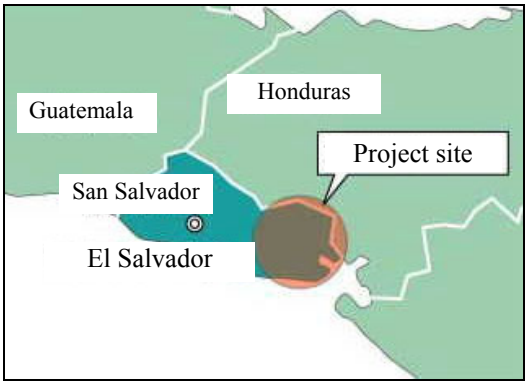
El Salvador

Water Supply and Sewerage System Improvement Project

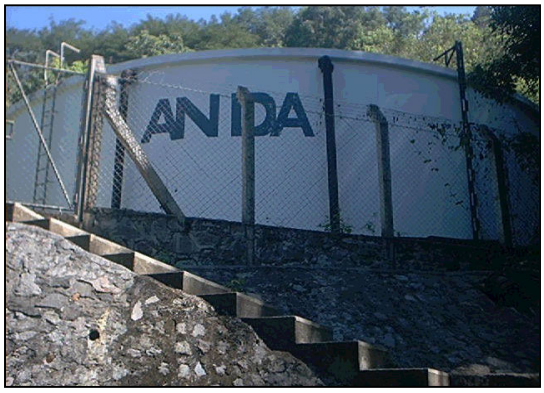
Report Date: April 2003

Field Survey: November 2002

1. Project Profile and Japan's ODA Loan



Location Map of the Project: El Salvador



Chinameca Water Storage Tank

1.1 Background

The water and sewerage sector in El Salvador had not been able to benefit from the levels of investment it required, resulting in a delay in the initiation of such projects, due to the country's ongoing civil war of over 10 years. Water and sewerage systems in El Salvador were relatively uncommon, compared to the Central and South American countries, with water supply systems covering 49% of the country, and sewerage systems just 33%. In particular, small and medium-scale urban areas located inland tended to experience problems with both water quality and quantity, and most local governments had the additional problem of untreated water being discharged into rivers. The country's rate of infection of disease spread through drinking water such as parasites and diarrhea was high, which was the reason behind El Salvador's conspicuously high rate of infant and child mortality (57/1000 persons). This situation called for the urgent installation of water and sewerage systems. The government of El Salvador, also determined to bolster its war-battered economy and bring peace to the country, initiated a national plan for El Salvador's recovery, which designated water and sewerage systems as one of the primary sectors of urgency.

1.2 Objectives

The Japan's ODA loan project was designed to facilitate repair and improvement of water and sewerage systems in 130 locations, selected out of a total of 171 candidate locations under the jurisdiction of the Administracion Nacional de Acueductos y Alcantarillados (ANDA, El Salvador's national water company) with populations of 30,000 or less based on a certain set of criteria. The project also aimed to bolster the structure of ANDA itself, improving its operations and management systems and thereby boosting water and sewerage system services.

1.3 Project Scope

This project had involved a small-scale co-financing scheme with the Inter-American Development Bank (IDB). As was agreed upon, JBIC had utilized the IDB project design and appraisal for its project formation. The ODA loan was to finance four prefectures in the eastern part of the country, under which 34 locations selected for the project were located, while the IDP financed the remaining 96 locations in 10 states.

The project was comprised of the following five components, with JBIC covering a part of number (1).

(1) Repair and improvement of water and sewerage facilities

As for water systems, the project was set to repair and improve existing infrastructure, as well as to replace electric mechanical equipment, install additional piping and accessory equipment, plus water taps and water supply meters. In terms of sewerage systems, the project involved the repair of existing treatment facilities, plus installment of household connections and simple toilets.

(2) Organizational enhancement

In order to bolster ANDA's organizational structure, consultants would be hired to implement operational management, data processing, accounting systems, and personnel training.

(3) Health education

Health education, promoting efficient use of water and sewerage systems, was to be carried out using visual aids.

(4) Assistance with sector modernization

Recommendations for possible improvements through a review of current laws and regulations as well as analysis of organizational operations, will be made in order to enhance the sectoral modernization.

(5) Equipment for operations and management

This portion of the project was to supply regional offices with equipment required for operations and management.

