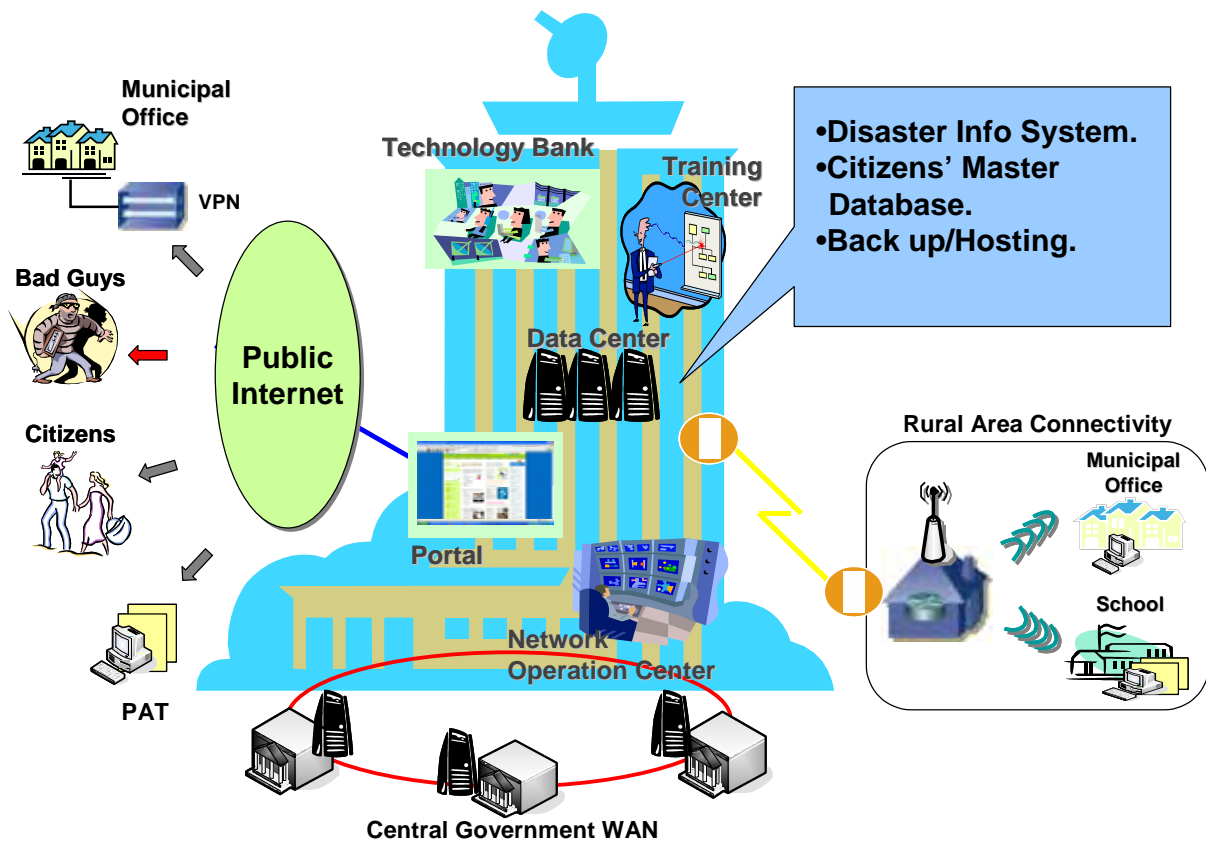


THE FEASIBILITY STUDY ON ESTABLISHMENT OF THE *e*-GOVERNMENT PLATFORM IN THE REPUBLIC OF EL SALVADOR

FINAL REPORT

DECEMBER 2006





REPUBLIC OF EL SALVADOR
PRESIDENTIAL HOUSE
TECHNICAL SECRETARIAT



JAPAN INTERNATIONAL
COOPERATION AGENCY
(JICA)

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Abbreviations

3G	Third Generation (of mobile telephone system)
ADSL	Asymmetric Digital Subscriber Line
AMI	Autopista Mesoamericana de la Información
ATM	Automatic Teller Machine
B2B	Businesses to Businesses
B2C	Businesses to Consumers
CRM	Customer Relationship Management
G2B	Government to Businesses
G2C	Government to Citizens
GDP	Gross Domestic Product
GIS	Geographic Information System
GITR	Global Information Technology Report
GNI	Gross National Income
HIPCs	Heavily Indebted Poor Countries
IC	Integrated Circuit
ID	Identity
IP	Intellectual Property
ISP	Internet Service Provider
IT	Information Technology
LAN	Local Area Network
MCT	Multipurpose Community Telecenters
MRP	Material Requirements Planning
NAP	Neutral Access Point
NGO	Non-Governmental Organization
O&M	Operation and Maintenance
ODA	Official Development Assistance
P2P	Pier to Pier
POP	Point Of Production
POS	Point Of Sales
SME	Small Medium Enterprise
SMS	Short Message Services

Organizations

ANDA	Administración Nacional de Acueductos y Alcantarillado
ASPROC	Asociación Salvadoreña de Profesionales en Computación
ASIA	Asociación Salvadoreña de Ingenieros y arquitectos
BCR	Banco Central de Reserva
BFA	Banco de Fomento Agropecuario
BMI	Banco Multisectorial de Inversiones
BPO	Business Process Outsourcing
C&W	Cable and Wireless (corporate name)
CAFTA	Central America Free Trade Agreement
CBTPA	U.S. Caribbean Basin Trade Partnership Act
CIG	Center of Geological Research in El Salvador
CITESD	Centro de Investigación Tecnológica en Seguridad de Datos
CNR	Centro Nacional de Registros
COMTRADE	United Nations Commodity Trade Statistics Database
CONACYT	Consejo Nacional de Ciencia y Tecnología
CONATO	Council of Organized Workers
CORSATUR	Salvadorian Corporation of Tourism
DIGESTYC	General Direction of Statistics and Surveys
ERP	Enterprise Resource Planning

ESCCI	Salvadorian Chamber of Commerce and industry
FISDL	Fondo Nacional para el desarrollo local de El Salvador
FONAVIPO	Fondo Nacional para la vivienda popular
FSV	Fondo Social para la vivienda
FUSADES	Salvadorian Foundation for the Social and Economic Development
ICT	Information Communication Technology
IDA	International Development Association
IDB	Inter-American Development Bank
IIPA	International Intellectual Property Alliance
IITT	Institute of IT Training
INFOVED	Information for Development Program (in World Bank)
INSAFORP	Instituto Salvadoreño de Fortalecimiento Profesional
INTELCO	International Telecommunications Ltd.
ISCED	International Standard Classification of Education
ISIC	International Standard Industrial Classification
ISSS	Instituto Salvadoreño del Seguro Social
ISTU	Instituto Salvadoreño de Turismo
ITCA	Instituto Tecnológico Centroamericano
ITU	International Telecommunication Union
MAG	Ministerio de Agricultura y Ganadería de El Salvador
MH	Ministerio de Hacienda (El Salvador)
MIF	Multilateral Investment Fund
MINEC	Ministerio de Economía
MINED	Ministerio de Educación
MINTRA	Ministerio de Trabajo
MOP	Ministerio de Obras Públicas y Transporte
MRE	Ministerio de Relaciones Exteriores (El Salvador)
NAFTA	North American Free Trade Area
NCIS	National Commission for Information Society
PMRTN	Plan Maestro para la Reconstrucción y Transformación Nacional
PNUD	Programa de las Naciones Unidas para el Desarrollo
PPP	Plan Puebla Panama
PROCOMER	Center for Export and Investment Promotion
SCM	Supply Chain Management
SCT	Secretariat of Communications and Transport
SEGEPLAN	Secretariat of Planning and Programming
SIGET	Superintendencia General de Electricidad y Telecomunicaciones
SNET	Servicio Nacional de Estudios Territoriales
SSF	Superintendencia del Sistema Financiero
UCA	Universidad Centro Americana “Dr. José Simeón Cañas”
U.K.	United Kingdom
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNDPEPA	United Nations Division for Public Economics and Public Administration
U.S.A	United States of America
USGS	U.S. Geological Survey
WB	World Bank

Chapter 1 Introduction

1.1 Study Background

Seven Central American countries (Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama) plus Mexico are promoting the Plan Puebla Panama, PPP, a regional development plan with eight main topics and one country in charge of each of the main topics. El Salvador is in charge of the Electronic Government (*e*-Government) and is expected to play a major role in ICT development in Central America.

The Japan Bank for International Cooperation (JBIC) carried out a Study for Project Formation for the ICT sector in the PPP countries in 2003. The JBIC Study covered the IT sectors in the eight PPP countries listing main issues and recommendations for each country. The subsequent Master Plan for El Salvador proposed priority projects that are suitable for a yen loan. The current study is a feasibility analysis of establishing an *e*-Government Platform recommended in the JBIC Study.

The JBIC study examined six categories in the eight PPP countries calculating a maturity index composed of organization framework, government IT usage, economic sectors, human resources, citizens' IT usage, and communication infrastructure.

The JBIC Study to provide the IT Master Plan was completed under the previous government. However, the new government of El Salvador has continued dialogue with the government of Japan, and the Ambassador of Japan, Mr. Akio Hosono made a presentation to the President of El Salvador, Mr. Antonio Saca, on August 20th 2004.

In consideration of all the above the Government of El Salvador requested the Government of Japan to carry out a feasibility study of establishing an *e*-Government platform in El Salvador. The Government of Japan appointed the Japan International Cooperation Agency (JICA) to undertake the study. JICA in turn engaged the consulting firm PADECO Co., Ltd. to implement the study (the Study Team). A JICA mission was sent to El Salvador to determine the Scope of Work of the study from January 15th to 20th, 2006. An agreement was signed on January 20th, 2006 between the two parties, and the Study was commenced immediately.

The Study Team started work on 4th of January 2006, and has worked in El Salvador in four separate periods till November 21st, 2006. A final presentation in San Salvador was made in November 16th, 2006.

In addition, this Study Team also assisted the government in preparing a request for a grant for a new office building, which is to house a new *e*-Government Center. A grant request has been submitted by the authorities of El Salvador to the Embassy of Japan. The need for a building is evident from our analysis, and a study was needed to support the request for safe and secure infrastructure. The team assisted the local authorities in preparing the grant proposal.

1.2 Objectives of the Study

The objective of the Study is to prepare a concrete plan for establishing an *e*-Government platform in El Salvador in consideration of subsequent plan implementation to be financed by some sources including a JBIC loan.

1.3 Study Organization and Schedule

The Study was carried out by a team of 7 experts dispatched by PADECO Co., Ltd. of Japan under a contract with JICA. The counterpart agency in El Salvador was the Technical Secretariat, the Presidential House, the Republic of El Salvador. A progress report was submitted in March 2006, an Interim Report in August 2006, a Draft Final Report in October 2006, and The Final Report (this report) in November 2006.

The composition of the Study Team and their work schedule are shown in Figure 1.1.

Consultant	Name	Month	Year													
			2005					2006								
			1 Dec	2 Jan	3 Feb	4 Mar	5 Apr	6 May	7 Jun	8 Jul	9 Aug	10 Sep	11 Oct	12 Nov	13 Dec	
			Field				Home									
1	Team Leader / General Planning	Yuichiro Motomura		■		■			■		■			■		■
2	System/Information Network Design	Isao Takatori		■	■		■		■		■		■		■	
3	Legal System / Organization	Marco Kamiya		■	■		■		■		■		■		■	
4	Economic / Financial Analysis	Kinuyo Fukuda		■		■			■		■		■		■	
5	Information Network Design 2	Yoshinori Kurachi		■		■			■		■		■		■	
6	Application Design	Naoya Higashi							■		■			■		
7	Equipment/Facility Design	Muneki Ikegami		■		■			■		■		■		■	
Workshop											△			△		△
Deliverables / Reports				▲		▲							▲		▲	▲
				IC/R		P/R							IT/R		DF/R	F/R

Source: JICA Study Team

Figure 1.1 The Study Plan and Work Schedule

Chapter 2 Economy and the Government

2.1 Socio-economic Profile

2.1.1 Social Profile

Reflecting increase in government spending for the social sector since the end of the 12-year war in 1991, there has been improvement in literacy rate, life expectancy and poverty indicators although the improvement rates have become slower after 2001. Although the literacy gap between the sexes and between the urban and rural population has narrowed in the past decade, the poverty gap between the urban and rural population and the income gap between the rich and poor have not improved over the period.

(1) Population

El Salvador has the population estimated at 6.9 million in 2005 with the population density of 326.7 people per km², relatively high for Latin America. El Salvador is the smallest country in Central America with 21,040km² of land. According to National Agency of Statistics and Census, total population has increased by 2.3% between 1992 and 2005. In addition to 6.9 million living in the country, it is estimated that there are approximately 1.5 million Salvadorian emigrants living abroad, mostly in the United States.

