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**WATER AND SANITATION
FOR HEALTH PROJECT**

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**PLANNING FOR
CENTRAL AMERICA WATER SUPPLY
AND SANITATION PROGRAMS:
UPDATE**

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WASH FIELD REPORT NO. 253

MAY 1989

Prepared for
the LAC Bureau,
U.S. Agency for International Development
WASH Activity No. 334

827-AAC89-5301

5301
(027 AAC09)

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UPDATE

Prepared for the LAC Bureau,
U.S. Agency for International Development
under WASH Activity No. 334

by

Frederick S. Mattson

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LO: 027 AAC09
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ACRONYMS

A.I.D.	U.S. Agency for International Development/Washington
AyA	<i>Agua y Alcantarrillados</i> (national water and sewer agency - Costa Rica)
CABEI	Central American Bank for Economic Integration
CAI	Central America Initiative
CARE	CARE International
CBHNP	Community Based Integrated Health and Nutrition Project (Guatemala)
CDC	Commonwealth Development Corporation
CIDA	Canadian International Development Agency
EMPAGUA	<i>Empresa Municipal para Agua de Guatemala</i> (Municipal Water Authority - Guatemala City)
GOB	Government of Belize
GOCR	Government of Costa Rica
GOES	Government of El Salvador
GOG	Government of Guatemala
GOH	Government of Honduras
IBRD	International Bank for Reconstruction and Development (World Bank)
IDAAN	<i>Instituto de Acueductos y Alcantarillados Nacionales</i> (National Water & Sewer Authority - Panama)
IDB	Inter-American Development Bank
INFOM	<i>Instituto Nacional de Fomento de Obras Municipales</i> (National Agency for the Development of Public Works - Guatemala)
LAC	Bureau for Latin America and the Caribbean
RHUDO	Regional Housing and Urban Development Organization

ACRONYMS (cont'd)

SANAA	<i>Servicio Autonomo Nacional de Acueductos y Alcantarillados</i> (National Autonomous Agency for Water and Sewerage - Honduras)
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
UNEPAR	<i>Unidad Ejecutora del Programa de Acueductos Rurales</i> (An entity of the Ministry of Health - Guatemala)
USAID	U.S. Agency for International Development/Overseas Mission
WASH	Water and Sanitation for Health Project

EXECUTIVE SUMMARY

This report presents an update of WASH Field Report No. 209, Planning for Central America Water Supply and Sanitation Programs, dated November 1987. The purpose of the earlier study was to determine the existing levels of coverage, assess past and proposed investment plans, and determine whether additional funding would be required to meet the objectives of the Central American Initiative (CAI). This document updates (through 1988) water supply and sanitation information from the earlier report and assesses the current situation in the region.

The CAI objectives are the targeted numbers of persons to be served by adequate water and sanitation facilities in four sectors (urban water, urban sanitation, rural water, and rural sanitation) in each of the Central American countries. AID's LAC Bureau established the level of the objectives as an increase of 25 percent over the number of persons served in 1984. According to the Kissinger Bi-Partisan Commission, the CAI objectives were to be met by 1989. The 1987 WASH report indicated that only two of the 24 country sector objectives (four each for six countries) had been met by the end of 1986. These two sectors were urban sanitation in Belize and rural sanitation in Costa Rica.

The present update indicates that since the time of the original report an additional 860,000 persons are being served with adequate water supply and 1,232,000 with adequate sanitation. With these advances, 10 of the 24 country sector objectives have now been met and a total of 12 are projected to be met by the end of 1989. In other words, it is now estimated that half of the CAI sector objectives will be met by 1989. The best current projection of when the CAI objectives will be met is shown below.

SCHEDULE FOR MEETING CAI OBJECTIVES

	URBAN		RURAL	
	Water (yr)	Sanitation (yr)	Water (yr)	Sanitation (yr)
Belize	post-1992	met	met	met
Guatemala	post-1992	post-1992	1989	1989
Honduras	1990*	post-1992	1991*	met
El Salvador	met	met	post-1992*	post-1992*
Costa Rica	met	met	post-1992	post-1992
Panama	post-1992	met	met	post-1992

* Will not be met by 1989 even though funding is sufficient.

The above schedule projects that the CAI objectives will be met somewhat sooner than was estimated in the original report. This in part reflects the fact that the level of funding has increased to slightly higher levels than was originally projected. The approximate nature of the data and the short time frame since the time of the original report, however, make it too early to identify definite trends.

Both the original report and this update estimate the investment levels necessary to meet the CAI objectives. Both documents also present the current levels of funding that are firmly committed to increase water and sanitation coverage. The data show that committed funds are substantially below the investment levels required to meet the objectives. This, of course, is consistent with the above schedule indicating that all of the target levels cannot be met with present funding.

In the original document it was reported that, as of the end of 1986, a total of \$240 million in committed monies was lacking to meet the CAI objectives in the region. Due to an increase in the level of committed monies coupled with increases in new facilities and persons served, this figure had fallen to approximately \$89 million as of the end of 1988. The current breakdown by country and sector of monies needed, but not yet committed, to meet the CAI objectives is given below.

ADDITIONAL FUNDING NEEDED TO MEET CAI OBJECTIVES

(costs in thousand US\$)

	URBAN		RURAL		TOTAL
	Water	Sanitation	Water	Sanitation	
Belize	1,287	0	0	0	1,287
Guatemala	26,750	15,400	0	0	42,150
Honduras	0	16,008	0	0	16,008
El Salvador	0	0	0	0	0
Costa Rica	0	0	13,317	3,277	16,594
Panama	11,730	0	0	1,105	12,835
Total	39,767	31,408	13,317	4,382	88,874

The concept of committed funds to increase coverage used in the reports includes only those firmly committed funds which will be used specifically to extend coverage. Investments that upgrade existing facilities or that provide for studies are not included. Also not included are funds that extend coverage in sectors that have already met the CAI objective.

Despite the gains made, the absolute increase in persons served by adequate water and sanitation facilities in the last two years on the whole has been only slightly greater than the regional population increase. Hence, in the water sector (urban and rural), the percentage of persons served only went from 57 percent to 59 percent and in sanitation from 55 percent to 58 percent. This is the challenge of meeting water and sanitation needs in Central America. To make truly significant advances and to reduce the absolute numbers of people without service will require a long-term approach focused on building sustainable facilities and institutions.

Chapter 1

INTRODUCTION

1.1 Purpose and Scope

This document updates WASH Field Report No. 209, Planning for Central America Water Supply and Sanitation Programs, dated November 1987, and hereafter referred to as the "original document" or the "1987 Report." The original document was prepared for the LAC Bureau of the U.S. Agency for International Development (A.I.D.) to serve as a "desk-top" study. Using readily available information, the document estimated the levels of funding needed to meet the 1989 water supply and sanitation objectives of A.I.D.'s Central America Initiative (CAI). These objectives were formulated from recommendations made by the Kissinger Bi-Partisan Commission Report (Jackson Report) for Central America, which was prepared in 1984.

The 1987 Report set forth in some detail the status of water supply and sanitation coverage in Belize, Guatemala, Honduras, El Salvador, Costa Rica, and Panama as of year-end 1986. The CAI coverage objectives were likewise defined and set forth for each of the countries. The report then analyzed the coverage and funding required to meet the objectives. As information on Nicaragua was generally unavailable, no funding analysis was performed for that country.