1.4. Borrower/Executing Agency:

Government of the Republic of El Salvador/ANDA

1.5. Outline of Loan Agreement

Loan Amount Loan Disbursed Amount	1,210 million yen 1,191 million yen
Exchange of Notes Loan Agreement	March 1993 March 1993
Terms and Conditions -Interest Rate -Repayment Period (Grace Period) -Procurement	 3.0 % 30 years (10 years) General untied
Final Disbursement Date	December 2000

2. Results and Evaluation

2.1 Relevance

Due to the impact of the country's civil war, investment toward El Salvador's water and sewerage sector was significantly delayed, leading to a situation where such systems were relatively rare in El Salvador in comparison with other Central and South American countries. The country had water supply systems in place covering 49% of the country, and sewerage systems just 33%. In particular, small and medium-scale urban areas located inland tended to experience problems with both water quality and quantity, and most local governments had the additional problem of untreated water being discharged into rivers. Stemming from this situation, the instance of health-related problems such as parasites and diarrhea was frequent, causing extremely high rates of infant and child mortality. The government of El Salvador, also determined to bolster its war-battered economy and bring peace to the country, initiated a national plan for El Salvador's recovery, which designated water and sewerage systems as one of the sectors assigned primary urgency. The ODA loan project was considered suitable to the needs of the people of El Salvador, as well as to the country's development plans, making it highly relevant. Despite the fact that it was initiated behind schedule, the project has sustained its relevance as a necessary endeavor in light of the critical need for water and sewerage system repairs.

2.2 Efficiency

2.2.1 Project Scope

At the time of appraisal, JBIC's portion of the project was scheduled to cover 34 locations in the eastern part of the country, while IDB was to handle 96 locations in other areas, both carrying out water and sewerage system repairs. However, due to changes in the yen-dollar rate and a partial scale-down of project scope during the implementation period, which freed up funds for the part of the project under JBIC's supervision, JBIC's portion was increased by seven locations from the original 34 to 41. As for the part of the project under IDB's control, meanwhile, some of the urban areas originally scheduled for repairs were shifted to KfW and the government of Luxembourg since these donors were carrying out similar projects during the implementation period. The number of locations under the IDB's supervision therefore dropped by 18, for a total of 78. The organizational enhancement aspect of the project was also transferred to KfW and the government of Luxembourg for a number of the cities involved, reducing IDB's portion for this segment of the project from 130 to 119.

Further, repairs on a number of wells were impossible due to depletion of the water. Construction of a total of 35 new deep wells, a need unforeseen at the time the project was appraised, was therefore added to the project. Nineteen of these were to be covered by the ODA loan, and 16 by a loan from the IDB[1].

[1] Phases I and II of the project involved repairs of water and sewerage systems, while Phase III involved deep well

Because ANDA, together with the Ministry of Health, determined that access to water systems would be limited to families equipped with some type of drainage system, simple toilets were included in the original scope of the project. Subsequently, however, due to the fact that many of the cities involved were already equipped with wastewater tanks, the toilet component was deemed unnecessary and thereby cancelled.

Other parts of the same greater project included enhancement of related organizational quality, modernization of the sector, health education, and so on, with the assistance of the IDB. Consultants were hired to aid with the improvement of organizational structures, upon which reviews of water utility fee systems, the operations and maintenance process, and management systems were carried out. Steps taken toward sector modernization, meanwhile, included a review/revision of the body of related laws and of the role of governmental agencies operating in the water sector, as well as its entire fee structure. Health education drives informing the public through newspapers and magazines, and through public and private schools, on issues such as procedures for handling water, the importance of water and sewerage services, and the different usages of water, were conducted.

According to the Project Completion Report (hereinafter referred to as "PCR") compiled by the IDB, $25 million was allocated to water system repairs, while $2.4 million—one tenth the budget for water system repairs—was allocated for sewerage systems when the project was first appraised. The latter was carried out on a yet smaller scale than originally scheduled, and even in cities where sewerage system repairs were conducted, construction of wastewater treatment facilities as well as repairs on existing facilities were not implemented. In such cases, activity was, reportedly, limited to the extension of drainage pipes.

2.2.2. Implementation Schedule

Following the conclusion of the loan agreement, the water system repairs portion of the project was delayed by approximately two years, and the completion of the project as a whole by four years.

The following have been cited as among possible major causes for the delay of the water services repairs:

1) Population migration continued for several years following the conclusion of the civil war;
2) Because of the depletion of some wells and water sources, it became clear during the course of the project that construction of new deep wells had to be included in the project scope. Expanding the project scope from just repaires to construction of wells, however, involved great difficulty for IDB, which required a significant period of time for the adjustment;
3) In the eastern areas assisted by JBIC, the presence of land mines impeded water surveying and delayed detailed planning;
4) Funds scheduled to be delivered by the El Salvador government were insufficient;
5) The impact caused by Hurricane Mitch;
6) Time was required for coordination between JBIC and the IDB.