Table 2.1 Demographic Trend (Thousand)

	1950	1992	2005*
Population	1,951	5,119	6,875
Average Annual Growth Rate	-	2.3%	2.3%

*Estimate

Source: National Agency for Statistics and Census

Some 32% of the total population is concentrated in the Department of El Salvador. Combined population of the Departments of San Salvador and La Libertad accounts for 43.4% of the total. The country's population is very young with 34% having less than 15 years in 2004. UNDP expects the share of the population under 15 years old to decrease to 29.8% in 2015. The urban population is estimated to be 59.4% of the total in 2003 and projected to be 64.2% in 2015.

Table 2.2 Population by Department in 2005 (Estimate)

Department	Population	% to Total	Y/Y Change
Ahuachapán	354,578	5.2%	2.1%
Santa Ana	606,773	8.8%	1.9%
Sonsonate	506,420	7.4%	2.4%
Chalatenango	203,035	3.0%	0.6%
La Libertad	784,478	11.4%	2.6%
San Salvador	2,198,193	32.0%	1.8%
Cuscatlán	212,501	3.1%	0.9%
La Paz	318,107	4.6%	1.7%
Cabañas	156,964	2.3%	0.5%
San Vicente	170,937	2.5%	1.2%
Usulután	347,855	5.1%	0.6%
San Miguel	533,738	7.8%	2.2%
Morazán	178,897	2.6%	0.6%
La Unión	302,450	4.4%	0.9%
Total	6,874,926	100%	1.7%

Source: National Direction for Statistics and Census

Table 2.3 Age Structure of El Salvador (2004 Estimate)

Age	% Total
Up to 9	22.4%
10 to 14	11.6%
15 to 64	59.1%
Over 65	6.9%
Total	100%

Source: National Agency for Statistics and Census

According to UNDP, life expectancy at birth of Salvadorians has improved from 66.3 years in 1990, 69.4 years in 1998 to 70.9 years in 2003, ranking 82th out of 177 countries in the world.

Table 2.4 Life Expectancy at Birth (2003 Estimate)

Rank	Country	Years
1	Japan	82.0
2	Hong Kong	81.6
3	Iceland	80.7
82	El Salvador	70.9
177	Swaziland	32.5

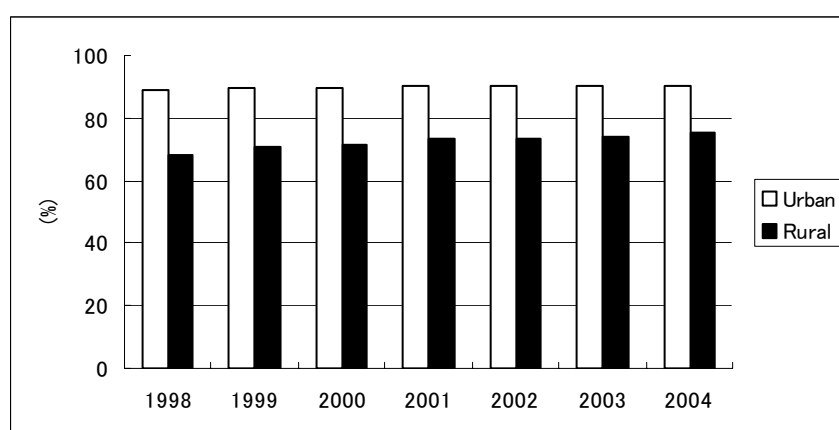
Source: UNDP

(2) Literacy Rate and Education

The government budget for education to GDP has increased from 2.0% in 1990 to 3.2% in 2000, which has been well reflected in improvement in literacy rate and school enrollment rate.

According to UNDP, overall adult literacy rate has improved from 72.4% in 1990 to 79.7% in 2003. The literacy rate for the youth of 15-24 years old was 88.9% in 2003, indicating overall literacy figure will improve further in the coming years. Female literacy rate was 77.1% for adults and 88.1% for the youth in 2003, indicating the diminution of the gap between the sex. El Salvador targets at 100% literacy rate of the youth by 2015, which is reported to be achievable.

The following figure contrasts the literacy rate of urban and rural areas. Literacy rate in urban and rural areas increased by 1.6% point 7.1% point respectively in 1998-2004, diminishing the gap between the two.



Source: National Agency for Statistics and Census

Figure 2.1 Literacy Rate in Urban and Rural Areas

According to UNDP data, net enrollment ratio of primary, secondary and tertiary schools was 90%, 49% and 19% respectively in 2003. El Salvador had 68% of combined primary, secondary and tertiary gross enrollment ratio in 2002/2003, ranking 113th out of 173 countries.

Table 2.5 Combined Primary, Secondary and Tertiary Gross Enrollment Ratio (%) in 2002/2003

Rank	Country	%
1	United Kingdom	123%
2	Australia	116%
3	Belgium	114%
113	El Salvador	68%
173	Niger	21%

Source: UNDP

(3) Poverty

The government current budget for social sector relative to GDP has more than doubled from 4.1% in 1990 to 9.8% in 2003, which has been reflected in improvement in poverty alleviation. Despite overall poverty improvement, however, there still exists a gap between the urban and rural.

According to the National Agency for Statistics and Census, the population below the poverty line fell to 38.9% in 2002 since the end of 12-year civil war in 1991, when it recorded 57.8%. As the table below shows, however, it has not improved so much in the rural area as in the urban area. The government intends to half the rate both in urban and rural areas in 1990-2015. It is estimated that the rural target may not be achievable although the urban and overall targets will likely be met.

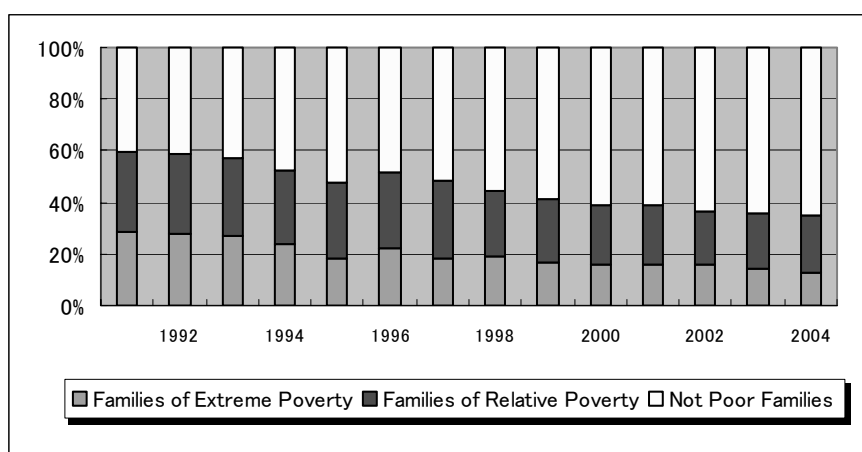
Table 2.6 Population below Poverty Line (%)

	1991	2002	2015*
Total	57.8%	38.9%	28.9%
Urban	38.7%	22.5%	19.3%
Rural	75.2%	62.5%	37.6%

*Estimate

Source: National Agency for Statistics and Census

Families of ‘extreme’ and ‘relative’ poverty¹, another indicator of poverty, have decreased remarkably since 1991. Total families of extreme poverty decreased by 51% in 1991-2004. Improvement in this indicator, however, has become slower since 2001 as shown in the table below.

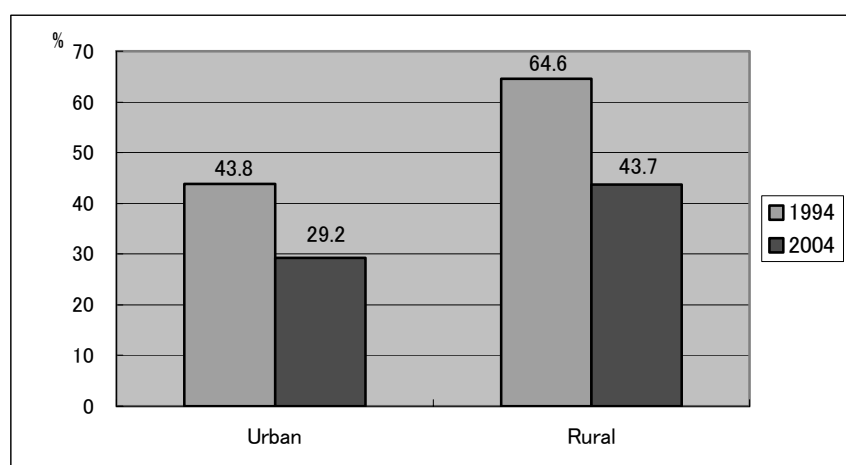


Source: National Agency for Statistics and Census

Figure 2.2 Families of Extreme and Relative Poverty

¹ A family of extreme poverty and relative poverty, by definition, is a family with average monthly income of less than US\$137.3 and less than US\$274.6 respectively in 2005.

As the figure below shows, the share of poor families decreased by 32% both in urban and rural areas in 1994-2004. Nonetheless the share of poor families in rural areas stands high at 43.7% and there still exists a gap between the urban and rural areas in terms of poverty.



Source: National Agency for Statistics and Census

Figure 2.3 Share of Total Poor Families (Extreme and Relative Poverty) in Urban and Rural

The following table summarizes UNDP's Human Development Index (HDI)² for El Salvador. The country ranked 103th out of 177 developing countries with HPI value of 72.6% in 2002 and 104th out of 177 countries in 2003. The Department with the highest HDI is San Salvador and the lowest is Morazan in 2004. Though the indicator has been improving, the improvement rate has slowed down in recent years.

Table 2.7 HDI of El Salvador by Province

	1996	1999	2002	2004
Total	0.688	0.704	0.726	0.732
Ahuachapán	0.648	0.626	0.652	0.682
Cabañas	0.575	0.609	0.637	0.656
Chalatenango	0.612	0.642	0.663	0.680
Cuscatlán	0.669	0.697	0.713	0.714
La Libertad	0.703	0.727	0.752	0.741
La Paz	0.656	0.668	0.687	0.701
La Unión	0.578	0.628	0.662	0.673
Morazán	0.562	0.619	0.646	0.624
San Miguel	0.671	0.689	0.704	0.709
San Salvador	0.757	0.765	0.783	0.788
San Vicente	0.626	0.647	0.669	0.683
Santa Ana	0.671	0.687	0.708	0.707
Sonsonate	0.665	0.669	0.696	0.716
Usulután	0.645	0.655	0.689	0.697
Ranking in the world	-	-	103/177	-

Source: UNDP

² The human development index (HDI) focuses on three measurable dimensions of human development: living a long and healthy life, being educated and having a decent standard of living. It combines measures of life expectancy, school enrolment, literacy and income to allow a broader view of a country's development than does income alone.

(4) Equity

According to 2005 UNDP Human Development Report, total Gini coefficient was 0.48 by family income and 0.5 by income per capita in 2004. Gini coefficient of El Salvador has deteriorated in 1996-2002 but has improved in 2003 and 2004. Overall Gini coefficient for 2004 remains at almost the same level as 1996 coefficient. It could be said that the gap between the rich and the poor has not narrowed despite overall poverty improvement.

As for the household income/consumption share, the lowest 10% and lowest 20% had 0.9% and 2.9% of the total while the highest 10% and 20% had 40.6% and 57.1% in 2000 according to UNDP.

Table 2.8 Historical Trend of Gini Coefficient

		1996	1997	1998	1999	2000	2001	2002	2003	2004
Gini by Family Income	Total	0.48	0.48	0.50	0.50	0.49	0.51	0.52	0.50	0.48
	Urban	0.44	0.44	0.46	0.46	0.45	0.48	0.49	0.47	0.45
	Rural	0.45	0.42	0.46	0.47	0.47	0.48	0.48	0.47	0.46
Gini by Individual Income	Total	0.51	0.51	0.52	0.52	0.52	0.53	0.54	0.51	0.50
	Urban	0.47	0.47	0.48	0.47	0.47	0.49	0.50	0.48	0.47
	Rural	0.45	0.44	0.46	0.47	0.47	0.49	0.49	0.48	0.47

Source: UNDP

(5) Ethnic and Religion

Ethnically, the overwhelming majority of people (90%) are classified as mestizos with 9% whites and 1% Amerindians according to the World Factbook (<https://www.cia.gov/cia/publications/factbook/>). Some 83% of the total population is Catholic according to the same source.

2.1.2 Economic Profile

(1) Production (GDP)

GDP rebounded by 6% a year in early 1990s of post-war reconstruction period after being contracted by 2% a year in 1980s. It then slowed down again from mid-1990s, despite a wide range of reforms including trade liberalization, privatization, increased labor market flexibility, strengthened banking system, and fiscal reform, and slowed down further to 2% during 2001-2005. GDP per capita growth was even worse at a mere 0.2% on average in 2001-2005.