1.2 Definitions

This update of the 1987 Report seeks to make the study current through the end of 1988. The organizational and definitional framework are similar to those of the original report, and, with a few exceptions, the update makes no effort to redefine concepts previously explained. People living in population centers of 2,000 or more are defined as being urban; all others are rural. Urban water supply coverage includes persons with a standpipe or fountain source within 200 meters of the home. Rural water supply coverage includes those with a source close enough to the home that family members do not spend a disproportionate amount of time fetching water.

The LAC Bureau set the CAI objectives by increasing the number of persons reported as served in 1984 (according to the definitions in the previous paragraph) by 25 percent. The new numbers became the CAI coverage objectives for 1989. This update assesses the prospects of meeting these objectives by reviewing all ongoing investment programs and estimating the levels of effort necessary to meet the objectives for each country.

As with the original report, Chapter 2 discusses the water and sanitation data, and Chapter 3 presents a summary discussion of conclusions. The appendices give a water and sanitation profile update for each of the Central American countries, including Panama and Nicaragua.

1.3

Methodology

Like the original document, this update is a desk-top study based on data that could be readily assembled from information cabled from the respective countries and collected from institutions in the greater Washington, D.C. area. Each USAID mission in Central America was asked to send the latest data on country water and sanitation coverage and current programs and funding. The UNICEF office in Guatemala provided information on all its water and sanitation programs in the region. CARE in New York, and the World Bank, the Inter-American Development Bank (IDB), and other organizations in Washington, D.C. and elsewhere were contacted for information. Based on the data obtained, the tables and figures in the original report were updated and the present report compiled and written.

Chapter 2

WATER SUPPLY AND SANITATION UPDATE IN CENTRAL AMERICA

2.1 Introduction

Population and coverage data up to the end of 1988 were estimated from two basic sources: cabled information from the missions and published reports from the UNDP/World Bank Regional Conference on Water and Sanitation held in Recife, Brazil, in September 1988. In some cases the data obtained were inconsistent with information previously reported, and it was necessary to use judgment and make slight adjustments in the numbers. In the case of Honduras, a national census--reportedly the first since 1974--has just been completed. The new numbers show that population estimates given in the 1987 Report were somewhat high. Accordingly, the best current estimate of population and water and sanitation coverage in the Central American countries, year-end 1988, appears in Tables 1 and 2.

2.2 Population and Coverage Trends 1986-1988

The total 1988 population figures for the six countries (excluding Nicaragua) of the region show 757,000 more persons than in the 1987 Report. During this period, the number served by adequate water facilities increased by some 860,000, and an additional 1,232,000 were served by adequate sanitation. In other words, on the average the increase in the number of persons with adequate water and sewage facilities appears to have been slightly greater than the increase in population.

In terms of coverage (the percentage of the whole population adequately served), both the rural and urban sectors showed small increases, with overall sanitation coverage increasing from 55 percent to 58 percent. In water supply, overall coverage rose slightly, from 57 percent to 59 percent. Urban water supply coverage rose from 81 percent to 86 percent, whereas rural water coverage fell from 40 percent to 39 percent.

Countries varied considerably. Urban water supply coverage fell in both Belize and Guatemala, but increased in El Salvador. Although coverage appears to have greatly increased in Honduras, the magnitude of the percentage increase is really due to overestimating the population in 1986. Rural water supply coverage, on the other hand, fell dramatically in El Salvador but increased in Belize. Both urban and rural sanitation increased in most countries, but urban sanitation increased greatly in Panama.

Because of the short time frame between 1986 and 1988 and the approximate nature of the data, it would be unjustified to make too much of small percentage shifts. With the rapidly increasing population, long-term increases in coverage percentages will take time to become manifest, even with aggressive construction programs. El Salvador's dramatic fall in rural coverage is easily understood, given the civil strife in that country. Apparent coverage changes in other

TABLE - 1

EXISTING WATER SUPPLY
 COVERAGE IN CENTRAL AMERICA
 1988

WATER SUPPLY									
	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	% SERVED	URBAN POP.	TOTAL SERVED	% SERVED	RURAL POP.	TOTAL SERVED	% SERVED
BELIZE	174	125	72 %	89	80	90 %	85	45	53 %
GUATEMALA	8,800	3,880	44 %	3,600	2,450	68 %	5,200	1,430	28 %
HONDURAS	4,377	3,054	70 %	1,669	1,619	97 %	2,708	1,435	53 %
EL SALVADOR	4,934	2,236	45 %	2,072	1,864	90 %	2,862	372	13 %
COSTA RICA	2,790	2,572	92 %	1,490	1,490	100 %	1,300	1,082	83 %
PANAMA	2,305	1,981	86 %	1,230	1,220	99 %	1,075	761	71 %
TOTAL:	23,380	13,848	59 %	10,150	8,723	86 %	13,230	5,125	39 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE - 2

**EXISTING SANITATION
COVERAGE IN CENTRAL AMERICA
1988**

SANITATION									
	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
BELIZE	174	145	83 %	89	80	90 %	85	65	76 %
GUATEMALA	8,800	3,000	34 %	3,600	1,450	40 %	5,200	1,550	30 %
HONDURAS	4,377	3,068	70 %	1,669	1,552	93 %	2,708	1,516	56 %
EL SALVADOR	4,934	2,911	59 %	2,072	1,927	93 %	2,862	984	34 %
COSTA RICA	2,790	2,678	96 %	1,490	1,475	99 %	1,300	1,203	93 %
PANAMA	2,305	1,856	81 %	1,230	1,071	87 %	1,075	785	73 %
TOTAL:	23,380	13,658	58 %	10,150	7,555	74 %	13,230	6,103	46 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

countries--except Honduras--are more difficult to explain and may in some instances be due to nothing more than the short time frame and the approximate nature of the data. What can be said by way of summary is that, due to ongoing programs to increase coverage in each of the countries, the number of people served is increasing at a rate slightly greater than the overall regional population increase.

2.3 The CAI Objective Targets

Tables 3 and 4 show the water and sanitation coverage objectives as they were developed from the baseline year of 1984. In essence, the 1989 objectives were set by increasing the 1984 coverage figures by 25 percent. Hence the 1989 CAI objectives, in terms of the number of people to be served, are the same as shown in Tables 3 and 4 in the original document. The actual populations projected for 1989, however, have changed slightly, and therefore the coverage percentages associated with the 1989 objectives are slightly different than reported in 1987.

2.4 Current Funding Commitments

Table 5 shows current funding commitments by country for both urban and rural sectors. The amounts shown reflect only investments to increase coverage and include only funds that are considered firmly committed. Some programs include large sums of money earmarked for water and sanitation, but because much of the money is intended for rehabilitation and upgrading, those sums will not directly expand coverage. In these cases, judgment has been exercised to determine approximately what portion of the investments will actually contribute to coverage. In the case of large projects intended primarily to rehabilitate or upgrade municipal systems, only 10 percent of the funds have been considered applicable to coverage expansion. This rule was applied specifically to both bank and local counterpart funding of the large municipal World Bank and Inter-American Bank programs shown below:

Program	Total Program	To Increase Coverage
IBRD/Guatemala City	\$ 30,000,000	\$ 3,000,000
IBRD/San Pedro Sula	41,500,000	4,150,000
IDB/Tegucigalpa	60,000,000	6,000,000
IDB/Honduras/Four Cities	30,000,000	3,000,000
IDB/San Salvador	184,500,000	18,450,000

Likewise, monies committed to water and sanitation by the RHUDO/CABEI Regional Shelter and Urban Infrastructure Program will only partially expand coverage. Approximately \$15 million is earmarked for water and sanitation work in Costa Rica, for example, but the entire amount is considered to be for upgrading and rehabilitation. The RHUDO/CABEI funds shown below, although not yet detailed