According to the PCR compiled by the IDB, additional problems existed regarding coordination between ANDA headquarters and regional offices, a factor which also consumed additional time.

Meanwhile, while the portions of the project assisted by the IDB alone, i.e. consulting services,

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construction as well as the repairs component.

sector modernization, health education, supplies and equipment procurement for regional offices, etc., began roughly on time, completion was delayed by approximately four years. Delays in IDB-sponsored consulting services are attributed to problems with consultant selection. Consulting services implemented by JBIC acting alone, however, were carried out in accordance with schedule.

According to statements made by ANDA coordinators, administrative procedures between JBIC and IDB carried out were wrought with complexity. While JBIC-sponsored procurement was to follow JBIC procurement guidelines, ANDA went through the IDB for JBIC procurement-related paperwork. Also according to ANDA, the IDB-JBIC small-scale co-financing scheme proved inefficient, resulting in delays in project implementation. Although JBIC attempted to improve efficiency, i.e. to speed up disbursement methods and, by distributing memorandums on administrative procedures, to boost coordination between ANDA, the IDB, and JBIC, the new financing scheme appeared to pose difficulties for project implementation.

2.2.3 Project Cost

Total project cost at the time of appraisal was estimated at 3,908 million yen, 1,210 million yen of which was the estimated cost for the JBIC portion. In actuality, however, costs totaled 4,200 million yen, with JBIC covering 1,191 million yen of the total (see table 1). The reason for the slight discrepancy is attributed to the fact that the yen, estimated at $1=121 yen when the project was appraised, rose approximately 20% to an average rate of $1=105 yen during project implementation.

Costs incurred by the IDB, joint financier for the project, also fell within estimates made at appraisal. Costs covered by the government of El Salvador, however, ran 382 million yen over estimates due to the following factors, among others:

1) Consumption tax was not included in costs when the project was appraised;
2) Additional administrative and management costs incurred during the prolonged implementation period;
3) Fluctuating exchange rates;
4) Additional repair costs arising from damage incurred by Hurricane Mitch.

Table 1: Project Cost (by category) (Unit: Million yen)

	Project Cost (estimated at appraisal)				Project cost (actual)			
Category	Total	JBIC portion	IDB portion	El Salvador portion	Total	JBIC portion	IDB portion	El Salvador portion
Water and sewerage systems	2,918	1,067	1,834	17	3,670	1,191	1,895	584
Consulting services	228	0	19	209	58	0	58	0
Organizational Capacity Building	191	0	120	71	286	0	212	74
Reserves	431	143	261	27	0	0	0	0
Commission	140	—	65	75	186	—	63	123
Total	3,908	1,210	2,299	399	4,200	1,191	2,228	781

Exchange rate at appraisal: 1US$ = 121yen, 8.75 colones
Exhange rate for actual project cost: 1US$ = 105 yen

Due to the delays described above, project fund disbursement was completed four years behind schedule (see Table 2).

Table 2: Project Cost (by year) (Unit: million yen)

Year	Project Cost (estimated at appraisal)				Project cost (actual)			
	Total	JBIC Portion	IDB portion	El Salvador portion	Total	JBIC portion	IDB portion	El Salvador portion
1992	0	0	0	0	6	0	0	6
1993	447	0	364	83	12	0	1	11
1994	1,299	284	898	117	39	0	15	24
1995	1,047	890	54	103	230	0	180	50
1996	1,115	36	983	96	757	143	533	81
1997	0	0	0	0	1,084	298	691	95
1998	0	0	0	0	925	287	448	190
1999	0	0	0	0	671	163	311	197
2000	0	0	0	0	476	300	48	128
Total	3,908	1,210	2,299	399	4,200	1,191	2,228	781

Exchange rate at appraisal: 1US$ = 121yen, 8.75 colones
Exhange rate for actual project cost: 1US$ = 105 yen

2.3 Effectiveness

2.3.1 Changes in water and Sewerage system services

Because targets for operation and effect indicators were not set at the time of the project appraisal, the degree to which goals were achieved could not be analyzed based on the indicators. However, quantitative data on the water and sewerage sector (presented below in tables 3-6) for the whole of El Salvador as well as for the eastern part of the country (that assisted by JBIC) indicates that water and sewerage system services improved as a whole. Due to the fact, however, that similar projects were being carried out around the country simultaneously by KfW, the government of Luxembourg, USAID, UNICEF, the government of El Salvador, international NGOs, and others, it is difficult to ascertain by analysis to what degree the ODA loan project contributed to the improvement of water and sewerage services[2].