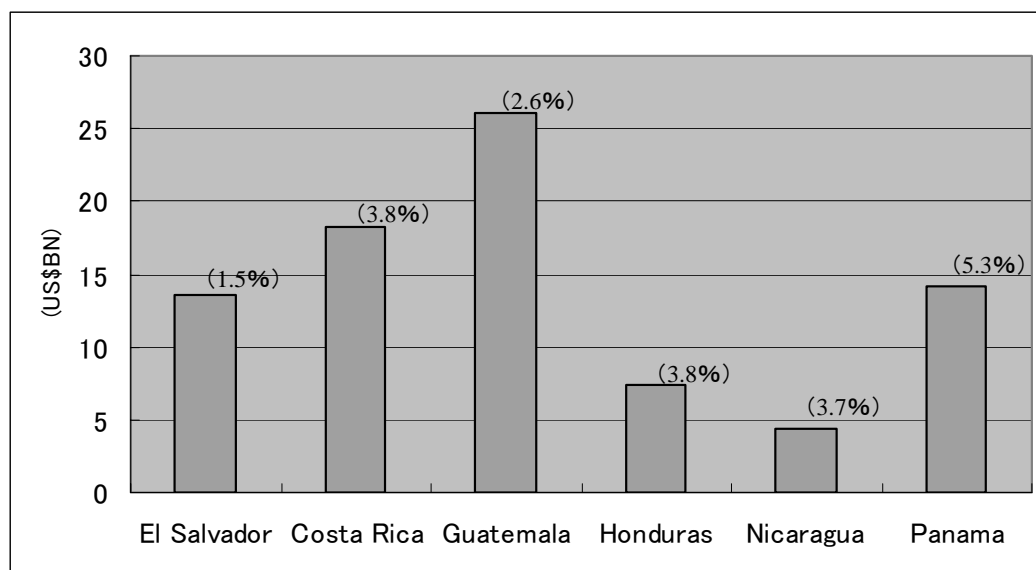
According to the preliminary result, the performance of 2005 was relatively high with GDP growth of 2.8% and GDP per capita growth of 1.1%. However, the seemingly good performance of 2005 was mainly due to the poor performance of 2004 caused by delay in parliament budget approval till the middle of the year. GDP growth of El Salvador has been slower than other countries in the region in recent years.

Table 2.9 GDP and GDP per Capita

	2001	2002	2003	2004	2005*
GDP (Current US\$ Million)	13,813	14,312	14,940	15,824	17,017
Real GDP Change Y/Y	1.7%	2.2%	1.8%	1.5%	2.8%
GDP per Capita (Current US\$)	2,149	2,198	2,250	2,342	2,475
Real GDP per Capita Change Y/Y	-0.2%	0.3%	0%	-0.2%	1.1%

Source: Central Bank of Reserve

El Salvador has the third largest GDP in Central America after Guatemala and Costa Rica. Real GDP growth of El Salvador has been weaker than the other countries in the region.



* Percentage figures inside the parentheses are 2004 real annual growth rate.

* Belize (GDP of US\$1bn and +3% Y/Y) is excluded.

Source: Inter-American Development Bank

Figure 2.4 GDP in Central American Countries

(2) Consumption and Investment

Domestic consumption has been always high and finally exceeded GDP (101.3% of GDP) in 2004. As a result, domestic savings turned negative, declining to an estimated minus 1.3% of GDP in 2004 (positive 5% in 1998). Despite rapid increase in family remittances, national savings have decreased, leading to weak investment and fixed capital formation. Public sector savings have been negative for several years but private savings also turned negative in 2004.

The following table summarizes the flow of consumption, savings and investment in El Salvador.

Table 2.10 Savings and Investment Flow (% to GDP)

	2001	2002	2003	2004	2005*
Domestic Consumption	99.1%	98.6%	99.7%	101.3%	-
Domestic Savings	0.9%	1.4%	0.3%	-1.3%	-
Private	1.4%	2.0%	1.0%	-0.5%	-
Public	-0.5%	-0.6%	-0.7%	-0.8%	-
Family Remittances from Abroad	13.8%	13.5%	14.1%	16.1%	16.6%
National Savings	15.6%	13.3%	11.7%	11.2%	-
Domestic Investment	16.7%	16.2%	16.6%	15.8%	-
Fixed Capital Formation	16.4%	16.4%	16.7%	15.6%	-

*Estimate

Source: Central Bank of Reserve

(3) External Sector

Rising domestic consumption has put upward pressure on prices and wages and led to increase in imports, worsening trade balance, which has not been totally offset even by rising family remittances from abroad. As a result, the country's current account balance and external debt have increased while net international reserve has diminished. External debt to GDP has increased sharply from 22.8% in 2001 to 30.2% in 2004.

Table 2.11 Major Indicators of the External Sector (US\$ Million)

	2001	% to GDP	2002	% to GDP	2003	% to GDP	2004	% to GDP	2005*	% to GDP*
Export (FOB)	2,892	20.9%	3,020	21.1%	3,153	21.1%	3,330	21.0%	3,485	20.5%
Import (CIF)	5,027	36.4%	5,185	36.2%	5,754	38.5%	6,269	39.6%	6,846	40.2%
Trade Good Balance	-2,135	-15.5%	-2,165	-15.1%	-2,601	-17.4%	-2,939	-18.6%	-3,361	-19.8%
Family Remittances from Abroad	1,911	13.8%	1,935	13.5%	2,105	14.1%	2,547	16.1%	2,828	16.6%
Current Account Balance	-150	-1.1%	-405	-2.8%	-764	-5.1%	-612	-3.9%	-	-
Net International Reserve	1,791	13.0%	1,589	11.1%	1,906	12.8%	1,888	11.9%	1,879	11.0%
External Debt	3,148	22.8%	3,987	27.9%	4,717	31.6%	4,778	30.2%	-	-

*Estimate

Source: Central Bank of Reserve

(4) GDP by Sector

The following table shows the breakdown of GDP by sector in 2004. Agriculture and finance/insurance sectors have been the strongest while manufacturing has lost its momentum in recent years. The sharp decline in the construction sector in 2004 was due to delay in passing the government budget in the parliament until the middle of the year. Major industries of the country are food and processing, beverages, petroleum, chemicals, fertilizers, textiles, furniture, and light metals.

Table 2.12 GDP by Sector (2004)

GDP by Sector	% to Total	2004 Growth	Average Growth in 2001-2004
Agriculture	11.5%	3.2%	0.2%
Manufacturing	23.6%	0.7%	2.5%
Construction	3.5%	-13.6%	1.7%
Trade, Restaurants and Hotels	19.7%	1.4%	1.5%
Finance and Insurance	3.9%	4.6%	2.2%
Others	37.8%	2.2%	2.0%
Total	100.0%	1.5%	1.8%

Source: Central Bank of Reserve

(5) Inflation and Exchange Rate

El Salvador adopted US dollar currency as its national currency in 2001 after 7 years' fixed exchange rate policy in order to reduce currency devaluation risk, promote foreign investment and to reduce interest rates. After the Dollarization, the local interest rate has come down and FDI has increased. Though it had abandoned the monetary policy in 1994 by fixing the exchange rate, the inflation rate had not been so high since 1997. In recent years, however, the CPI has crawled up to the level of 4 to 5% but it is still the lowest among the Central American countries.

Table 2.13 CPI and Weighted Average Lending Rate

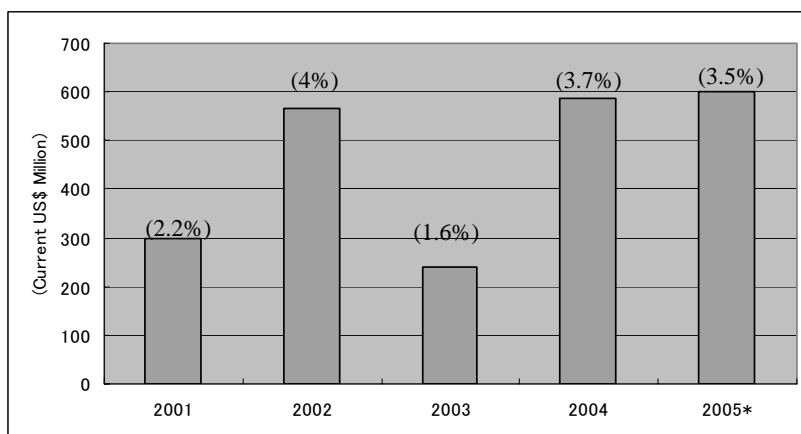
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
CPI	9.8%	4.5%	2.6%	0.5%	2.3%	3.8%	1.9%	2.1%	4.5%	4.3%
Bank Lending Rate*	-	-	10.4%	10.7%	10.7%	10.8%	8.7%	8.0%	7.7%	8.2%

*Weighted average bank lending interest rate for over one year

Source: Central Bank of Reserve

(6) Foreign Direct Investment

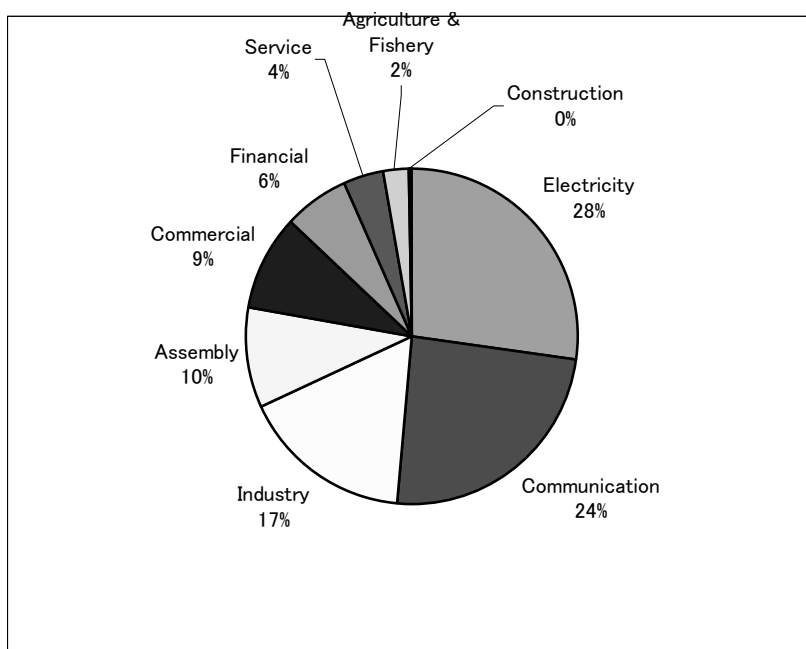
Foreign direct new investment has been on the rise. Electricity and communication sectors together account for 51.2% of the total FDI balance.



*Percentage figures inside the parentheses are annual growth rates.

Source: Central Bank of Reserve

Figure 2.5 FDI Trend



Source: Central Bank of Reserve

Figure 2.6 FDI Balance by Sector as of 2004

(7) Employment and Income

According to the World Factbook, labor force is estimated at 2.81 million in 2005, or 40.9% of the total population. Labor force by occupation is agriculture (17.1%), industry (17.1%) and services (65.8%) in 2003.

According to the Central Bank of Reserve, unemployment rate has declined in urban area but has increased in rural area in 1998-2004. The economy has much more underemployment as shown in the table below and both visible and invisible underemployment have worsened in the period.

Table 2.14 Unemployment and Underemployment Rate

	1998	1999	2000	2001	2002	2003	2004
Unemployment Rate							
Total	7.3%	7.0%	7.0%	7.0%	6.2%	6.9%	6.8%
Urban	7.6%	6.9%	6.7%	7.0%	6.2%	6.2%	6.5%
Rural	6.8%	7.0%	7.5%	7.0%	6.3%	8.2%	7.2%
Underemployment Rate							
Total	31.5%	31.9%	27.0%	28.1%	29.8%	36.4%	34.6%
Visible*	3.1%	3.1%	3.4%	3.5%	4.1%	4.4%	4.3%
Invisible**	28.4%	28.8%	23.6%	24.6%	25.7%	32.0%	30.3%

* Less than 40 hours of work per week

** More than 40 hours of work per week but at lower rate than the minimum salary

Source: Central Bank of Reserve

The following table summarizes average monthly income per capita (not per worker) and monthly average income per family. Monthly income per capita averages at \$100.5 in 2004. Average income has shrunk by 2.3% per capita and 2.8% per family in real terms in 2001-2004.