TABLE - 3

WATER SUPPLY COVERAGE:
1984 BASELINE VS. 1989 CAI OBJECTIVE

		WATER SUPPLY								
YEAR	TOTAL POP-ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS			
		POP. SERVED	% SERVED	URBAN POP.	TOTAL SERVED	% SERVED	RURAL POP.	TOTAL SERVED	% SERVED	
BELIZE	1984:	156	98	63 %	78	71	91 %	78	27	35 %
	1989:	179	123	69 %	92	89	97 %	87	34	39 %
GUATEMALA	1984:	7,800	3,500	45 %	3,100	2,300	74 %	4,700	1,200	26 %
	1989:	9,100	4,400	48 %	3,800	2,900	76 %	5,300	1,500	28 %
HONDURAS	1984:	4,299	2,726	63 %	1,700	1,405	83 %	2,599	1,321	51 %
	1989:	4,500	3,407	76 %	1,760	1,756	100 %	2,740	1,651	60 %
EL SALVADOR	1984:	4,700	2,261	48 %	1,980	1,445	73 %	2,720	816	30 %
	1989:	5,100	2,826	55 %	2,150	1,806	84 %	2,950	1,020	35 %
COSTA RICA	1984:	2,405	2,154	90 %	1,070	1,059	99 %	1,335	1,095	82 %
	1989:	2,850	2,640	93 %	1,534	1,324	86 %	1,316	1,316	100 %
PANAMA	1984:	2,157	1,643	76 %	1,127	1,116	99 %	1,030	527	51 %
	1989:	2,393	1,963	82 %	1,305	1,305	100 %	1,088	658	60 %
TOTAL:	1984:	21,517	12,382	58 %	9,055	7,396	82 %	12,462	4,986	40 %
	1989:	24,122	15,359	64 %	10,641	9,180	86 %	13,481	6,179	46 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE - 4

SANITATION COVERAGE:
1984 BASELINE VS. 1989 CAI OBJECTIVE

		SANITATION								
YEAR	TOTAL POPULATION	ALL AREAS		URBAN AREAS			RURAL AREAS			
		POP. SERVED	% SERVED	URBAN POP.	TOTAL SERVED	% SERVED	RURAL POP.	TOTAL SERVED	% SERVED	
BELIZE	1984:	156	97	62 %	78	48	62 %	78	49	63 %
	1989:	179	122	68 %	92	60	65 %	87	62	71 %
GUATEMALA	1984:	7,800	2,600	33 %	3,100	1,300	42 %	4,700	1,300	28 %
	1989:	9,100	3,250	36 %	3,800	1,625	43 %	5,300	1,625	31 %
HONDURAS	1984:	4,299	2,560	60 %	1,700	1,349	79 %	2,599	1,211	47 %
	1989:	4,500	3,200	71 %	1,760	1,686	96 %	2,740	1,514	55 %
EL SALVADOR	1984:	4,700	2,355	50 %	1,980	1,485	75 %	2,720	870	32 %
	1989:	5,100	2,944	58 %	2,150	1,856	86 %	2,950	1,088	37 %
COSTA RICA	1984:	2,405	2,319	96 %	1,070	1,059	99 %	1,335	1,260	94 %
	1989:	2,850	2,640	93 %	1,534	1,324	86 %	1,316	1,316	100 %
PANAMA	1984:	2,157	1,367	63 %	1,127	687	61 %	1,030	680	66 %
	1989:	2,393	1,709	71 %	1,305	859	66 %	1,088	850	78 %
TOTAL:	1984:	21,517	11,298	53 %	9,055	5,928	65 %	12,462	5,370	43 %
	1989:	24,122	13,865	57 %	10,641	7,410	70 %	13,481	6,455	48 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE - 5

COMMITTED FUNDING TO INCREASE COVERAGE
 (1988 ON)
 (COSTS IN THOUSANDS)

COUNTRY	TOTAL	WATER SUPPLY		SANITATION	
		URBAN	RURAL	URBAN	RURAL
BELIZE	\$1,197	\$0	\$718	\$0	\$479
GUATEMALA	\$21,828	\$7,900	\$12,635	\$0	\$1,293
HONDURAS	\$91,863	\$19,655	\$45,066	\$12,400	\$14,742
EL SALVADOR	\$94,730	\$19,360	\$64,640	\$390	\$10,340
COSTA RICA	\$10,937	\$5,300	\$5,637	\$0	\$0
PANAMA	\$0	\$0	\$0	\$0	\$0
TOTAL	\$220,555	\$52,215	\$128,696	\$12,790	\$26,854

to specific projects, are now considered firmly committed to increase water and sanitation coverage in Central America.

Guatemala	\$ 4,900,000	Urban water
Honduras	10,000,000	Urban sanitation
Total:	\$14,900,000	Urban

The amounts shown in Table 5 are broken down by country and by rural and urban sector. Following is the breakdown by donor:

IDB	\$ 74,352,000
AID	84,415,000
RHUDO/CABEI	14,900,000
IBRD	4,160,000
UNICEF	3,731,000
CARE	1,158,000
CDC	1,100,000
FGR	400,000
France	50,000
Norway	30,000
Other external	2,484,000
National counterpart	33,775,000
Total	\$220,555,000

The previous figures show the relative importance of A.I.D. in programs that directly increase coverage. These are the smaller programs in rural and peri-urban areas where A.I.D. has a relative or comparative advantage. This, in a sense, is A.I.D.'s niche. The previous figures do not show the relative importance of the World Bank and IDB, which have much larger sums committed to rehabilitating and upgrading the large municipal systems. These large programs provide for the sustainability and long-term continuance of systems that serve major population centers and indirectly make it possible to expand and increase coverage in them.

2.5 Funding Needed to Meet the CAI Objective

Table 6 shows the additional coverage needed to meet the 1989 CAI objective. The figures are obtained by subtracting existing coverage for each country, as of the end of 1988 (Tables 1 and 2), from the CAI objective figures (Tables 3 and 4). For the region, water supply coverage needs to be extended to 1,849,000 more people, and sanitation coverage to 666,000 more.

TABLE - 6

**INCREASE FROM 1988 WATER SUPPLY
AND SANITATION COVERAGE NEEDED
TO MEET 1989 CAI OBJECTIVE**

	WATER SUPPLY			SANITATION		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
BELIZE	9	9	NONE	NONE	NONE	NONE
GUATEMALA	520	450	70	250	175	75
HONDURAS	353	137	216	134	134	NONE
EL SALVADOR	648	NONE	648	104	NONE	104
COSTA RICA	234	NONE	234	113	NONE	113
PANAMA	85	85	NONE	65	NONE	65
TOTAL	1,849	681	1,168	666	309	357

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

To convert additional coverage needed (new people served) to funding necessary to meet the CAI objectives, the figures in Table 6 are multiplied by the respective unit cost per person for water and sanitation for each country. The unit cost figures, originally obtained from PAHO, are increased by 10 percent from those used in the 1987 Report to allow for the dollar increase in the cost of facilities. The resulting funding needed to meet the 1989 CAI objectives is shown in Table 7.

Also shown in Table 7 is the committed funding transferred from Table 6. The difference between the funding needed and the funding committed is the shortfall or additional funds needed beyond those now considered to be firmly committed. These numbers are also shown in Table 8. For the region as a whole, some \$88,874,000 is needed to meet the CAI 1989 objectives over and above the funding now actually committed. The corresponding figures for water and sanitation are \$53,084,000 and \$35,790,000, respectively. Table 9 shows the annual amounts of new funding, above that already committed, that will be needed between 1989 and 1992, inclusive, if the CAI objectives are to be met by 1992.