According to household surveys conducted by the government of El Salvador before and after the project was implemented—in 1995 and 1999—the number of households provided with water and sewerage services in urban areas, including in the regions serviced by the ODA loan project, rose by approximately 4% over the period of 1995-1999.

[2] Because ANDA data on donor and NGO assitance amounts was inaccurate, there are difficulties with ascertaining to what degree the project contributed to the improvement of the water and sewerage sector via percentage calculations based on the amount of assitance provided

Table 3: Trends in numbers of households with water & sewerage services

Category	Total		Urban areas (see note)		Local areas (see note)	
	1995	1999	1995	1999	1995	1999
No. of households equipped with water services	546,063 46.7%	751,549 54.3%	461,228 67.2%	615,413 71.6%	84,835 17.6%	136,136 26.0%
No. of households lacking water services	623,391 53.3%	631,596 45.7%	225,290 32.8%	244,669 28.4%	398,101 82.4%	386,927 74.0%
Total	1,169,454 100.0%	1,383,145 100.0%	686,518 100.0%	860,082 100.0%	482,936 100.0%	523,063 100.0%

Souce: Encuesta de Hogares de Propósitons Múltiples de DIGESTYC (1995, 1999) (Human Development Report, 2001, El Salvador)
Note: "Urban areas" refers to small and medium-sized urban cities covered by the project, whereas "local areas" refers to all other regions.

At the same time, as denoted by Table 4, the population living in the country's eastern areas with access to safe water including wells, public water sources, household water services, and so on, rose as a whole.

Table 4: Changes in % of population with access to safe drinking water (Unit: %)

Year	Nation-wide	San Miguel	Usultan	Morazan	La Union
1992	---	34.0	28.0	15.0	14.0
1999	66.0	46.2	40.2	44.4	41.7
Increase	N/A	12.2	12.2	29.4	27.7

Source: 1992 census report (Human Development Report, UNDP, 2001, El Salvador, statistics on poverty)

In tandem with access to water and sewerage systems, water usage per capita increased in three of the four eastern prefectures covered by the project (see figure 5).

Figure 5: Water Consumption Per Capita (Note) (Unit: Cubic meters/month)

	1993	1996	1999	2000
San Miguel	3.2	2.4	3.9	3.8
Usultan	3.1	2.7	4.0	2.8
Morazan	3.0	3.0	4.0	3.7
La Union	3.7	3.3	4.9	5.9

Source: ANDA Buletin Estadiatica 1993, 1996, 1999, No.22 (2001) (Municipios Atendidos por ANDA Con Servicios De Acueductos y Alcantarillado)
Note: Paramter = total population for the project-assisted area

As indicated by Table 6, access to sewerage systems improved following project implementation in all four eastern states covered by the project. Judging by these results, it can be surmised that the project has contributed to some extent to the popularization of sewerage systems.

Table 6: Changes in access to sewerage systems (Unit: %)

Year	Nation-wide	San Miguel	Usultan	Morazan	La Union
1992	---	30.0	17.0	9.0	10.0
2000	66.0	47.0	32.0	12.0	20.0
Improvement	N/A	17.0	15.0	3.0	10.0

Source: 1992 census (ANDA Buletin Estadiatica No.22 Cobertura de Pobulacion Urbana Atendida por ANDA con servicio de acueducto y alcantarillado con conexiones domiciliares, 1997-2000)

2.3.2 Recalculation of the Economic Internal Rate of Return (EIRR)

Though the EIRR was calculated at the appraisal stage, because ANDA failed to maintain data continuously, the figure could not be re-calculated following the conclusion of the project. For similar reasons, the IDB also did not calculate an EIRR.

2.4 Impact

2.4.1 Impact on Health

Based on incidence of diarrhea and parasites, and on population growth forecasts estimated from 1992 census data, an estimated yearly rate of infection was calculated for the four JBIC-assisted eastern prefectures (see tables 7 and 8). According to these statistics, the instance of diarrhea and parasite infection per 10,000 people increased during the project implementation period. This trend was seen not only in the eastern departments, but across the entire country during this period, the cause of which is attributed to the following:

1) Accuracy of data in health statistics had been improved, as the data collection technique had been advanced simultaneously with the project implementation, ;
2) Population growth was higher than originally estimated[3]; and
3) Surface water was becoming significantly increasingly polluted[4].