Table 2.15 Average Monthly Income per Capita and per Family

	2001	2002	2003	2004
Income per Capita (Current US\$)	96.4	100.4	96.8	100.5
Real Change Y/Y	-	2.2%	-5.6%	-0.6%
Income per Family (Current US\$)	420.8	429.2	404.3	417.8
Real Change Y/Y	-	0.1%	-7.7%	-1.1%

Source: National Agency for Statistics and Census

2.2 Socio-economic Framework

2.2.1 Government Plan for 2005-2009³

According to the Government Plan for 2005-2009, the present government, hoping to stimulate the sluggish economy, strives to open new export markets, encourage foreign investment, remove obstacles to improve efficiency in the public sector and competitiveness in the private sector, and increase domestic investment by redirecting foreign family remittances. Sectors with comparative advantage are expected to be agriculture and fishery, textile, construction and tourism and other services.

Implementation in 2006 of CAFTA (the Central American Free-Trade Agreement with the United States), signed by Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua in 2004, is viewed as a key policy to increase export and foreign investment. CAFTA is more comprehensive than the Caribbean Basin Initiative (CBI) and changes the form of trade relations from the unilateral preferential arrangement to a negotiated bilateral agreement. CAFTA will have important macroeconomic implications for El Salvador as it provides enhanced and permanent access to its largest export market, i.e., the US. The agreement

³ Source: Ministry of Economy and IMF: El Salvador: Selected Issues – Background Notes (August 2005)

includes provisions on investment and financial services, antitrust, government purchases, protection of intellectual property rights and labor. El Salvador will need to implement reforms to reduce barriers to investment and growth in order to fully benefit from CAFTA. The main impact for the country is expected from increased foreign investment as well as from the strengthening of domestic rules and institutions.

As for the public sector, the government intends to maintain the prudent fiscal policy to restrain current expenditure below current revenues and to maintain the debt level to the international level and capacity to pay of El Salvador. With the adoption of the US dollar as its currency, the country has lost control over monetary policy and thus must concentrate on maintaining a disciplined fiscal policy.

As for the private sector, the government intends to simplify and make efficient the business climate of the industrial sector to establish competitiveness. Public infrastructure and services will be provided to increase efficiency and effectiveness to support the industrial production by facilitating the effective use of the commercial opportunities and investment in internal and external markets. One example of such public infrastructure and services will be promotion of the use of information technology. The government announced presidential program called 'Connectivity Agenda' to introduce electronic government, e-SME, electronic commerce, the use of computers and internet in schools, establishment of INFOCENTROS, etc. It targets at the access of the majority of the Salvadorians to the internet at the government, companies, schools or municipalities.

2.2.2 Socio-economic Framework

The following table shows present and future projections of population, GDP and GDP per capita in which framework the proposed project is expected to take place for the purposes of project evaluation. The projection of GDP and GDP per capita is made in real terms at 2005 constant price. It is assumed, conservatively, that GDP growth rate will increase slightly to 2.5% in comparison to average growth rate of 2.0% in 2001-2005 owing to CAFTA and the government's policy to improve efficiency in the public sector and competitiveness in the private sector. The population growth rate, following the present trend, will continue to slow down in 2005-2025. As a result, GDP per capita is estimated to show a modest growth of approximately 1% in 2005-2025.

Table 2.16 Socio-economic Framework (2005-2025)

	2005	2010	2015	2025
GDP (US\$ Million)*	17,017	19,253	21,783	27,884
Average Annual Change	2.0%**	2.5%	2.5%	2.5%
Population (Thousand)	6,875	7,441	7,977	9,062
Average Annual Change	1.8%**	1.6%	1.4%	1.3%
GDP per Capita	2,475	2,587	2,731	3,077
Average Annual Change	0.2%**	0.9%	1.1%	1.2%

* 2005 constant price

** 2001-2005 average annual rate

Source: JICA Study Team and National Agency for Statistics and Census

2.3 Government Structure and Legal Framework

This chapter describes and analyzes the legal framework and the organization of the government of El Salvador. This description is oriented to ICT aspects of the government.

2.3.1 Government Structure – Central and Local

(1) Description of Main Ministries, Organizations and Agencies of the Central Government

The government is divided into executive, legislative, and judicial branches. This is the presidential system similar to the existent in other Latin American and Caribbean countries, and is based on a division of powers, where the executive powers are finally relied upon Presidential decision. The following shows the definition of roles of ministries and agencies.

Executive Branch

- **Central Reserve Bank**

Regulate and modernize the financial system. Regulate, monitor and promote the efficiency of payment systems. Generate and publish economic and financial information. Generate, coordinate and publish macroeconomic statistics and projections. Make economic and financial studies. Advise the Central Government in economic matters. Execute the function of state financial agent. Provide integrated services and proceedings of export, preservation and liquidity of international reserves. Fortify the monetary system.

- **General Superintendence of Electricity and Telecommunications**

Apply treaties, laws and regulations that regulate the activities of the electricity and telecommunications sectors. Dictate norms and technical standards applicable to the electricity and telecommunications sectors. Establish, maintain and foment relations of cooperation with foreign and multilateral institutions or tie organisms to the electricity and telecommunications sectors.

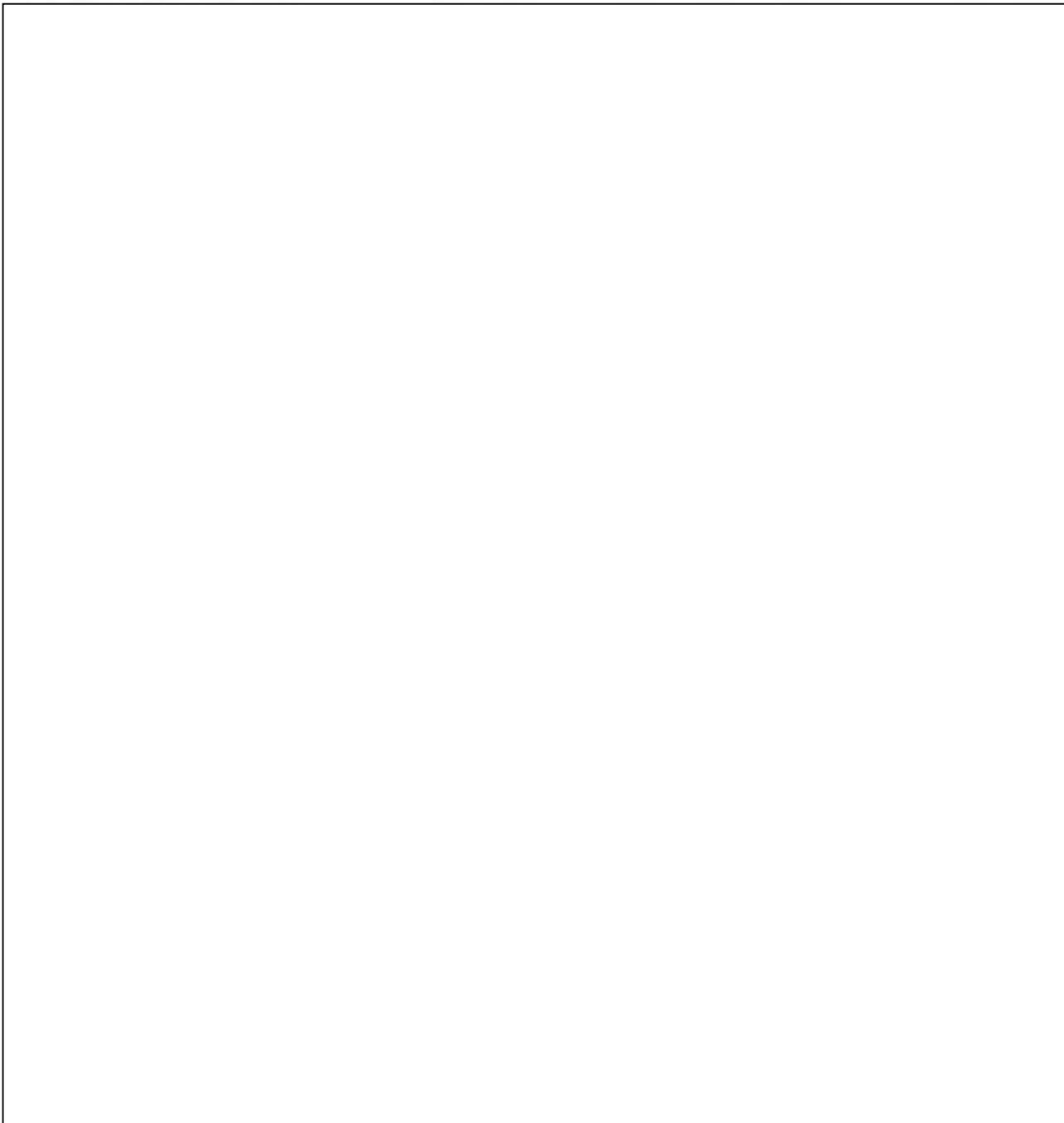
- **Ministry of Agriculture and Livestock**

Formulate, direct and control the development policy of the farming sector, evaluate the impact of its application, as well as the repercussion of the macroeconomic policies in the sector. Propose the farming sectoral legislation and emit the necessary norms for the fulfillment of such policies

- **Ministry of Economy**

Promote the economic and social development by way of the increase of production, productivity and rational use of resources. Contribute to the development of the competition and competitiveness of productive activities for the internal market as for the external one through the promotion of investments and the growth of exports through a clear and transparent scheme of action that prevents the existence of discretionary barriers to economic agents.

Define the commercial policy of the country. Pursuit and promote the Central American economic integration. Fortify the flows of commerce and investment and the multilateral development of the commercial negotiations with third countries and organizations.



Source: <http://www.casapres.gob.sv/gabinete/OrgGOES>, Presidential House Web Page

Figure 2.7 Government Organization - Ministries and Agencies

- **Ministry of Education**

Implement flexible modalities of secondary and basic education in order to cause that young people and adults increase their schooling. Provide services of basic education, with special emphasis in the poorest zones. Work towards making primary education universally accessible, giving priority to 6 year old children. Alphabetize young people and adults, with special attention to the municipalities of greater poverty, so that they complete the sixth degree and improve their options of labor qualification.

Fortify the services supply to take care of diversity. Improve the physical environment, so they are functional, safe and pleasant and they support the educative work. Improve with special attention, the institutional climate of schools, in order to obtain a harmonious labor atmosphere, coherent and

ordered that favors the tasks of teaching and learning. Promote good performance and high motivation of teachers, since they are key players of the education-learning process.

Assure that the curriculum becomes a tool that clarifies the expected competitions among students and that they are indeed implemented in the context of the classrooms. Develop processes of certification and educative accreditation to know the competitions and the performance of persons, as well as the educators and the institutions. Create oriented educative services so that a greater number of Salvadorans command English as a second language, since that extends the sources of learning and the cultural interchange.

Fortify the network of technological support and connectivity of the educative system so that more young and adults have the opportunity to acquire technological competitions and can expand their opportunities of communication and learning. Improve technical and technological education, integrating the efforts of the average and superior education in coherence with the requirements of the economic and social development of the country. Fortify the superior education in order that it contributes to the scientific and technological development and the operation of a National System of Innovation, to adapt and to generate technology and to improve productivity.

Foment the protagonist of the scholastic centers to fortify their capacity to make decisions and to implement plans of continuous improvement in the educative services. Foment the effectiveness of the public institutions, the coordination of the inter-institutional efforts, the public-private collaboration and the coherence of international cooperation to obtain educative and social profits in all and each one of the regions of the country.

Develop the information system, monitoring and evaluation, in order to know the educative achievements of the population, to verify permanently the advancement towards established goals and to feed back both the system and the educative institutions. Fortify the promotion and diffusion of cultural knowledge. Work for the conservation and improvement of the cultural infrastructure of the country.

- **Ministry of Environment and Natural Resources**

Regulate the environmental management.

To manage effectively environmental management programs through policies and norms that are in participative form and are transparent, and that facilitate the sustainable development.

Furthermore, Ministry of Environment and Natural Resources is responsible for facilitating a sustainable action in the development of agro-business, agro-ecological and forest certification. The Ministry is also responsible for education in prevention, control diagnosis and monitoring of animal diseases, information on market and prices of agricultural products.

- **Ministry of Finance**

Direct and coordinate the analysis, design, development and implantation of Human Resource and Information systems related to the Financial Administration, in the institutions of the Public Sector.

Plan, direct and control the development and implantation of information systems projects and telecommunications under the responsibility of the Ministry. Manage the policies of Information Security and Quality of services and information systems products offered by the Ministry.

Other activities: tributary administration (VAT declaration, income tax); customs transactions (declaration and payment of import and export merchandise); collection of taxes (electronic payment of taxes and tariffs); national debt; and public investment.

- **Ministry of Foreign Affairs**

Defend the national sovereignty in the diplomatic arena. Take care of Salvadorans abroad. Position El Salvador at international level by way of the exercise of its foreign policy. Manage international cooperation in order to contribute to the sustained development of the country. Promote Central American integration in the human, economic, political social and cultural scopes.