TABLE - 7

**ESTIMATED FUNDING NEEDED
TO MEET 1989 CAJ OBJECTIVES - BY TYPE OF SERVICE
(COSTS IN THOUSANDS)**

	WATER SUPPLY			SANITATION			TOTAL
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	
BELIZE COST TO MEET CAJ*	1,287	1,287	0	0	0	0	1,287
COMMITTED FUNDING	718	0	718	479	0	479	1,197
FUNDS NEEDED	1,287	1,287	0	0	0	0	1,287
GUATEMALA COST TO MEET CAJ*	42,850	34,850	7,700	18,375	15,400	875	58,725
COMMITTED FUNDING	20,535	7,800	12,635	1,293	0	1,293	21,828
FUNDS NEEDED	26,750	26,750	0	15,400	15,400	0	42,150
HONDURAS COST TO MEET CAJ*	28,888	12,056	16,632	28,408	28,408	0	57,086
COMMITTED FUNDING	84,721	18,855	45,066	27,142	12,400	14,742	81,863
FUNDS NEEDED	0	0	0	16,008	16,008	0	16,008
EL SALVADOR COST TO MEET CAJ*	56,376	0	56,376	1,456	0	1,456	57,832
COMMITTED FUNDING	84,000	19,360	84,640	10,730	390	10,340	94,730
FUNDS NEEDED	0	0	0	0	0	0	0
COSTA RICA COST TO MEET CAJ*	18,854	0	18,854	3,277	0	3,277	22,231
COMMITTED FUNDING	10,837	5,300	5,837	0	0	0	10,837
FUNDS NEEDED	13,317	0	13,317	3,277	0	3,277	16,594
PANAMA COST TO MEET CAJ*	11,730	11,730	0	1,105	0	1,105	12,835
COMMITTED FUNDING	0	0	0	0	0	0	0
FUNDS NEEDED	11,730	11,730	0	1,105	0	1,105	12,835
TOTAL COST TO MEET CAJ*	158,385	58,723	90,662	80,821	43,808	6,813	210,006
COMMITTED FUNDING**	108,301	19,856	86,345	14,831	12,400	2,431	121,132
FUNDS NEEDED	53,084	39,767	13,317	35,790	31,408	4,382	88,874

* FROM THE 1988 BASE LEVEL OF COVERAGE

**TOTAL COMMITTED FUNDING REFLECTS THE AMOUNT NEEDED FOR THE REGION AND DOES NOT INCLUDE THE EXCESS AMOUNT FROM ANY INDIVIDUAL COUNTRY.

TABLE - 8

**ESTIMATED FUNDING NEEDED
TO MEET 1989 CAI OBJECTIVES
- BY URBAN AND RURAL AREAS*
(COSTS IN THOUSANDS)**

COUNTRY	URBAN WATER SUPPLY AND SANITATION	RURAL WATER SUPPLY AND SANITATION	TOTAL
BELIZE	\$1,287	\$0	\$1,287
GUATEMALA	\$42,150	\$0	\$42,150
HONDURAS	\$16,008	\$0	\$16,008
EL SALVADOR	\$0	\$0	\$0
COSTA RICA	\$0	\$16,594	\$16,594
PANAMA	\$11,730	\$1,105	\$12,835
TOTAL	\$71,175	\$17,699	\$88,874

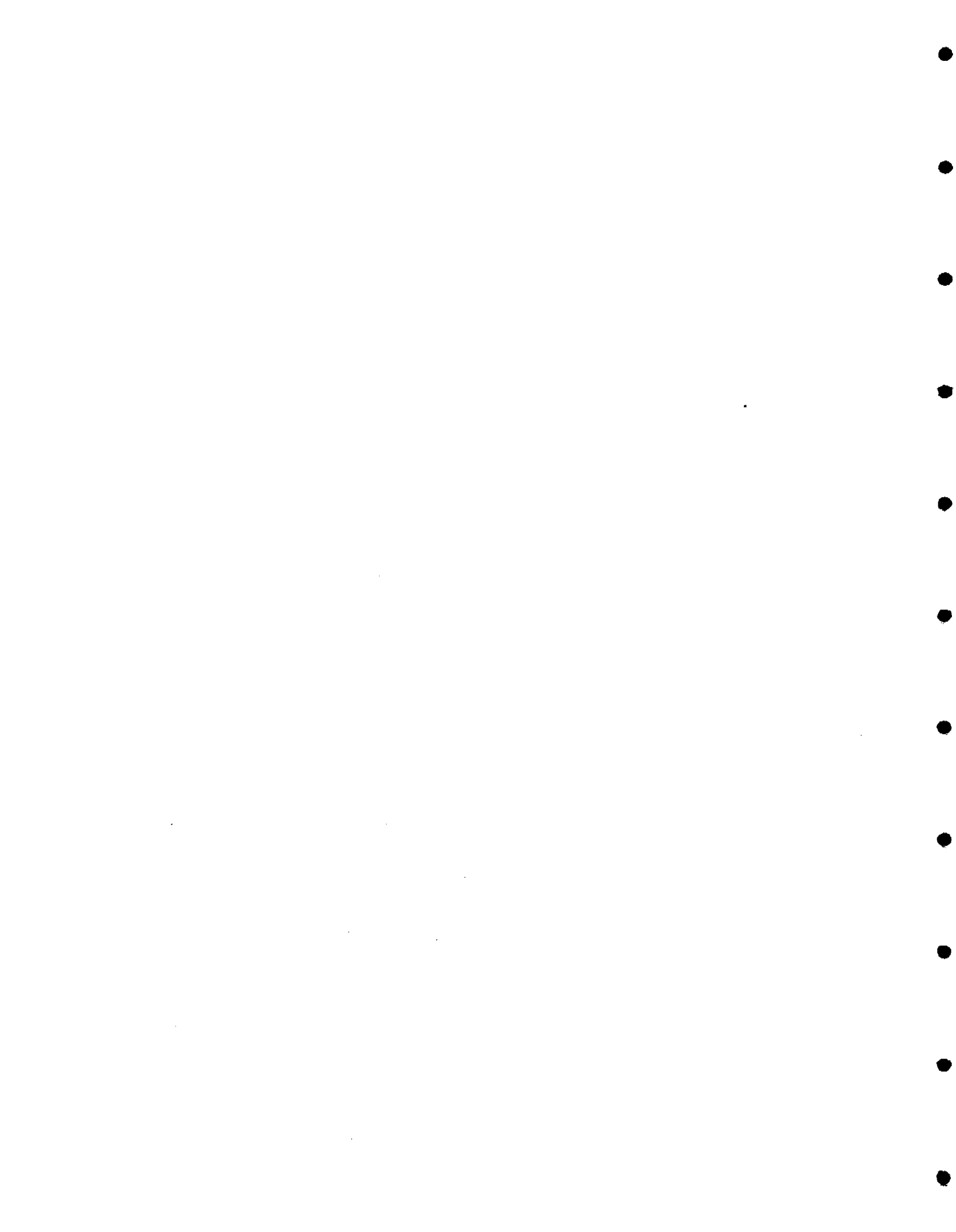
* SEE TABLE 7 FOR BREAKDOWN OF COSTS TO MEET CAI, COMMITTED FUNDING AND FUNDS NEEDED.