Table 7: Instance of diarrhea infection in the four project-assisted eastern departments (Unit: Instance per 10,000 persons)

	1995	1996	1997	1998	1999
Usultan	319	331	394	375	326
San Miguel	291	289	431	416	427
Morazan	176	249	378	348	337
La Union	160	176	324	345	456
Total	253	269	389	380	394

Souce: Ministerio de Salud Publica y Asistencia Social, Unidad de Epidemiologia, and instance of infection calculations based on population forecasts estimated from 1992 census figures.

[3] Rates of diarrhea and parasite infections given in tables 7 and 8 are actual figures. Population parameters are estimates based on 1992 figures. Rates of infection were calculated based on this data, but since the actual population was higher than that originally estimated based on the 1992 population, actual rates of infection could possibly be lower.

[4] According to the Human Development Report of 2001 compiled by the UNDP, the increasing instance of diarrhea and parasites in recent years is thought to be attributable to worsening pollution of surface water, though the report is inconclusive due to the fact that the data utilized was incomplete.

Table 8: Instance of parasite infection in the four project-assisted eastern departments

(Unit: Instance per 10,000 persons)

	1995	1996	1997	1998	1999
Usultan	349	441	596	659	635
San Miguel	254	371	643	526	600
Morazan	248	396	510	358	421
La Union	202	288	480	345	432
Total	267	374	575	497	547

Source: Ministerio de Salud Publica y Asistencia Social, Unidad de Epidemiologia, and instance of infection calculations based on population forecasts estimated from 1992 census figures.

For reasons described above, it is difficult to ascertain the impact of the project on health issues in quantitative terms expressed based on health statistics. According to data collected from project beneficiaries[5], however, 19.5% of total respondents noted that the water system repairs project dramatically improved their living conditions, while 28.5% noted that there had been some improvement, for a total of 48% reporting a positive outcome of the project on their lives. Specific improvements included a lower incidence of waterborne diseases including diarrhea, reported by 27.3% of respondents, and increased bathing opportunity, reported by 23.5%. Among beneficiaries who responded that their living conditions had improved, 50.8% indicated a positive impact on health and sanitary conditions. Meanwhile, 30.5% reported better health and sanitary conditions due to repairs made to sewerage systems under the project, and 14.5% stated that public sanitation had improved. Nine percent of respondents reported other types of impact.

2.4.2 Environmental Impact

According to reports given by local residents living near the outfall, which is a dumping point for polluted water, untreated water was being disposed of into the waters. Though the negative impact of this action on human health and the environment was sufficiently known, ANDA's budget for small and medium-sized cities was not adequate enough to remedy the situation. At the same time, the areas also lacked funds to construct sewerage systems. Due to the urgent nature of the project, designed to facilitate the country's recovery, the issue of timeliness was given priority at the time the loan was concluded, leaving little time for adequate feasibility studies. Further, the prevailing need for water systems took precedence over sewerage systems, repairs of which were planned on a much smaller scale from the beginning. The sewerage system component was scaled down even further when the project was actually carried out; in small and medium sized cities designated for sewerage system upgrading, work was reportedly limited to the extension of drainage pipes, with no new wastewater treatment facilities constructed and no existing facilities repaired. In light of these developments, the possibility that negative impact on the environment was overlooked cannot be discounted.

[5] Survey was conducted in questionnaire form in four locations covered by the project at the time the evaluation report was compiled, with approximately 200 respondents.

2.4.3 Reduced Time for Drawing Water

It is reported by 21.5% of respondents that time required for drawing water has been reduced, attributed to the extended hours of water supply, while 78.5% gave no responses in this category.