- **Ministry of Internal Affairs**

Develop, promote and harmonize the maximum effort of the government and society, for the achievement of the national objectives in matters of public security, citizen security and participation, legal security and solidarity, through the effective fulfillment of state policies.

- **Ministry of Labor and Social Provision**

It guarantees the fulfillment of the Labor Norm promotes and engages in the social dialog, the labor intermediation, the security and occupational health, and the social welfare; trying a worthy and sustainable development of the workers and employers.

The national labor laws that are in force in El Salvador are: a)the Constitution; b)International Labor Conventions (most of them of the ILO) that have been signed and ratified by El Salvador; c)the Labor Code; and d)laws regarding Social Security, protection and benefits for the employees, the laws that regulate the organization of the administration within the public sector, and all the regulations for the appliance of secondary laws.

- **Ministry of Public Health and Social Assistance**

Provide health services to the population throughout the country.

- **Ministry of Public Works**

Govern and facilitate the ordering and territorial development through the provision of basic services of road infrastructure, transport systems and human gatherings to contribute to sustainable economic and social development in benefit of the population.

- **National Registration Center**

Registry services, Cartographic, Geographic and Cadastral Services

- **Superintendence of the Financial System**

The aspects that are supervised with greater emphasis by this office are the following: Solvency, Classification of Risk Assets, Constitution of Reserves, Concentration of Risks, Countable Principles and Policies, Technical and Mathematical Reserves, Investments, Reinsurance, Financial Information, Countable Registries, Operations with Parties.

Judicial Branch:

- **Supreme Court of Justice**

To know about the proceedings for relief;

To settle the differences of any jurisdiction or nature, that could raise among the courts;

To know about the reason for seizure and about those that are not reserved to other authority; to order the requests issued to practice proceedings out of the country and to perform the ones that come from other countries, without violating the treaties; and to grant the extradition;

To grant the permit to execute judgments pronounced by foreign court, according to law and when it is necessary;

To watch over the administration of a prompt and total justice, taking the necessary legal steps;

To know the responsibility of the public officials in the case determined by law; To know the reasons of the cessation or loss of the citizens' rights in the cases comprised on the ordinals 2nd and 4th of article 74 and in the ordinals 1st, 3rd, 4th and 5th of article 75 of this Constitution, likewise, the corresponding rehabilitation;

To issue judgment in the application of exemption or commutation of a penalty;

To appoint the Justices of the Courts of Appeals, Judges of Courts and Judges of Peace Courts, appointing them from the groups of three people proposed by the National Judicial Council; the Coroners and the employees of different branches of it; remove them, know about their resignations and grant them permissions;

To appoint the Associate Justices in the cases determined by law;

To receive on its own or through others, the swearing in of public officials;

To authorize and greet lawyers into the practice of law; suspend them for not complying with their professional obligations, for negligence, for unprofessional behavior, or for immoral private affairs. The same authorities will be exercised upon notaries;

To prepare a budget those includes the salaries and expenses of the administration of justice and submit it to Executive Branch for its inclusion in the General Budget of the country. Any budgetary adjustments that the Congress may deem necessary to the proposed budget will be done consulting the Supreme Court.

(2) Public Services Provided

- **Central Reserve Bank**
Establish financial norms. Provide monetary species to banks. Provide financial services, payments and treasury. Generate and publish economic and financial information (statistical, publications). Provide technical advisory to the Central Government. Handle state funds and other financial agent services. Perform export procedures.
- **General Superintendence of Electricity and Telecommunications**
SIGET is a regulating entity, not a supplier of public services.
- **Ministry of Agriculture and Livestock**
Orientation in the development of the agro-business; agro-ecological and forest certification; permissions for irrigation purposes; education in prevention, control, diagnosis and monitoring of animal diseases; diagnosis of parasites; fito and/or zoo sanitary import authorizations; information on market and prices of agricultural products; Agricultural statistics; Geographic information; authorizations for culture, production and export of fishing products.
- **Ministry of Economy**
Provide services in the areas of: commercial policy; treaty administration; commerce and investment; statistics and censuses; supervision of mercantile obligations; hydrocarbons and mines; national office of investments; promotion of exports.
- **Ministry of Education**
Provide education in all levels, from primary to high school to all of the population. Regulate higher education.
- **Ministry of Environment and Natural Resources**
Extend environmental permissions. Receive and process environmental denunciations. Manage National Parks and Natural Protected Areas.
- **Ministry of Finance**
Provide qualification in integrated financial administration system. Provide technical assistance in integrated financial administration system. Manage the help desk system. Provide interconnection services for data transmission between the Ministry and institutions in the public and financial sector. Other integrated services: Integrated Financial System (SAFI); Human Resources Information System (SIRH); Tributary Information Integrated System (SIIT, DET, Tax Return, etc.); Customs Control System (SIDUNA); Tax Collections System (SITEP, FENIX); and Public Debt System (SIGADE).
- **Ministry of Foreign Affairs**
Provide passport issuance abroad; family registries abroad. Manage all matters related to repatriate Salvadorans. execute visa issuance abroad.
- **Ministry of Internal Affairs**
Provide services such as: authorization of cemeteries construction; commutation of penal sentences; authorization of drawings, raffles and commercial promotions; inscription of non governmental organizations; emission of criminal records (penitentiary system); authorization of transport of dangerous materials (firearm); citizen denunciations (citizen security); passports issuance (migration direction); authorization of public international spectacles and inscription of circuses (public spectacles direction); transport and opportune delivery of mail, consultation of corporative shipments, EMS (Post office direction); migratory control: emission of temporary and definitive residence permits; Visa endorsement; and naturalizations.

- **Ministry of Labor and Social Provision**
 Extension of permission of work to minors temporary
 Inscriptions of Plaintiff of use
 Granting of leave for use of working centers
 Request of approval of constructive planes
 Evaluation of degree and type of disability
- **Ministry of Public Health and Social Assistance**
 Provide health services.
- **Ministry of Public Works**
 Build and maintain the road infrastructure. Develop and manage transport regulation. Plan and execute urban development.
- **National Registration Center**
 Provide services such as: registry of commerce; registry of intellectual property; Registry of the real state and mortgages; and national cadastre; and cartography and national geography.
- **Superintendence of the Financial System**
 Attention to the public. Extend conciliations. Provide Library services.

Table 2.17 Number of Staff per Institution

Institution	Number of Staff
Central Reserve Bank	436
General Superintendence of Electricity and Telecommunications	92
Legislative Assembly	
Ministry of Agriculture and Livestock	1,500
Ministry of Economy	350
Ministry of Education	36,050
Ministry of Environment and Natural Resources	250
Ministry of Finance	N.A.
Ministry of Foreign Affairs	798
Ministry of Internal Affairs	N.A.
Ministry of Labor and Social Provision	
Ministry of National Defense	
Ministry of Public Health and Social Assistance	18,000
Ministry of Public Works	1,000
National Registration Center	1,587
Superintendence of the Financial System	200

N.A.: Not Available

Source: JICA Study Team

2.3.2 Local Government Related Organizations

(1) Overall Information

Table 2.18 Local Government Organization, Examples

Institution	Authority / Regulating agency
Municipality of Antiguo Cuscatlán	Autonomous
Municipality of Santa Tecla	Autonomous

Source: JICA Study Team

(2) Information on Individual /Organization

1) General Information

- Major tasks

Municipality of Antigua Cuscatlán

Services to the community; Development of the Municipality; Handling of Income

Municipality of Santa Tecla

Guarantee the generation of economic, social and political conditions that allow the improvement of the local development, to offer better services and to impel the citizen participation in the municipality.

- Public services provided

Municipality of Antigua Cuscatlán

Public lighting system

Cleanliness

Paving

Health

Education

Environment

Municipality of Santa Tecla

Participation and Solidarity

Security and balance with the environment

Sport, Culture and Recreation

Order and Modernity

Cleanliness and Health

Productiveness and Sustainability

Make the city a commercial and productive pole

Table 2.19 Number of Personnel per Institution, Examples

Institution	Number of personnel
Municipality of Antigua Cuscatlán	1,200
Municipality of Santa Tecla	750
Ministry of Economy	532

Source: JICA Study Team

Table 2.20 Responsible Organization on ICT/Responsible Person(s)/Number of Staff, Examples

Institution	ICT Organization	ICT Personnel	Responsible
Municipality of Antigua Cuscatlán	IT Division	5	Ing. Luis Escamilla
Municipality of Santa Tecla	Municipal Information Technology (TIM)	9	Lic. Israel Lone Bonifacio

Source: JICA Study Team

Chapter 3 The ICT Sector

3.1 ICT Sector Policy

A number of initiatives for the ICT sector have been launched in El Salvador, as well as in the region involving El Salvador, for the purpose of making El Salvador a better place to live and work and more competitive in the world market, by means of utilizing cutting edge technologies.

The most notable effort is the establishment of the National Commission for Information Society, NCIS, directly under the President in December 2004. It is promoting *e*-País (*e*-Nations) with the following objectives:

- To increase the digital connectivity for majority of the population in all country;
- To improve the information of the academic, productive and governmental sectors available online;
- To promote the use of internet for all companies as a way to access local and world markets;
- To promote the education for ICT to increase access, collaboration and investigation; and
- To maximize the information levels and services offered by the Government online in order to obtain greater access to the population, to increase efficiency, to facilitate citizen participation, and to promote transparency.

Various efforts being made in individual ministries and agencies are being coordinated by NCIS. Its structure is described in Section 3.1. NCIS was launched after two strategy statements, one issued in 1998 and another in 2004 that produced few actual results of substance.

The telecommunication sector in El Salvador has been completely privatized and between 2002 and 2004 the number of fixed line subscribers jumped by one third and the number of mobile users more than doubled. It is estimated that at least one in three Salvadorians including children now use mobile phones. This fact may provide a good ground to consider utilizing mobile phones for reaching citizens as part of the *e*-Government effort, since such technology is already available and extensively used in certain countries such as Japan.

No specific industrial policy specific to the ICT manufacturing and services industries exists at present or in the past, except for the process of certifying 13 ICT service companies with CMMI (a certificate system for software industry capability level).

El Salvador is in charge of *e*-Government among the eight countries participating in the Plan Puebla Panama, PPP, a regional development plan organization as mentioned in Section 1.1. Current emphasis of PPP in the field of ICT is placed on the installation of glass fiber line cross-regional communication networks. Small-scale local IT pilot projects are being done, including one in El Salvador.

The promotion of *e*-Government is also in line with policies of the System for the Integration of Central America, SICA, which holds periodic meetings of vice-presidents of member countries concerning *e*-Government. It has been promoting common *e*-passport as a part of the *e*-Government concept. Recently the Ministry of Governance of El Salvador issued a tender for a new *e*-Passport system.

3.2 Institutional and Legal Framework

3.2.1 Central Body for ICT Promotion (National Commission for Information Society, NCIS)

There is a presidential decree of December 23rd, 2004, that created the National Commission for Information Society. Following is a list of some of the persons that were invited to constitute the NCIS. This is not the definitive composition of the NCIS, since it is currently in the process of forming itself.

Table 3.1 NCIS Members and Authorities

Sector	Institution	Title	Name
Government	TSP	Secretario Técnico de la Presidencia	Eduardo Zablah Touché
	Foreign Affairs Min	Ministro de RREE	Francisco Esteban Laínez
	Foreign Affairs Min	Vicemin. de RREE	Eduardo Cáliz
	Foreign Affairs Min.	Dir. Asuntos Económicos	Ricardo Flores
	Foreign Affairs Min.	Dir. Económicos para Norte y Suramerica	Jorge Adonay Santamaría
	Plan Puebla Panamá	Directora Ejecutiva PPP	María Teresa de Rendón
	Plan Puebla Panamá	Dir. Ejec. Telecomunicaciones PPP	Roberto Carlos Salazar
	Min. of Economics	Ministra de Economía	Yolanda de Gavidia
	Min. of Economics	Vicemin. de Economía	Blanca Imelda de Magaña
	Min. of Economics	Dir. Competividad	Rafael Ruíz
	CNR	Director Ejecutivo	Félix Garrid Safie
	Min. of Education	Ministra de Educación	Darlyn Meza
	Min. of Education	Vicemin. de Tec. De Educacion	Rafael Salomé
	SIGET	Superintendencee	Jorge Nieto
	SIGET	Especialista en Normativas	Fernando Arguello
	SIGET	Coord. de Iniciativas de Telecom del PPP	María Isabel C. De Morataya
	SIGET	Encargado Relaciones Internacionales	Otilio Rodríguez
	CONACYT	Director Ejecutivo	Carlos Roberto Ochoa
	BMI	Presidente	Nicola Angelucci
	BMI	Director de Negocios	Roger Alfaro Araujo
	CONADEI	Directora Ejecutiva	Patricia Figueroa
	INSAFORP	Presidente	Mario Antonio Andino
	Min. of Finance	Ministro de Hacienda	Guillermo López Suárez
	Min. of Finance	Coordinador de TI	Alex Rivera
	FISDL	Presidente	José Andrés Rovira
	COMURES	Presidente	Marco Antonio Funes
	Private	FUSADES	Presidente
FUSADES		Gte. Sección Macroeconómica	Pedro Argumedo
FUSADES		Director Dpto. Asuntos Económicos	Roberto Rivera
Asoc. Infocentros		Director Ejecutivo	Sigfredo Figueroa
SVNet		Presidente	Rafael Ibarra
AMPS		Presidente	Pedro Leonel Moreno
ANEP		Presidente	Federico Colorado
ASDER		Directora Ejecutiva	Ana Maria Urrutia de Lara
Chamber of Commerce		Presidenta	Elena María de Alfaro
		TI cluster	
ASPROC		President	Rogelio Fonseca
		ASOTEL/AORAES	
		NAP El Salvador	

Sector	Institution	Title	Name
	Fundemas	Directora Ejecutiva	Rhina Reyes de Fuentes
	ASI	Presidente	Napoleon Guerrero
	American Chamber of Commerce	Presidente	David Huezo
Academic	Univ. of El Salvador	Rectora	María Isabel Rodríguez
	Univ. of El Salvador	Vicerector Académico	Joaquín Orlando Machuca
	RAICES	Presidente	Rafael Ibarra
	INCAE national comitee	Presidente	Rafael Castellanos
	Futurekids	Presidente	Juan Valiente
	FEPADÉ	Presidente	Ricardo Freund
	FEPADÉ	Presidente Junta Directiva	Carlos Cromeyer

Source: JICA Study Team

3.2.2 Establishment Status of Subcommittees of NCIS

The chairman of the NCIS is the Technical Secretary of the Presidency, Eduardo Zablah.