TABLE - 9

**ANNUAL COSTS
TO FUND SHORTFALLS AND MEET CAI TARGETS BY 1992
(IN \$1988 - THOUSANDS)**

	URBAN AREAS		RURAL AREAS		TOTAL
	WATER SUPPLY	SANI-TATION	WATER SUPPLY	SANI-TATION	
BELIZE	\$322	\$0	\$0	\$0	\$322
GUATEMALA	\$6,687	\$3,850	\$0	\$0	\$10,537
HONDURAS	\$0	\$4,002	\$0	\$0	\$4,002
EL SALVADOR	\$0	\$0	\$0	\$0	\$0
COSTA RICA	\$0	\$0	\$3,329	\$819	\$4,149
PANAMA	\$2,933	\$0	\$0	\$276	\$3,209
TOTAL:	\$9,942	\$7,852	\$3,329	\$1,096	\$22,218

NOTE: Determination of annual costs is based on dividing total funding needed by four (for FY1989 through 1992).



Chapter 3

CONCLUSIONS

3.1 Introduction

Chapter 2 presents the current status of water and sanitation in Central America vis-a-vis the CAI objectives. The objectives, of course, cannot all be met by 1989. Still, progress has been made in the last two years. The table below shows the number of Central American countries (excluding Nicaragua) that met the CAI objectives for each sector in 1986 and 1988 and that are projected to meet them by 1989. The goal, of course, is to reach the CAI objective (target) in all four sectors in each of six countries.

Sector	1986	1988	1989*	Target
Urban water supply	0	2	2	6
Rural water supply	0	2	3	6
Urban sanitation	1	4	4	6
Rural sanitation	1	2	3	6
Total	2	10	12	24

*Estimate

3.2 Country Summary

3.2.1 Belize

In Belize, the 1989 CAI objectives have now been met for all sectors except urban water. It is estimated that \$1,287,000 will be needed to meet the 1989 urban water objective, but since no funds are now committed it cannot be said when the objective will be met. At present, 90 percent coverage exists for urban water. It is worth noting that although the rural water CAI objective has been met, coverage is still quite low in this sector: 65 percent for sanitation and 45 percent for water.

3.2.2 Guatemala

Although Guatemala has met none of the 1989 objectives, it has ongoing programs in both urban and rural sectors and continues to make progress. With funding now sufficient to meet CAI water and sanitation objectives in the rural sector, Guatemala may barely meet these objectives by 1989. In spite of the new World Bank programs for Guatemala City, funding is still insufficient for urban water, and there is little likelihood that the CAI objective will be met even by 1992.

Funding is also insufficient for urban sanitation, and this objective likewise will not be met, even by 1992.

3.2.3 Honduras

In both rural and urban water supply, funding is now sufficient to meet the CAI objectives, but progress is still too slow to meet them by 1989. More likely the objectives will be met by 1991 or 1992. Funding is insufficient for the urban sanitation objective and the 1989 objective will probably remain unmet until 1992. Honduras has just now met the CAI objective for rural sanitation.

3.2.4 El Salvador

In both urban water and sanitation El Salvador has met and surpassed the 1989 CAI objectives. In the rural sector, on the other hand, coverage is low and continuing to fall. There is a real need for rural programs in both water and sanitation. Although sufficient funding amounts have now been committed for the rural sector, time is needed to translate these commitments into physical works. Neither in water nor in sanitation is there any prospect that the CAI objectives can be met, even by 1992.

3.2.5 Costa Rica

Costa Rica likewise has met and exceeded the CAI objectives for the urban sector. For the rural sector, the most recent coverage figures reported by the mission are lower than those reported in the 1987 Report. Few external funds are committed for the rural sector, and it is unlikely that the CAI objectives will be met by 1989, or even 1992. Even though the CAI rural objectives will not be reached, coverage in the rural sector is still high: 83 percent for water and 93 percent for sanitation.

3.2.6 Panama

Panama has now met the CAI objectives for urban sanitation and rural water. Because of the current political situation, however, external funding has all but ceased and it is unlikely that the CAI objectives in the other two sectors will be met until after 1992.

3.2.7 Summary Matrix

The following matrix summarizes the country-by-country discussion, showing the estimated year in which various sectors will meet the CAI objectives.

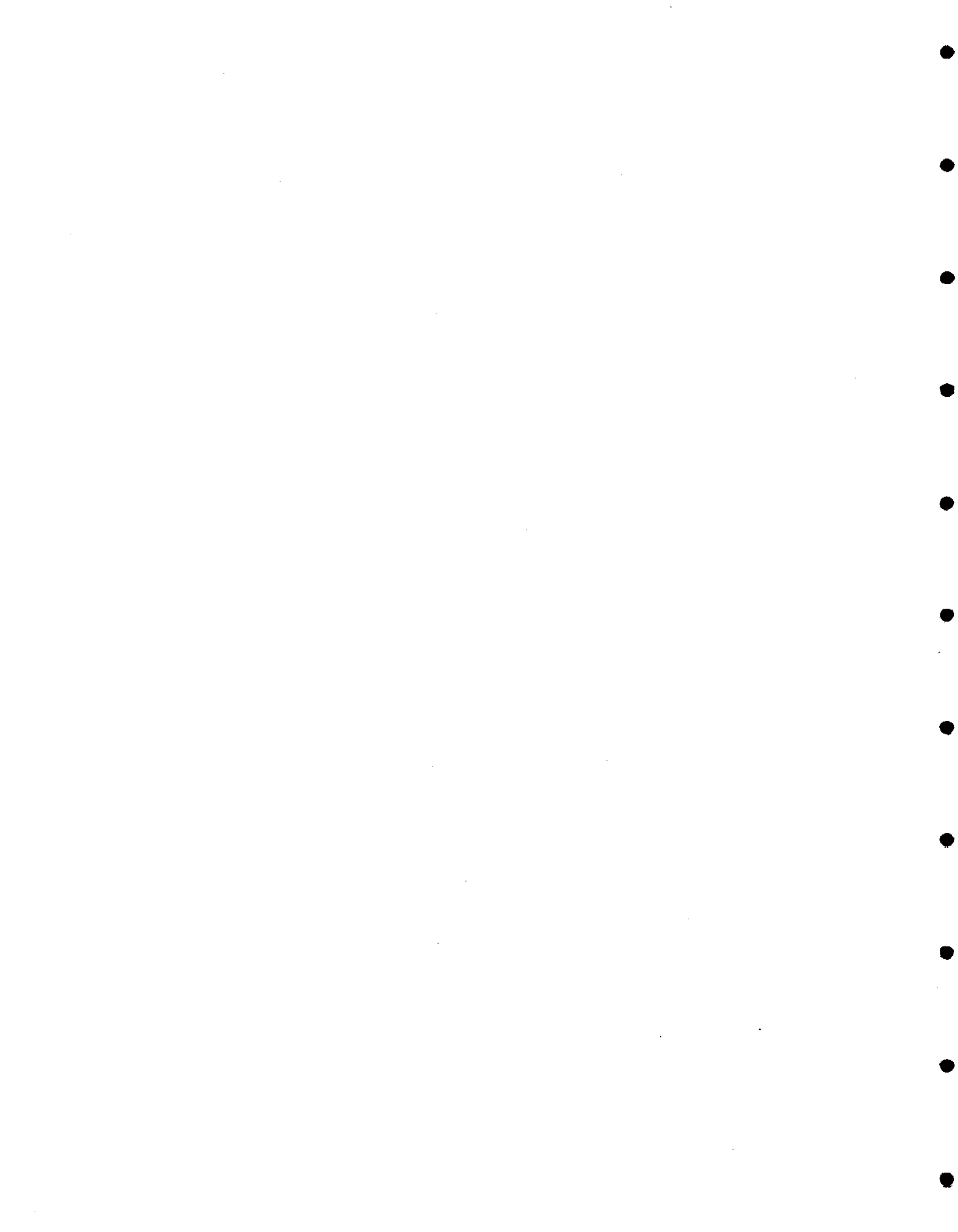
	URBAN		RURAL	
	Water (yr)	Sanitation (yr)	Water (yr)	Sanitation (yr)
Belize	post-1992	met	met	met
Guatemala	post-1992	post-1992	1989	1989
Honduras	1990	post-1992	1991	met
El Salvador	met	met	post-1992	post-1992
Costa Rica	met	met	post-1992	post-1992
Panama	post-1992	met	met	post-1992