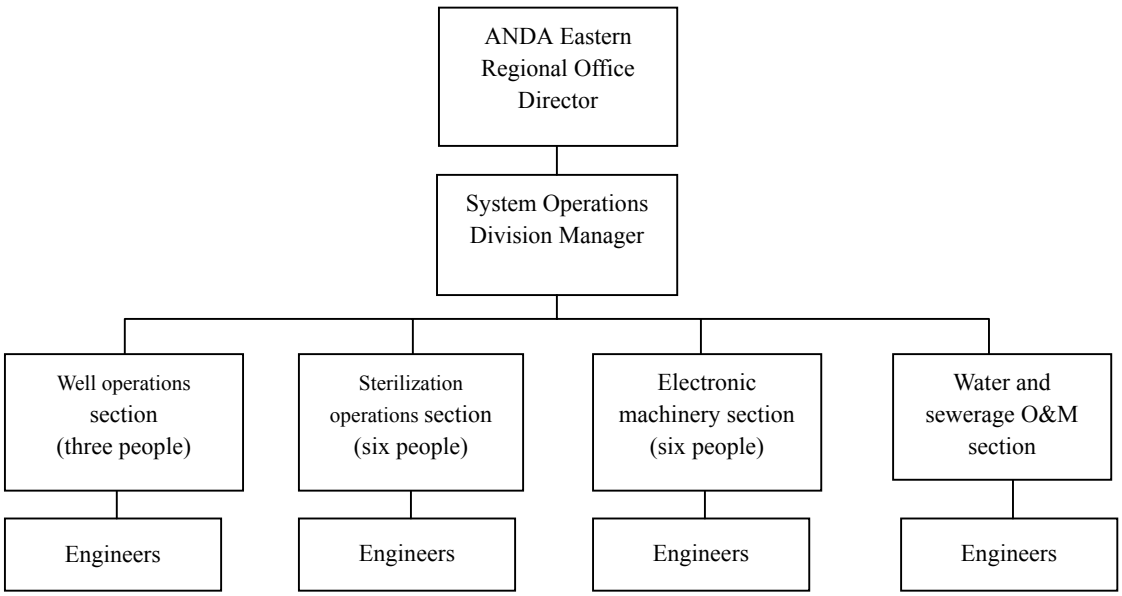
2.5 Sustainability

2.5.1 Organization for Operation and Maintenance

Operation and maintenance related to repairs and improvements made to water and sewerage systems fell under the jurisdiction of ANDA's eastern regional office. The office conducted O&M through contracted companies as well as its own personnel. Amongst a staff of approximately 209 personnel, 175 were assigned to system operations division (see figure 1). Where certain equipment was required, or in special cases, the regional office would request the assistance of ANDA headquarters.

According to the IDB, the IDB-financed protion included the organizational capacity building, through which the O&M process was clarified. However, due to a lack of recognition of the importance on the part of ANDA—the executing agency—, results of surveys and proposals offered by consultants were not acted upon. Combined with the transfer of employees who had undergone training to other departments, the result was that no significant improvement was achieved in terms of the organizational capacity of ANDA's regional offices. Though efforts continued to be made to boost the staff quality of ANDA's eastern regional office, improvements are difficult to maintain due to the fact that many staff are lured from ANDA to private companies with superior benefits.

Figure 1: ANDA Eastern Region Office.
Operations Division Structure



2.5.2 Implementation Operation and Maintenance

Collection of water tariff is conducted by ANDA Headquarters in San Salvador, while the role of ANDA's Eastern Regional office includes daily operations and maintenance of water systems. The regional office therefore applies annually at ANDA headquarters for its budget, which must be approved by the latter. Table 9 below indicates O&M expenditure for the ANDA Eastern Regional Office. According to statements made by employees at the regional office, the amount disbursed by headquarters is not necessarily sufficient to implement all required aspects of operations and maintenance. However, the office is gradually increasing, year by year, the budget amount that it applies for, and is working to carry out proper operations and maintenance wherever possible.

Table 9: ANDA O&M Expenditure for the Eastern Regional Office

（Unit: Thousand dollars）

Fiscal Year	Maintenance costs	Operations costs	Total
1993	500	1,800	2,300
1999	750	1,925	2,675
2000	750	3,500	4,250
2001	1,200	5,500	6,700
2002	1,750	7,750	9,500

Source: ANDA's questionnaire responses

According to ANDA's annual report, the percentage of repairs accomplished in the eastern part of the country stood at 98.5% (refer to Table 10).

Table 10: Repairs made to ANDA's water and sewerage systems (2001)

	San Salvador vicinity	Central region	Western region	Eastern region	Total
Water systems					
Locations in need of repair	33,123	7,478	4,915	626	46,142
Repaired locations	30,421	6,701	4,915	617	42,654
Percent	91.8%	89.6%	100%	98.6%	92.4%
Sewerage systems					
Locations in need of repair	1,619	500	327	343	2,849
Repaired locations	1,619	480	327	338	2,764
Percentage	100%	85.7%	100%	98.5%	97.0%

Source: ANDA Informe de Labores 2001（Annual report, fiscal 2001）

2.5.3 ANDA Financial Status and Its Tariff System

According to ANDA's P/L statements, the company carried a 3-4-million-dollar debt for 1999 and 2000, but made a surplus of $41 million in 2001 (see Table 11).