The first and immediate goal of the NCIS is to prepare a document that will contain a consensus of vision, objectives and projects that need to be promoted within a period of several years in the future, in order to take El Salvador into the path of the world of knowledge and information, and place the country among the top in the world in this area.

There are six thematic committees and two coordinating committees under the National Commission for the Information Society.

Thematic Committees

- Legal and Institutional Framework
 - Chaired by Jorge Nieto, from SIGET
- Human Resources
 - Chaired by Mario Andino, from Insaforp, and Juan Valiente, from Futurekids
- Information Technology Industry and e-Commerce
 - Chaired by Pedro Argumedo, from FUSADES
- e-Government
 - Chaired by Alex Rivera, from the Ministry of Finance
- National Connectivity
 - Chaired by Rafael Ibarra, from SVNet
- Regional Connectivity
 - Chaired by Eduardo Cáliz, from the Ministry of Foreign Affairs and Plan Puebla Panamá

Coordinating Committees

Strategic Committee

Besides some local persons, it is expected to be assembled with some foreigners, like ambassadors, international consultants, etc.

Executive Committee

It is assembled with all of the chairmen of the thematic committees, as well as the chairman of the NCIS and some members of the Strategic committee.

Budget Allocation for the Committees

Currently, there is no budget allocation for the NCIS. Everything that is being carried out so far is being sponsored by the Technical Secretariat of the Presidency of the Republic, under the presidential program e-País.

(1) Additional Initiatives for Legal Framework

● **Preparation Status of Laws and Regulations for ICT**

Besides some laws and regulations that are being developed because of the CAFTA and indirectly affect ICT (such as Intellectual property matters), there are no current efforts in this area.

● **Laws and Regulations Concerning e-Government**

There are no current efforts in this area.

● **Laws and Regulations for ICT Sector Promotion**

Around 2000, there were some private and public efforts to develop, write and propose an e-commerce law. This document was discussed by some law firms, some private enterprises and some academic representatives. However, it was held in the Ministry of Economy, where still remains. Other than that, there are no current efforts in this area.

● **Laws and Regulations on Human Resource Development**

There are no current efforts in this area.

(2) Law Formation Process

According to the Salvadorian Constitution a bill can be drafted by:

- Member of Parliament;
- The Republic President through the Ministries;
- Supreme Court of Justice in matters relative to the judicial branch, notary, lawyers, Court's competence; and
- City council: about local taxes.

All bills that are approved will have to be signed by most of the members of the Board of Directors. All bills, after being discussed and approved, will be transferred within ten working days to the President of the Republic, and if the president will not have any objections, it will become into Law.

If the President of the Republic will not have any objections to the received project, then s/he will sign both exemplary. One exemplary he will send back to the Assembly and will keep the other one in his file. S/He will also publish the text like a law in the corresponding official organ.

When the President of the Republic will veto a law project, s/he must send it back to the Assembly within eight working days to one of his receipts, stating the reasons for rejecting the law; if within the expressed period of time s/he will not send it back, and then it will be published as a law.

In the case of veto, the Assembly will reconsider the project, and it will both ratify it with, at least, third of votes of the elect Deputies, or it will be send back to the President of the Republic, who will have to sanction it and to send it to for printing.

The term for the publication of the laws will be fifteen working days. If within that term the President of the Republic will not publish them, the President of the Legislative Assembly will do it in the Official Newspaper or any other newspaper of large circulation in the Republic.

A law that has not been promulgated or published the law of permanent character is obligatory and will have to pass, at least, eight days after its publication. This term can be extended, and will not be restricted.

(3) Relationship between Central and Local Governments

General Aspects

Concerning the use of public resources and the application of national policies there are a number of organizations including ministries, agencies and semi-autonomous bodies dealing with ICT aspects or

related issues. For example, national connectivity for telephone is regulated by SIGET, the Superintendence of Information and Telephony Resources. However, Internet providers are hardly regulated, and this is so at national level as well as at municipal level. Public organizations, however, have federal jurisdictions to apply national laws and enforce regulations through the ministries. And this is also legal and financial framework for local municipalities, which finance their activities partly through earmarked transfers from the central government, the use of which is not completely transparent. Transfers are mainly channeled through the Economic and Social Development Fund (Fondo para el Desarrollo Económico y Social de los Municipios (FODES)), which is dictated by a regulation that 7% of the national budget must go to municipalities, as a way of guaranteeing financial autonomy of municipalities. This practice creates two problems: 1) the central government has considerable control over municipalities, in particular the poor ones, which have little access to financial resources; and 2) municipal authorities are elected by popular votes, so in case the dominant political party is different from the one in the central government, there can be problems in carrying out policies.

Information Society and Regulations

Regarding the legal aspects for information society, at present few laws exist in El Salvador as mentioned before. Therefore, the legal framework to regulate such activities and the jurisdiction of local government is not clear. Some of initiatives which require coordination with municipalities and local governments are those involving schools (as focal points for connectivity), cabling and any kinds of construction work.

Administrative Aspects

The government of El Salvador is divided into executive: president and vice president, legislative, and judicial (Supreme Court) branches.

The country is divided into 14 Departments in each of where there are a Governor and a Vice-Governor, named by the Executive Branch, where the executive branch is composed of the president of the republic, the vice president, ministers and vice ministers of state.

The powers of the president are circumscribed to some extent by the Constitution. The president requires the approval of the Legislative Assembly in order to leave the country. S/He is required to report to the assembly upon request on any subject except secret military strategy.

Box 3.1 Extracts from El Salvador's Constitutions on Local Governments

SECCION PRIMERA

LAS GOBERNACIONES

CAPITULATE VI: LOCAL GOVERNMENT

SECTION: GOBERNACIONES

Art. 200. - For the political administration the territory of the Republic in Departments is divided whose number and limits will fix the law. In each one of them there will be a proprietary Governor and a substitute, named by the Executive Branch and whose attributions will determine the law.

SECTION SECOND

MUNICIPALITIES

Art. 202. - For the Local Government, the departments are divided in Municipalities that will be governed by formed Councils of a Mayor, a Receiver and two or more Regidores whose number will be proportional to the population. The members of the Municipal Councils will have to be greater of twenty one original or neighboring years and of the municipality; they will be chosen for a period of three years, could be reelected and their other requirements will be determined by the law.

Art. 203. - The Municipalities will be independent in the economic, the technician and the administrative thing, and they will be governed by a Municipal Code, that will seat the general principles for its organization and operation and exercise of its independent faculties. The Municipalities will be forced to collaborate with other public institutions in the plans of national or regional development.

Comes from previous page

Art. 204. - **The autonomy of the Municipality includes/understands:**

1. - To create, to modify and to suppress to rates and public contributions for the work accomplishment determined within the limits that a general law establishes. Approved the rates or contributions by the Municipal Council it will be sent to publish the respective agreement in the Official Newspaper, and passed that is eight days after their publication, it will be obligatory his fulfillment;
2. - To decree to its Budget of Income and Debits;
3. - To manage freely in the matters of its competition;
4. - To name and to remove to the civil employees and employees of its dependencies;
5. - To decree to the decrees and local regulations; or
6. - To elaborate its tariffs of taxes and the reforms to the same ones, to propose them like law to the Legislative Assembly.

Art. 205. - No law neither authority will be able neither to exempt nor to give the payment of the rates and municipal contributions.

Art. 206. - The plans of local development will have to be approved by the respective Municipal Council; and the institutions of the State will have to collaborate with the Municipality in the development of such.

Art. 207. - The municipal bottoms will not be able to be centralized at heart General of the State, nor to be used but in services and for benefit of the Municipalities.

On Municipalities

For the local government, the departments are dividend into Municipalities managed by the mayor, one syndicate and two or more regidores. Municipality is primary the political and administrative unit within the Salvadorian state.

Unlike the Governors that depend on the executive branch; the municipalities count on autonomy to occur their own government.

The Municipalities are autonomous in economic, technical and administrative sense and must follow the Municipal Code. This Code establishes general principles for its organization, operation and exercise of autonomous faculties.

The municipalities are autonomous, so that they have faculties to regulate, to direct and to administer within his territory the subjects that are of their competition.

In spite of his autonomy must be fitted to the General Principles establish at the Municipal Code.

The autonomy of the municipality includes:

1. To create, modify, abolish and approve municipal taxes;
2. To prepare and approve their own budget;
3. To enact decrees for local regulations; and
4. To approve level of taxes.

Box 3.2 El Salvador's Municipal Code

MUNICIPAL CODE

Municipal Code intends to develop the referring constitutional principles to the organization, operation and exercise of the independent faculties of the municipalities.

TITLE II

GENERAL CONCEPTS

Art. 2. - The Municipality constitutes the primary Administrative Political Unit within the state organization, established in a certain territory that is to him own, organized under a legal ordering that guarantees the popular participation in the formation and conduction of the local society, with autonomy to occur its own government, who as s/he starts off instruments of the Municipality is the in charge of rectories and management of communal property the premises, in coordination with the policies and national performances oriented communal property general, enjoying to fulfill these functions of the power, authority and sufficient autonomy. The Municipality has legal personality, with determined territorial jurisdiction and their representation will exert the organs determined in this law. Main the urban nucleus of the municipality will be the silk of the municipal Government.

Art. 3. - The autonomy of the Municipality extends a: 1) The creation, modification and suppression of rates by services and public contributions, for the work accomplishment determined within the limits that a general law establishes; 2) The Decree of its budget of income and debits; 3) The free management in the matters of its competition; 4) The appointment and removal of the civil employees and employees of its dependencies, conformity to Title VII of this Code; 5) The local decree and regulations; and 6) The elaboration of its tariffs of taxes and reforms to the same ones to propose them like law to the Legislative Assembly.

TITLE III

OF the MUNICIPAL COMPETITION

Art. 4. - It is incumbent on to the Municipalities:

1. The elaboration, approval and execution of plans of urban and rural development of the locality;
2. Supervision of prices, weights, measures and qualities;
3. The development and control of the nomenclature and public ornament;
4. The promotion and of the education, the culture, the sport, the recreation, sciences and the arts;
5. The promotion and development of health programs, like environmental cleaning, prevention and combat of diseases;
6. The regulation and supervision of the spectacles public and commercial publicity, as soon as concern the interests and municipal specific aims;
7. The impulse of the internal and external tourism and the regulation of the use and tourist and sport operation of lakes, rivers, islands, bays, beaches and other own sites of the municipality;
8. The promotion of the participation citizen, responsible in the solution for the local problems in the fortification of the civic and democratic conscience of the population;
9. The promotion of industrial, commercial and agricultural, artisan the development and of the services;
10. The increase and protection of the renewable and nonrenewable resources;
11. The regulation of the local transport and the operation of terminals of transports of passengers and load;
12. The regulation of the activity of the commercial, industrial establishments, on watch and other similar;
13. The regulation of the obligatory extraordinary operation in similar benefit of the community of the pharmacies and other businesses;
14. The regulation of the operation of restaurants, nocturnal bars, clubs and other similar establishments;

15. The formation of the Civil Registry of the people and any other public registry that will be entrusted to him by Law;
16. The formation of Registry of Citizens according to the Law;
17. The creation, impulse and regulation of services that facilitate the trade and supplying of products of consumption and first necessity like markets, and slaughter houses;
18. The promotion and popular organization of fairs and festivities;
19. The benefit of the service of cleanliness, sweeping of streets, harvesting and final disposition of sweepings;
20. The funeral benefit of the service of cemeteries and services and control of the cemeteries and funeral served by individuals;
21. The benefit of the service of Municipal Police;
22. The authorization and regulation of domestic and wild animal possession;
23. The regulation of the use of streets, sidewalks, parks and other sites public, policemen and the premises; and
24. Authorization of operation of lotteries.

