenous (mostly agro-processing) industries. The services sector will attain the highest growth with diversification, including some higher-order services such as higher education and advanced health services. In the 15-year period, the share of the agriculture may be halved, that of industry may reach 20%, and services will have a dominant share over 65%. These are quantified in Subsection 6.1.2 as a socioeconomic framework for the Eastern Region development.

The contribution of the Eastern Region to the national economy in terms of GDP is currently 28.2% for agriculture, 8.1% for industry, and 13.8% for services. The GRDP of the Eastern Region was only 13.5% of the GDP in El Salvador. These contributions would increase significantly in the next 15 years. The existing gap between the per capita GDP and the per capita GRDP is expected to narrow to within the 10% range. These are quantified also in Subsection 6.1.2.

(8) Spatial structure

Urbanization will proceed in the Eastern Region. This is not only inevitable but in fact desirable to enhance the service functions of urban centers and also to support much higher productivity in the rural areas. At present, 40% of the Eastern Region is urban. The urban population will more or less double in 15 years to exceed 1.0 million while the rural population will stay at the present level or slightly decline to 750,000. As a result, the urbanization ratio will reach 58%, which is equivalent to the current urbanization ratio in the Country.

The population of La Union city will expand most rapidly as the city is expected to become a growth center with multiple functions. Together with San Miguel city some 40km away, the combined population will reach 500,000 more or less. Population and economic activities will concentrate in the area delineated by the highway CA-1 and the primary road linking San Miguel, Santa Rosa de Lima, El Amatillo, and Usulutan city. The combined population of the core area encompassing these cities may come close to 1.0 million. The planned northern longitudinal road and other north-south link roads would improve access to this core area from the La Union port. These links would expand both the market for some consumer goods to be imported via the La Union port and the resources base for the urban market and the processing industries in the core area.

The development of the Eastern Region, particularly with the La Union port and the creation of the development core having a population of one million, would improve the balance between the San Salvador Metropolitan Area and other regions. Also, it would contribute to physical and socioeconomic integration of El Salvador and the neighboring countries. In particular, the proposed inter-oceanic logistic corridor linking the La Union port and the port of Cortes in Honduras will induce much increased trade between El Salvador, Honduras and Nicaragua.