3.3 Meeting the CAI Objectives and Beyond

The table in Section 3.1 shows that of the six Central American countries with four sectors each (urban and rural water and sanitation), in only 12 out of 24, or 50 percent, of the sectors will the CAI objectives be met by 1989. In part the problem is lack of funds, in part the institutional incapacity to use them. With respect to insufficient funds, the problem also has two aspects: the total funds committed and where they are committed. Table 5 shows that the amount committed to increase coverage within the region is approximately \$220,555,000. This is only slightly more than the \$210,006,000 needed to meet the CAI objectives. Much of the money committed, however, is destined for sectors that have already met the CAI objective, so that only \$121,132,000 is actually firmly committed to meeting the sectoral deficiencies of the 1989 objectives. In any event, the \$210,006,000 needed far exceeds institutional capacity to absorb the funds before the end of 1989. In other words, with only one year left, the objectives cannot be met even with adequate funding.

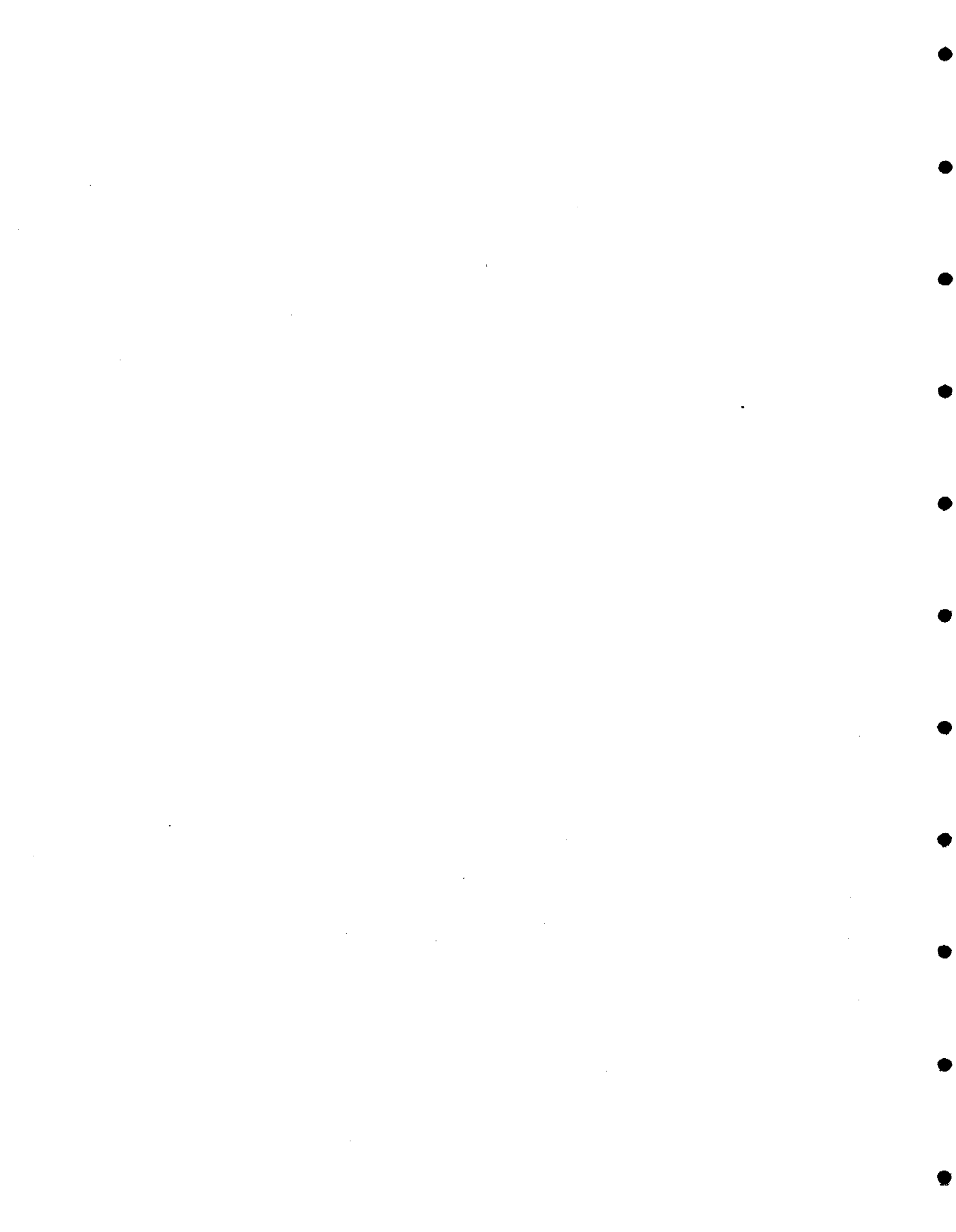
The rural water sector of El Salvador clearly has the greatest need. Although A.I.D. has apparently now committed large amounts and rural funding is sufficient, the challenge to convert money into coverage remains formidable. Guatemala and Honduras, too, have major deficiencies in terms of the CAI objectives. The situation is most critical in Guatemala, where funding is still lacking for urban water and sanitation. Funding levels are higher in Honduras, but urban sanitation still has a major deficit. Costa Rica has a major funding deficit for rural water supply.

Looking beyond the 1989 objectives, it is apparent (through comparing Tables 1 and 2 with those of the original report) that progress in meeting water and sanitation needs requires a greater impetus. Given the population increases, even meeting the 1989 objectives improves coverage percentages only slightly. And since only 50 percent of the sectoral objectives will be met by 1989, the situation is actually worse. Both water and sanitation gains are slight in comparison to population gains. If coverage increases and sustainability are important goals, there must be a long-term and steady presence of external assistance to the countries of the region.



APPENDIX A

COUNTRY PROFILE: BELIZE



APPENDIX A

COUNTRY PROFILE: BELIZE

INTRODUCTION

In the 1987 report, four active programs were listed in Belize. Since the time of that report, one program, the Canadian-financed project for Belize City water and sewerage improvements, has been completed. Two others will be completed early in 1989, and only one will have continuing status through the next several years. Since no new projects have begun recently, Belize will have only the one active water and sanitation project--the Village Level Water and Sanitation Project sponsored by USAID, CARE, and other donors--for the next several years.

CURRENT PROJECTS

UNICEF/Toledo District

The UNICEF rural water and sanitation project, begun in Toledo District (1985), was extended beyond its expected 1987 completion date and should be completed in March 1989. This project has installed handpumps and latrines in some 20 villages. Total UNICEF funding for the four-year period 1985-1989 is \$800,000, with counterpart funding of \$60,000.

Improved Productivity through Better Health

The Improved Productivity through Better Health project was initiated in 1985 and is also scheduled for completion in early 1989. The project has installed handpumps in more than 60 villages, purchased and rehabilitated drilling equipment, and supported health education. Total expected financing for the 1985-1989 period is \$3,947,000 in USAID funds and \$1,500,000 local funding from the Government of Belize.