(4) Required Legal Framework

There are no legal framework for most of the connectivity issues related with Internet and Telecommunications. SIGET as well as ASPROPC agrees with this situation.

ASPROC propose the following legal framework to be prepared for the period 2006-2009.

Formulation of Laws

Table 3.2 Legal Framework to Support Information Society Proposed by NCIS

No.	Name	Object	Reference
1	General Law of Information Society	Define the general framework for the development of the information society	Service Law of the Information Society and Electronic Commerce of Spain
2	Electronic Signature Law	Regulate the use of the electronic signature which guarantees and promotes a wide variety of commercial transactions and services of the information society	Model law of electronic signature of UNCITRAL (United Nations Commission on International Trade Law)
3	Law of Protection of Personal Data	Protect the fundamental rights of people, specially the right to honor and privacy, with regards to the treatment of personal data	Law of Protection of Personal Data, Spain
4	Law of Transparency and Access to Public Government Information	Guarantee the right of the citizens to access public government information and foment transparency in the administration of the central government and municipalities	Law of Administrative Transparency and Access to Public Government Information, Mexico

Source: JICA Study Team

Activities that must be developed for the formulation and approval of new norms:

- Identification of legal norms that should be developed;
- Elaboration of terms of reference for the hiring of consultancy services;
- Hiring and execution of the consultancy services;

- Consult and disclosure of laws;
- Approval of executive decrees on behalf of the Presidency of the Republic; and
- Presentation to the Legislative Assembly for the approval of laws.

Reform of Current Laws

Identify the current norms that must be reformed: education laws, Civil Code, Mercantile Code, Civil and Mercantile Legal Codes, Penal and Legal Penal Codes, Work Code.

Activities that must be developed for the reform of the current laws:

- Inventory of legal norms that must be reformed;
- Elaboration of terms of reference for the hiring of the consultancy services;
- Hiring and execution of the consultancy services;
- Consult and disclosure of laws;
- Approval of reforms of executive decrees on behalf of the Presidency of the Republic; and
- Presentation to the Legislative Assembly for the approval of law reforms.

Institutional Framework

In the short term it is fundamental to create an entity that:

- Assumes the responsibility of coordinating the execution of the action plans proposed by the different work meetings of the CNSI;
- Possesses the sufficient level in the state organization structure;
- Is permanent; and
- Disposes of the budget for the execution of the action plans.

3.3 Industry Performance

3.3.1 ICT Manufacturing

After the TI's (Texas Instrument) withdrawal of its plant from this country, no significant movements in high-tech manufacturing took place. An indicator which shows high-tech product exports in dollars per capita (albeit a little old) indicates that El Salvador exports goods more than Guatemala, Honduras, Nicaragua and Panama, but far behind Mexico and Costa Rica. This suggests that ICT manufacturing in El Salvador is very small.

Table 3.3 High-tech Exports per Capita (2001)

	Value (US\$)	Rank
Costa Rica	255.00	29
El Salvador	7.90	64
Guatemala	5.90	68
Honduras	0.60	81
Mexico	292.30	27
Nicaragua	0.40	87
Panama	0.50	83
Chile	6.90	65
Vietnam	0.40	85

Source: The Global Information Technology Report 2003-2004

3.3.2 ICT Services

At the end of 2003, there was a private survey done by the IT Cluster Program that existed at that time. Although it was not comprehensive (it did not include all of the country, and it covered 100 IT Salvadoran enterprises), this can provide rough framework of the industry in El Salvador.

Except the type of services as taken, there have been no significant movements in other types like data center service, contents development, etc.

Table 3.4 Number of IT Enterprises, by Year of Start up

Start up year	Enterprises
1992 or before	23
1993 to 1997	23
1998	13
1999	13
2000	10
2001 to 2003	18
Total	100

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.5 Number of IT Enterprises, by Commercial Status (more than one is possible)

Commercial status	Enterprises
Independent software applications developer	83
Representative of international enterprise	25
Authorized distributor of international enterprise	20
Distributor / importer	14
Subsidiary of international enterprise	14
Joint venture	13

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.6 Percentage of IT Enterprises, by Funding Source

Funding Source	Enterprises
Own resources	83%
Bank loan	14%
Joint venture	3%

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.7 Number of IT Enterprises, by Number of Employees

Employees	Enterprises
One person	15
Less than 10	54
Between 11 and 25	19
Between 26 and 49	7
50 and more	5

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.8 Number of IT Enterprises, by Type of Internet Connection

Internet Connection	Enterprises
Dedicated	83
Commuted	17

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.9 Average Monthly Salary, by Position

Position	Avg Monthly Salary
Specialist	\$1,872
Manager	\$1,736
Process analyst	\$1,332
Graphics designer	\$1,100
Programmer analyst	\$1,080
Database administrator	\$1,061
Developer	\$878
Others	\$1,765

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.10 Operating Systems Used by Customers, by Developer Enterprise

Operating System	Enterprises
Windows	97
Linux	43
Unix	36
MS-DOS	23
Apple	9
Open/VMS	6
OS2	6

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.11 DBMS Used by Customers, by Developer Enterprise

DBMS	Enterprises
MS-SQL	74
Oracle	48
MySQL	25
Sybase	22
DB2	10
Informix	9
Interbase	8
Access	8
Postgre SQL	4
Visual Fox	4

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.12 Main Services Offered, by Developer Enterprise

Services Offered	Enterprises
System analysis	53
Web applications	51
Client-server applications	49
IT consulting	36
Business consulting	25
Post sale services	21
Support	21

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.13 Percentage of Enterprises by Quantity of Products Sold in 2002

Products Sold in 2002	Enterprises
1 to 5	23%
6 to 10	21%
11 to 20	14%
21 to 50	12%
51 to 125	3%
126 to 200	3%
No answer	24%

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.14 Number of IT Enterprises, by Sales Ranges

Sales ranges	Years		
	2001	2002	2003
\$1 to \$50,000	33	33	33
\$50,001 to \$100,000	12	16	18
\$100,001 to \$200,000	10	12	10
\$200,001 to \$300,000	8	4	2
\$300,001 to \$500,000	6	10	7
\$500,001 and more	9	11	17

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.15 Average Percentage of Sales by Customer Type

% of Sales by destination	Years		
	2001	2002	2003
Commercial	49	45	44
Government	54	40	35
Telecommunications	48	35	34
Services	36	34	30
Export	28	27	27
Industry	40	29	26
Finance	24	27	25
Others	19	28	37

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

Table 3.16 Exports by Destination, First 3 Places

Export Destination	Percentage		
	First	Second	Third
Central America (as region)	28	7	4
United States	24	9	2
Guatemala	17	4	7
México	9	4	7
Honduras	7	7	4
Panama	0	0	7

Source: CID / Gallup "Study of Software Developers", December 2003.
Restricted use, authorized by the Ministry of Economy.

As a whole, the industry in El Salvador is quite small. There are a few companies which are said to be large, ie, Consisa, Datum, etc. Each of them has employees close to 100.

Assuming that major companies are included in this survey, it can be summarized as below:

- Total number of employees in the whole industry is between 2,000 and 3,000. (In addition to this number, there are ICT engineers in ICT division of private companies and government institutes);
- The biggest number of employees in a company is around 100;
- Annual revenue of 70% of the companies is less than US\$200,000. Only 20% sell over US\$500,000 annually;
- Total industry size is US\$30 to 40 million in annual sales; and
- One third of the companies have experienced business (service/product export) with USA.

Because of small size of enterprises, it may be difficult for them to bid for big projects like some government projects. And also, according to an owner of IT SME, joint venture for this kind of projects is not the culture of El Salvador. For these, in order to grow local IT companies by e-Government development, it may be necessary to divide them into smaller components.

3.4 ICT Penetration

3.4.1 Communication

(1) Telephone

As shown in Table 3.17 and Table 3.18, after the number of mobile phone users exceeded fixed line users in 1999, the number of mobile phone users is growing rapidly.

Currently around 900,000 fixed line users and more than double number of mobile phone uses subscribe at telecommunication operators shown in Table 3.19.

Table 3.17 Fixed Telephone Line Users

Year	Total Fixed lines in the Country	
	Number of Users	Number of Waiters
1997	360,410	N.A.
1998	386,659	174,163
1999	495,340	103,617
2000	625,785	72,566
2001	649,879	37,991
2002	667,699	35,243
2003	752,645	N.A.
2004	887,816	N.A.
2005	971,455	N.A.
2006*	985,047	N.A.

Source: SIGET

*: For the First Semester

Table 3.18 Mobile Telephone Users by Operator

Name of Mobile Telephone Operators	System	Number of Users (2002)
Telemóvil	AMPS/TDMA 800MHz A-band	415,000
Telefónica El Salvador	CDMA 800MHz B-band	239,100
CTE - Telecom Personal	TDMA 1900 MHz B Block	0
CTE - Telecom Personal	GSM 900	188,000
Digicel	GSM	140,000
Country Total		982,100

Source: Telecommunications and Information Highways in Latin America, México, Central America and the Caribbean, 2002, Paul Budde Communication Pty Ltd, citing Global Mobile, September 2001.

Table 3.19 Telecommunications operators in El Salvador

El Salvador 2005	
Telecommunications operators	
Long distance carriers	11
Mobile telephony	5
Fixed telephony	12
Satellite telephony	2
Trunking	4
Paging	3
Internet	11
AM Radio	52
FM Radio	144
TV	30
Cable TV	72
Satellite TV	1

Source: SIGET

Table 3.20 Total Mobile Users in the Country

Year	Total mobile Users
1997	35,700 ⁴
1998	137,114
1999	511,365
2000	743,628
2001	857,782
2002	888,818
2003	1,149,790
2004	1,832,579
2005	2,411,753
2006*	3,120,165

Source: SIGET and JICA Study Team

*: For the First Semester

(2) Current Status of Internet in El Salvador

1) Internet User Population

According to the information of Central America Internet Population Survey as of November 2005, the internet user population in El Salvador is estimated at 587,000 users. A rapid expansion has been achieved from 40,000 users in year 2000.

⁴ In 1997 only the company Telemóvil was operating, so this figure was taken from Paul Budde Communication document cited before as the total for the country.

Table 3.21 Internet Users in Central America

Central America	Current Population (2005)	Users Year 2000	Users most recent data	Population (penetration)	% of users	Growth (2000-2005)
Belize	291,904	15,000	35,000	12.0%	0.2%	133.3%
Costa Rica	4,301,172	250,000	1,000,000	23.2%	5.0%	300.0%
El Salvador	6,467,548	40,000	587,500	9.1%	2.9%	1,368.8%
Guatemala	12,328,453	65,000	756,000	6.1%	3.8%	1,063.1%
Honduras	6,569,026	40,000	223,000	3.4%	1.1%	457.5%
Mexico	103,872,328	2,712,400	16,995,400	16.4%	84.9%	526.6%
Nicaragua	5,766,497	50,000	125,000	2.2%	0.6%	150.0%
Panama	3,074,146	45,000	300,000	9.8%	1.5%	566.7%
Total C.A.	142,671,074	3,217,400	20,021,900	14.0%	100.0%	522.3%

Source: www.exitoexportador.com

However our investigation came to a conclusion that these numbers seem exaggerated. Following our request, the Siget (Superintendencia de Electricidad y Telecomunicaciones) inquired nine major ISP (Internet Service Provider) companies concerning the various internet business data such as, service menu, numbers of customers, tariff, network configuration and usage. Only 4 responded, all of them are major operators. The largest operator, Telecom, has 44,165 users at the end of December 2005. Telefonica 19,412 users and GCA Telecom 313 users respectively. Americatel reported only the number of connections (numbers of users seem to be small).

Internet business grew dramatically after telecommunication privatization took place in 1997. Since then, large private ISP companies started to install various network equipment and new communication lines, including fiber optic trunk cables along the Pan American Highway. Unique in the world standard communication policy, the central government of El Salvador never asked ISP's to open their business information to the public. No authorization from the government is needed to do any telecommunication business in terms of domestic telecommunication business activity.

Definition of the internet population is important. Siget explains that it is calculated as follows:

- A number of internet user contract times a number of average number of family members.