Table 11: Profit-and-Loss Statement (ANDA) (Unit: U.S. $)

	1999	2000	2001
Total revenues	**68,987,935**	**75,170,791**	**145,875,759**
Operating income	63,700,880	66,750,248	68,621,769
Income derived from transfer of liquid assets	461,939	56,003	44,609,551
Income derived from transfer of fixed assets	1,803,321	6,355,487	22,682,022
Other	3,021,796	2,009,053	9,962,417
Total expenditure	**73,557,285**	**78,697,484**	**104,064,023**
Operating expenses	63,822,041	69,082,910	91,977,128
Overhead costs	48,554,574	53,670,914	73,091,628
Sales cost	6,330,581	5,055,636	3,355,703
Administrative costs	8,936,886	10,356,360	15,529,797
Financing charges/taxes	,735,243	9,614,574	12,086,895
Profit/loss	**-4,569,350**	**-3,526,693**	**41,811,736**

Source: Profit-and-loss statements, ANDA, 1999-2001.

Since the ODA loan project was initiated, water tariff has been raised three times: in 1994, 1996, and 2000. However, since operating income had leveled off at approximately $60 million in the years 1999-2001, the link between raising tariff and ensuring an improved financial basis for ANDA is unclear.

2.5.4. The Rate of Non-revenue Water

According to ANDA's annual report for fiscal 2001, the rate of non-revenue water totaled 17.4% for the country as a whole (see Table 12). It has to be noted, however, that at present ANDA is in the process of installing water meters at individual households, which calls into question the accuracy of currently available statistics.

Table 12: Percentage of non income-generating ANDA water services (2001)

	San Salvador vicinity	Central Region	Western Region	Eastern Region	Nationwide total
Non income-generating water	10.0%	14.0%	29.8%	32.9%	17.4%

Source: ANDA annual report, fiscal 2001

2.5.5 The sector's future trends

At present, the government of El Salvador is in the process of modernizing the national government, i.e. privatizing the communications and electric power sectors, decentralizing water and sewerage services provided to small and medium scale urban centers to regional authorities, and entrusting NGOs with the protection of nature. At the same time, by a new IDB loan project, reforms are being carried out in the waterworks sector through consultation with NGOs, , and entrusting water and sewerage services to public water companies at the local level for small and medium sized cities, as well as by NGOs. Though ANDA currently holds a monopoly in the water and sewerage sector market, it is believed that once decentralization to local authorities, as well as the expansion of the market to include NGOs and the private sector, takes place, ANDA's financial position thereby

its organizational capacity will deteriorate, due to problems with quality and quantity of the service.

3. Feedback

3.1 Lessons Learned

Even in cases where partner donors in joint financing schemes are contracted to provide project-related services, operations are rendered more effective if JBIC holds consultations on project details with parties concerned in recipient countries.

This project involved a small scale co-financing scheme between IDB and JBIC. JBIC had utilized the project design and appraisal of IDB. However, in the schemes as this project, where partner donors are delegated partial responsibility for procurement, it is advisable that JBIC holds consultations in advance with the executing agency and financial authorities in the recipient country, among other parties concerned, on project details in order to facilitate more efficient project operations.

Where emergency circumstances such as post-conflict conditions prevail, problems may arise at the implementation stage as timeliness of the project is prioritized over other factors. Keeping the possibility of such problems in mind, it is advisable to devise a safety net to supplement inadequate feasibility studies.

According to the IDB coordinator present at the time the project was formulated, this particular loan project was designed to provide emergency aid to alleviate post civil-war conditions. As a result, the project was approved and implemented with priority given to timeliness as opposed to adequate feasibility studies. This led to a situation during implementation where problems arose due to changes made to project scope, which in turn required additional time to resolve, thereby delaying the project and impeding efficiency. Further, despite awareness of serious health and environmental issues, the sewerage system component of the project could not be adequately conducted. In this project, JBIC had utilized IDB's project design and appraisal, however, it can be gleaned from this experience that even in cases of emergency assistance, potential problems should be carefully considered, and a safety net should be in place to compensate for insufficient feasibility studies.

3.2 Recommendations

Nothing in particular to report.

Comparison of Original and Actual Scope

Item	Plan	Actual
1. Project Scope		
Water and Sewerage System Repairs	JBIC: 34 small and medium-sized urban areas in eastern El Salvador IDB: 96 small and medium-sized urban areas in other regions Installation of 2500 simple toilets	JBIC: 41 small and medium-sized urban areas in eastern El Salvador Construction of 19 deep wells IDB: 78 small and medium-sized urban areas in other regions Construction of 16 deep wells Simple toilet installation terminated
Organizational enhancement (IDB)	140 small and medium-sized urban areas	119 small and medium-sized urban areas
Health education (IDB)	Implement health education on efficient use of water and sewerage systems utilizing visual aids.	As left
Assistance on sector modernization (IDB)	To enhance the organizational structure of ANDA, hire consultants to implement operations management, data processing, accounting systems, employee training, etc.	As left
Equipment needed for operations & management (IDB)	Procure equipment necessary for operations at regional offices.	As left
2. Implementation Schedule		
(I) Water and sewerage system repairs		
1) Procurement	March 1993 – October 1993	February 1995 – May 1995
2) Construction	November 1993 – October 1994	December 1995 – June 1997
(II) Water and sewerage system repairs		
1) Procurement	January 1994 – September 1994	May 1997 – August 1997
2) Construction	October 1994 – October 1995	September 1997 – October 1999
(III) Water and Sewerage System Repairs		
1) Procurement	January 1995 – September 1995	November 1998 – July 2000
2) Construction	October 1995 – October 1996	January 1999 – December 2000
Consulting services	January 1993 – December 1996	January 1993 – August 1998
(I) Sector modernization		
1) Procurement	January 1993 - June 1993	January 1993 – September 1993
2) Implementation	July 1993 - June 1994	N/A
(II) Health education	August 1993 - December 1996	August 1993 – August 1999
(III) Equipment purchases for regional offices		
1) Procurement	July 1993 – June 1994	January 1993 – July 1999
2) Implementation	July 1994 – December 1994	N/A
3. Project cost		
Foreign currency（JBIC）	1,210 million yen	1,191 million yen
Foreign currency（IDB）	2,299 million yen	2,228 million yen
Local currency	399 million yen	781 million yen
Total	3,908 million yen	4,199 million yen (see note)
ODA loan portion	1,210 million yen	1,191 million yen
Exchange rate	$1 = 121 yen （as of December 1993）	$1 = 105 yen （Average for the period of December 1993 to December 2000）

Note: Foreign and local currency subtotals may not necessarily correspond to grand totals due to rounding

Third Party Evaluator's Opinion on
Water Supply and Sewerage System Improvement Project

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Relevance

Since the appraisal stage, the project adequately met with the National Plan for El Salvador's Recovery, based on the development policies, specifically those for the social infrastructure affected during the conflict. Today, the objectives of the project are still met and contribute to the region's well-being.

The project intention fulfilled the majority of the needs and demands. The ODA loan project accommodated to the increased levels of poverty and disease, implementing programs that provided an immediate response to the most critical necessities of drinkable water and sewerage conditions for Salvadorans.

The most important change that affected the project scope was the inability to fulfill the proposed repairs of water wells due to the depletion of the water in those areas. However, the construction of new deep wells (19 covered by ODA loan) was a more relevant and accurate activity. The elimination of simple toilets was necessary due to the fact that the cities involved were already equipped with waste water tanks.

ODA's main objective was to fulfill the priorities of the population and take immediate action with the water supply and sewerage system. The other donors present in the same project area contributed to enhance ODA's objectives through greatly improving water and sewerage services within the eastern region of the Country.

The scope of the project was designed appropriately to met the effectiveness and efficiency desired.

Despite many variables that arose because post-conflict conditions; the project was successful in improving the overall goal of access to drinkable water and sewerage systems benefiting the target population.

Impact

The overall goal of providing water supply and sewerage system was achieved by the project. Due to the enormous lack of social infrastructure, especially in the eastern region, any project no matter its size contributes to alleviate part of the problem.

The high degree of achievement has not been affected by assumptions taken in the scope because reorientation and flexibility were important elements when implementing the project. However, potential health and environmental issues were not taken into assumption during the time that the project was formulated causing some flaws in the sewerage component of the project.

The lack of health improvement in the population is a hindering factor that affected the achievement of ODA's overall goal. Although data collected from project beneficiaries reported dramatic improvement of health and sanitary conditions, the occurrence of diarrhea and parasites infection grew throughout the duration of the project.

The sewerage system component was cut substantially due to the timeliness of the project as well as the greater needs of the water systems. Due to this, waste water treatment facilities were unable to be constructed or repaired causing probable negative impacts on the environment.

After the completion of the project, there was a positive impact in the social and economic development of the area. One example is that the water supply improved the quality of life by providing fresh, abundant and immediate water and therefore contributing to better sanitary conditions.

The impact of unforeseen problems associated with the four year delay in the project

due to both outside and inside variables should be taken into consideration when looking at the cutback on construction of sewerage facilities as well as repairs.
There were no impacts on laws and regulation since the scope was oriented in accordance with the legal frame. Since this loan was authorized by Congress, it had no contradictory precepts.