This method seems not right. Japanese method is the following:

- Counting one who uses internet regardless of multiple service contract nor multiple access device, such as PC, mobile phone, game equipment, Web TV.

2) Internet Tariff

Basic internet monthly charge for residential customers (Telecom, ADSL, 512kbps, 30 hours/month) is 35 US\$. It is extremely expensive comparing to Yahoo BB service charge in Japan, 3,366 yen (about US 29\$), ADSL, unlimited connection time use, 8Mbps. Telecom tariff table (see below table) show that a charge price of unlimited connection time is extremely expensive. This fact is important for internet users. In Japan, when Yahoo BB introduced a unlimited connection time ADSL service with world class low price, the residential internet market was enormously stimulated, because tireless net surfing people no longer cared about how long on the net.

Conditions of Internet services in El Salvador are changing. As of November 2006, monthly charges of ADSL 512 kbps unlimited time services are \$35 by Telecom and \$44 by Telfonica respectively.

In February 2006, SIGET sent a questionnaire to major ISPs requesting the disclosure of their Internet businesses. Only Telecom complied. However, this information can be considered as benchmark of the market in general as Telecom takes some 55% of the market, leaving the remaining 45% to the 17 other ISPs.

Table 3.22 Comparison of Broadband Access Charge (monthly charge)

Country	Monthly charge @ 100kbps (US\$)
Japan	0.07
Korea	0.08
USA	0.49
Hong Kong	0.83
Canada	1.05
Singapore	1.59
El Salvador	6.84

Source : ITU Internet Reports 2003
El Salvador; Calculated from the tariff of Telecom

The following table details the public rates for the different accesses and modalities of the related service.

Table 3.23 Internet Access Charge Rates in El Salvador

Type	Service	Access	Rate (w/o IVA)	Speed	Connection
Residential	Turbonett	ADSL	\$35.00/month	512 kbps	Unlimited
Residential	Turbonett	ADSL	\$245.00/month	1024 kbps	Unlimited
Residential	Navigator Packs	Dial Up	\$5.00/month	up to 56 kbps	5 hours/ month
Residential	Navigator Packs	Dial Up	\$10.00/month	up to 56 kbps	10 h/ month
Residential	Navigator Packs	Dial Up	\$20.00/month	up to 56 kbps	20 h/ month
Residential	Navigator Packs	Dial Up	\$30.00/month	up to 56 kbps	30 h/ month
Residential	Free Navigator	Dial Up	\$1.59	up to 56 kbps	Time of navigation
			\$1.17		
			\$2.68		
			\$1.93		
	Turbospott	Wi fi	\$6.00	N.A.	Time of navigation
Corporate		Dedicated	\$199.00/ month	128 kbps	Unlimited
Corporate		Dedicated	\$250.00/ month	256 kbps	Unlimited
Corporate		Dedicated	\$350.00 / month	384 kbps	Unlimited
Corporate		Dedicated	\$400.00 / month	512 kbps	Unlimited
Corporate		Dedicated	\$700.00/ month	768 kbps	Unlimited
Corporate		Dedicated	\$810.00/ month	1024 kbps	Unlimited
Corporate		Dedicated	\$1,000.00/ month	2048 kbps	Unlimited
Pymes		Dedicated	\$79.00/ month	256 kbps	Unlimited
Pymes		Dedicated	\$129.00/ month	384 kbps	Unlimited
Pymes		Dedicated	\$179.00/ month	512 kbps	Unlimited
	Turbomóvil free	Gprs	\$0.01	N.A.	by kbps
	Turbomóvil	Gprs	\$35.00/ month	N.A.	Unlimited

Source : Telecom report letter to SIGET (2006)

The following table shows the current ISP list.

Table 3.24 List of ISP Providers of Public Telephony

No.	Sociedad
1	ALPRE, S.A.de C.V.
2	AMERICANA DE TELECOMUNICACIONES, S.A. DE C.V.
3	Americatel El Salvador, S.A. de C.V.
4	AMNET TEL Y COMPAÑIA, SOCIEDAD EN COMANDITA DE CAPITAL VARIABLE
5	BELLSOUTH VOLCAN - BSC DE EL SALVADOR Y CIA,S. EN C. DE C.V.
6	BLUE COMM, S.A. DE C.V.
7	CATELCO, S.A.DE C.V.
8	CENTRAL AMERICAN COMMUNICATIONS, S.A. DE C.V. (CACOM, S.A. DE C.V.)
9	COMUNICACIONES DE BANDA ANCHA, S.A. DE C.V. (CBA, S.A. DE C.V.)
10	CONVERGIA EL SALVADOR, S.A. DE C.V.
11	CTE TELECOM PERSONAL, S.A. de C.V.
12	CTE, S.A. de C.V.
13	CUNDIS TELECOMUNICACIONES, S.A.
14	Charter Comunicaciones de El Salvador, S.A. de C.V
15	DIGICEL, S.A. DE C.V.
16	EDIFICIOS Y CARRIERS, S.A. DE C.V. (EDIFICAR, S.A. de C.,V.)
17	EL SALVADOR NETWORK, S.A. (SALNET)
18	El Salvador Telecom, S.A. de C.V. (SALTEL)
19	EMPRESA DE COMERCIO EXTERIOR, S.A. DE C.V. (E. C.O.E., S.A. DE C.V.)
20	EMPRESA METAPANECA DE TELECOMUNICACIONES, S.A. DE C.V. (EMETEL, S.A. DE C.V.)
21	EQUANT EL SALVADOR, S.A. de C.V.
22	EQUIPOS Y MATERIALES, S.A. DE C.V.
23	FONOMED, S.A. DE C.V.
24	G.C.M. CONTACT CENTER, S.A. DE C.V.
25	GBNET, S.A. DE C.V.
26	GENESIS TECHNOLOGIES, S.A. DE C.V.
27	GLOBALSTAR EL SALVADOR, S.A. de C.V.
28	GRUPO CENTROAMERICANO DE TELECOMUNICACIONES,S.A. DE C.V./GCA TELECOM,S.A. de C.V
29	GSK HOLDINGS, S.A. DE C.V.
30	I.P. COMMUNICATIONS, S.A. DE C.V.
31	IANNUZZELLI Y CIA.
32	IFX NETWORKS EL SALVADOR, LTDA. DE C.V.
33	INFRAESTRUCTURA UNIVERSAL DE TELECOMUNICACIONES, S.A. DE C.V.
34	INTERNATIONAL TELEPHONE AND SATELLITE CENTROAMÉRICA EL SALVADOR,S.A.
35	ISTMANIA COMUNICACIONES, S.A. DE C.V.
36	LATICOM, S.A. DE C.V.
37	MAYACOM, S.A. de C.V.
38	MUNDIAL DE TELECOMUNICACIONES EL SALVADOR, S.A. DE C.V.
39	MZ COMMUNICATIONS DE EL SALVADOR, S.A. DE C.V.
40	NEW ORBIT TELECOMMUNICATIONS, S.A. DE C.V.
41	NEWCOM EL SALVADOR, S.A. DE C.V.
42	NZT DE EL SALVADOR, S.A. DE C.V.
43	Operadora Protel de El Salvador, S.A. de C.V.
44	ORION TELECOMMUNICATIONS CORPORATION, S.A. DE C.V. (OTC, S.A. DE C.V.)
45	REDES Y SISTEMAS TELEFONICOS Y ELECTRICOS, S.A. DE C.V. (RESISTEL, S.A. DE C.V.)
46	SALCOM, S.A. DE C.V.
47	SAN JUDAS SALVADOR, S.A. DE C.V. (SANJUSAL, S.A. de C.V.)
48	SIPROSAT, SA. de C.V. (SISTEMAS Y PROYECTOS SATELITALES, S.A. DE C.V.)
49	SISTEMAS DE INTERACCION GLOBAL, S.A. DE C.V. (SING, S.A. DE C.V.)
50	Telecomunicaciones de América, S.A. de C.V. (TELECAM, S.A. DE C.V.)
51	TELEFONICA MOVILES EL SALVADOR, S.A. DE C.V.
52	TELEFONICA MULTISERVICIOS, S.A. DE C.V.
53	TELEFONOS CELULARES DE EL SALVADOR, S.A. DE C.V.
54	TELEFONOS DE CENTROAMERICA, S.A. DE C.V. (TELECASA, S.A. DE C.V.)

No.	Sociedad
55	TELEGLOUSA, INC. SUCURSAL EL SALVADOR
56	TELEMOVIL EL SALVADOR, S.A.
57	TELERED DE EL SALVADOR, S.A. DE C.V.
58	TELPRO, S.A. de C.V.
59	TRICOM, S.A. DE C.V.
60	UNILINK, S.A. DE C.V.
61	UNITELCO, S.A. DE C.V.
62	UNIVERSAL TELECOM, S.A. DE C.V.
63	VASQUEZ BONILLA TELECOMUNICACIONES,S.A. DE C.V/VB TELECOMUNICACIONES,S.A. DE C.V
64	WORLDXCHANGE COMMUNICATIONS, S.A. de C.V.

Source: SIGET and JICA Study Team

3) Access Points and Trunk Lines

According to ISP's report, more than half of employed access point technology is analogue modem (dial up or dedicated line). There are other technologies employed as well, such as ADSL (15,000), DSL (few), ISDN (1,500), wireless LAN (unknown). It is advised that high speed, inexpensive, unlimited connection time digital internet service, ADSL, is the best technology to be promoted.

Trunk lines of internet connecting major cities are required to be high speed and high volume digital line. A fiber optical cable is the best technology now. The Siget does not have a nationwide digital network diagram. Several trunk line network diagrams have been reported by Sip's. However they do not have enough information for analyzing how much additional investment needed to expand the nationwide internet population up to the planned level.

Speaking of efficiency, fiber optical cable networks have not been designed and built effectively, as they have been independently planned by each large ISP companies. It is observed that multiple electric polls are built on the both sides of highways running only a fiber optical cable on it. Siget explained that ISP companies are free to build electric poles, no application is required to be submitted. Therefore there is no collaboration made among ISP companies in order to minimize the total investment cost. Siget commented that the situation is the same in San Salvador. Strong regulation and planning share needed to realize fast and effective network expansion. The following diagram is a trunk line network of Telefonica.



Source: Prepared by SIGET for JICA Study Team

Figure 3.1 Telemovil Optical Fiber Network

4) Public Access Points

Table 3.25 El Salvador Public Access Points by Department and Type 2005

Department	Internet Cafés Internet *	Infocentros **	CRA ***	Other ****	Total
Ahuachapán	24	1	21	1	47
Santa Ana	114	3	26	1	144
Sonsonate	55	2	39	1	97
Chalatenango	20	2	38	2	62
La Libertad	118	5	32	1	156
San Salvador	413	14	75	1	503
Cuscatlán	21	2	15	-	38
La Paz	33	1	29	-	63
Cabañas	7	2	17	-	26
San Vicente	16	1	24	1	42
Usulután	40	2	46	1	89
San Miguel	102	2	50	1	155
Morazán	11	1	24	1	37
La Unión	39	3	25	-	67
	1,013	41	461	11	1,526

*Source: Ministry of Economy, DIGESTYC, VII Economic Surveys 2005, preliminary figures.

** Source: Asociación Infocentros.

*** Source: Ministry of Education, Educational Technologies Direction.

**** Source: Telecentres PPP and Agronegocios (Ministry of Agriculture and Livestock)

3.4.2 ICT Feasibilities

Statistics for 2001 and 2004, showing the penetration of PCs, the growth of this, and comparisons with other Central American countries are in the table below.

Though the penetration of PCs in El Salvador is much below that of Mexico, Costa Rica or Chile, as well as the global average, the growth is significant, as is the rapid expansion of internet users. During the past 3 years, penetration has overcome Nicaragua and Panama, and its growth rate is much above the global average.

However the penetration of PCs is only half that of for the internet. The global averages are 13.62% (internet) and 12.89% (PC); both figures are almost the same. From this, it seems the economic situation in El Salvador does not allow people to buy PCs, though they are more interested in the internet. Also it may suggest the necessity of public access terminals.

Table 3.26 PC Penetration and Growth by Country

Country	Number of PC(2001)	% of Population	Number of PC(2004)	% of Population	Growth 02-04(%)
El Salvador	140,000	2.5	297,000	4.49	28.5
Mexico	6,900,000	6.7	11,210,000	10.68	17.6
Guatemala	150,000	1.2	231,000	1.82	15.5
Honduras	80,000	1.3	110,000	1.57	11.3
Nicaragua	150,000	2.8	200,000	3.52	10.1
Costa Rica	700,000	16.6	930,000	21.89	9.9
Panama	110,000	3.7	130,000	4.1	5.7
Chile	1,795,814	12	2,138,000	13.87	5.8
World Total	550,000,000	9.0	772,357,000	12.89	12.0

Source: The Global Information Technology Report ITU