Village Level Water and Sanitation Project

The CARE-managed Village Level Water and Sanitation Project was initiated in July 1984. Through June 1988, 16 villages in Orange Walk and Corozal districts benefited from water and sanitation improvements. Beginning in July 1988, the project was extended to include an additional 12 villages, with an expected completion date of mid-1991. The program includes rehabilitating existing facilities, installing handpumps and other rudimentary water systems, and constructing latrines. The project expects to benefit approximately 90 percent

of the families in the 12 village, for a total of 10,800 people. Budget figures for the three-year project are as follows:

	1989	1990	1991	Total
AID	\$200,000	\$175,000	\$125,000	\$500,000
CARE	50,000	50,000	50,000	150,000
GOB	21,000	21,000	21,000	63,000
Other Donors	129,000	154,000	201,000	484,000
Total	\$400,000	\$400,000	\$397,000	\$1,197,000

MEETING THE CAI OBJECTIVE

Tables A-1 and A-2 show that, except for urban water, the CAI objectives for Belize have now been met and even exceeded. Even though little is needed to meet the CAI objective for urban water, it is unlikely that the objective will be met in the foreseeable future, since there are no existing projects. Moreover, with population increase greater than had been projected, the percentage of coverage is falling, and will continue to fall, in the urban sector of Belize.

With no new funds committed for urban water, Table A-4 shows that approximately \$1,287,000 are needed to meet the CAI objective for this sector.

**TABLE A - 1
BELIZE**

**HISTORICAL WATER SUPPLY
COVERAGE VERSUS CAI OBJECTIVE**

		WATER SUPPLY								
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS			
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED	
1980	146	99	68 %	73	71	97 %	73	28	38 %	
BASELINE 1984	156	98	63 %	78	71	91 %	78	27	35 %	
1986	162	112	69 %	83	79	95 %	79	33	42 %	
1988	174	125	72 %	89	80	90 %	85	45	53 %	
CAI OBJECTIVE 1989	179	123	69 %	92	89	97 %	87	34	39 %	

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE A - 2
BELIZE
HISTORICAL SANITATION
COVERAGE VERSUS CAI OBJECTIVE

		SANITATION							
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	146	96	66 %	73	43	59 %	73	53	73 %
BASELINE 1984	156	97	62 %	78	48	62 %	78	49	63 %
1986	162	124	77 %	83	69	83 %	79	55	70 %
1988	174	145	83 %	89	80	90 %	85	65	76 %
CAI OBJECTIVE 1989	179	122	68 %	92	60	65 %	87	62	71 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE A - 3
BELIZE**

**PROJECTED SHORTFALLS
IN MEETING CAI OBJECTIVE**

	WATER SUPPLY COVERAGE (PERSONS)			SANITATION COVERAGE (PERSONS)		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
CAI OBJECTIVE 1989	123	89	34	122	60	62
BASELINE 1984	98	71	27	97	48	49
REQUIRED INCREASE	25	18	7	25	12	13
ESTIMATED 1984-86 GAIN	14	8	6	27	21	6
ESTIMATED 1986-88 GAIN	13	1	12	21	11	10
CAI COVERAGE SHORTFALL	9	9	NONE	NONE	NONE	NONE

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE A - 4
BELIZE**

**ESTIMATED COST TO
ACHIEVE CAI OBJECTIVE**

	WATER SUPPLY			SANITATION		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
SHORTFALL IN POPULATION COVERAGE SHOWN IN THOUSANDS	9	9	NONE	NONE	NONE	NONE
ESTIMATED UNIT COST - \$ PER CAPITA	N/A	\$143	\$143	N/A	N/A	\$94
ESTIMATED TOTAL COST (\$ IN THOUSANDS)	\$1,287	\$1,287	NONE	NONE	NONE	NONE

\$1,287,000

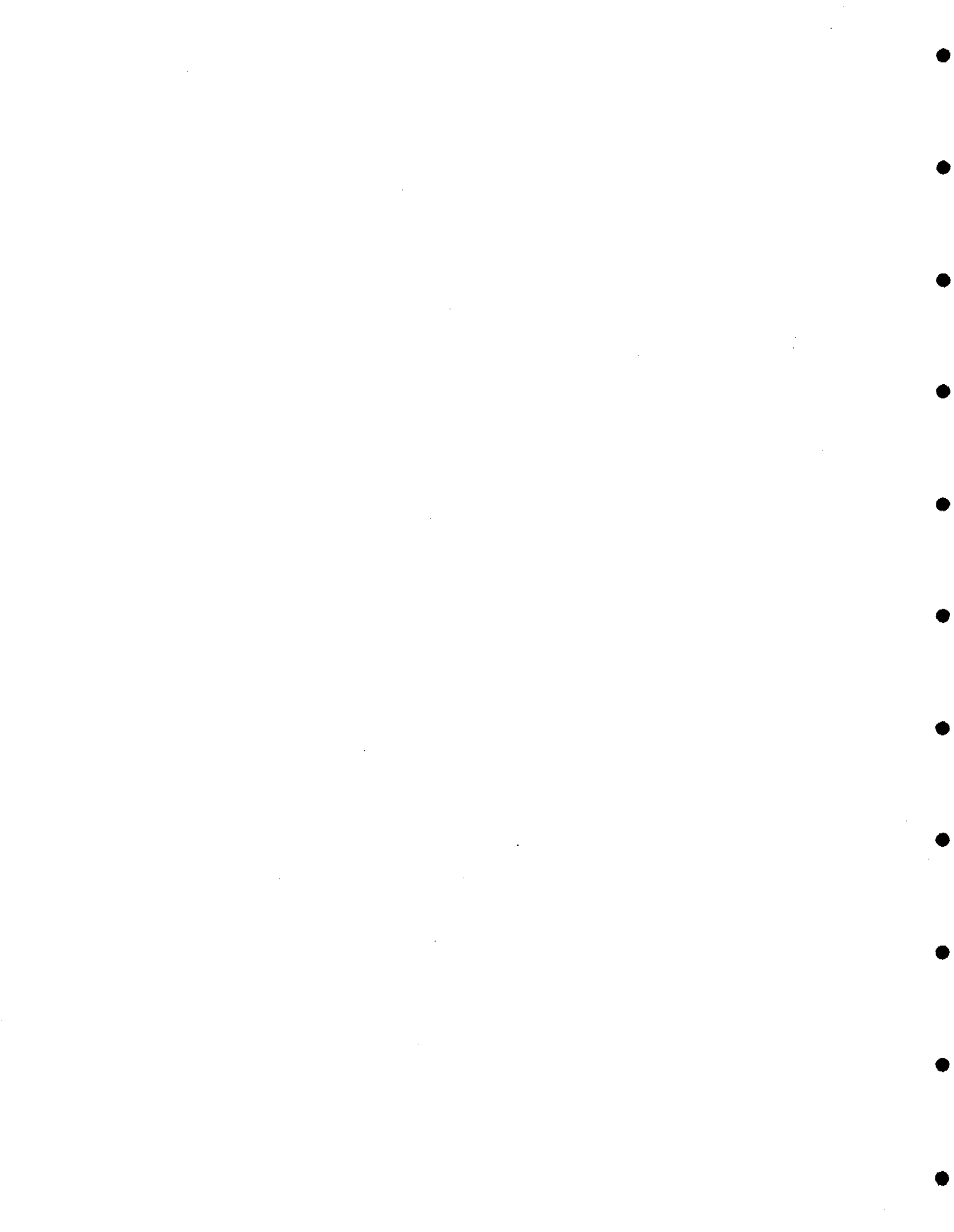
TOTAL ESTIMATED COST:

TABLE A - 5
BELIZE

PROJECTED FUNDING
SHORTFALL TO MEET CAI
(COSTS IN THOUSANDS)

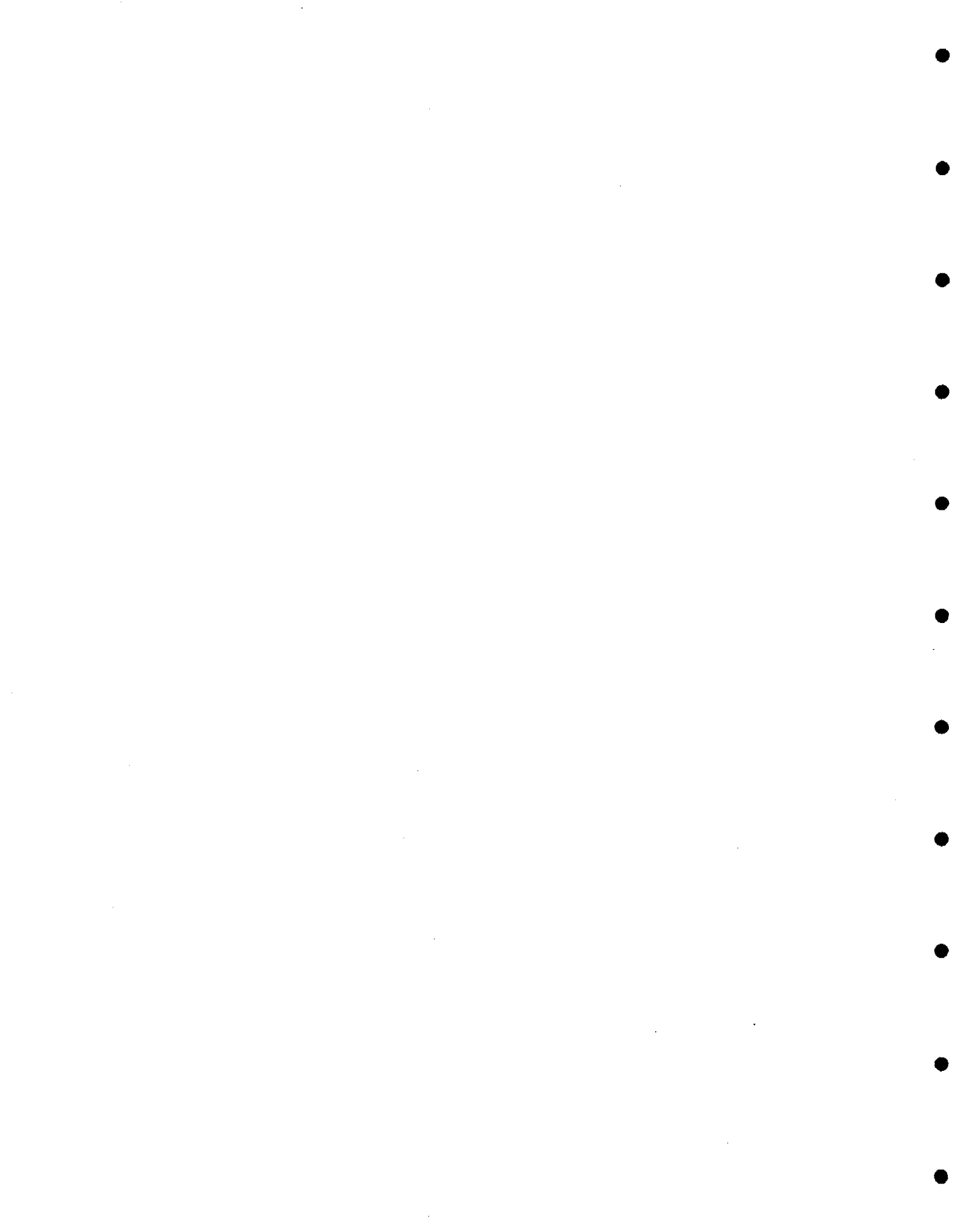
	WATER SUPPLY		SANITATION		UN-SPECIFIED	TOTAL
	URBAN	RURAL	URBAN	RURAL		
ESTIMATED TOTAL COST TO MEET CAI	\$1,287	NONE	NONE	NONE	NONE	\$1,287
FIRMLY COMMITTED INVESTMENTS (1)	NONE	\$718	NONE	\$479	NONE	\$1,197
PROJECTED FUNDING SHORTFALL	\$1,287	NONE	NONE	NONE	NONE	\$1,287

(1) ONLY THOSE INVESTMENTS WHICH INCREASE COVERAGE



APPENDIX B

COUNTRY PROFILE: GUATEMALA



APPENDIX B

COUNTRY PROFILE: GUATEMALA

INTRODUCTION

Guatemala benefits from a number of programs, both urban and rural, supported by various external institutions. Most of these programs were active at the time of the 1987 Report and will continue for the next several years. The Inter-American Development Bank program with INFOM has now completed the construction of water and sewerage works for medium-sized cities and, as part of this program, a water and sewerage master plan for municipal capitals was also completed in 1988. The IDB intends to follow this program with still greater funding levels for medium-sized cities, but planning is still in process and does not figure in the present funding analysis.

An important new source of funding is a World Bank loan for water supply improvements in Guatemala City, approved by the Guatemalan Congress in late 1988. Although it is assumed that approximately 90 percent of this investment will go for rehabilitation, the program should also provide a needed impetus to extending urban-sector coverage. It is also expected that approximately \$4.9 million of the RHUDO/CABEI Regional Shelter and Urban Infrastructure program monies will be spent on works that directly increase urban water coverage.

CURRENT PROGRAMS

UNICEF Small Projects

UNICEF supports several programs in Guatemala. Small rural water supply projects are financed through the Division del Saneamiento del Medio of the Ministry of Health. In addition, UNICEF has a few small projects in the outskirts of Guatemala City. Financing figures follow:

	1989	1990
UNICEF	\$1,029,000	\$575,000
GOG	575,000	(not known)
Total	\$1,604,000	

IDB-UNEPAR Program

For a number of years the Inter-American Development Bank has supported rural water supply projects in Guatemala through UNEPAR, an entity of the Ministry of Health. The current project, begun in 1983 and due to complete in 1989, calls for designing and constructing some 113 new water supply systems in small rural

towns and rehabilitating another 93. Approximately 80 percent of this program was complete by the end of 1988. Total funding for the UNEPAR program is shown below:

1983-1989	
IDB	\$16,800,000
GOG	4,200,000
Total	\$21,000,000

The World Bank/Guatemala City Loan

A new World Bank loan was ratified by the Guatemalan Congress in 1988 to rehabilitate and expand the Guatemala City water supply system. The project will begin in 1989, with a consultancy to EMPAGUA to determine the nature of the work to be done and to complete designs. Construction work will follow. The program investment amounts are:

1989-1995	
IBRD	\$23,000,000
GOG	7,000,000
Total	\$30,000,000

USAID Projects

USAID currently funds water supply and sanitation programs in Guatemala through three different programs. The largest and longest running is the Community Based Integrated Health and Nutrition Project (CBHNP) begun early in the decade. This project, as amended, calls for building piped water supply systems for approximately 400 small rural communities. Latrization is also part of the project, which encompasses six departments of the Guatemalan altiplano. In addition, USAID also supports Agua del Pueblo, a private organization executing rural water supply projects, and contributes to CARE's Water, Women, and Health project. CARE, in turn, executes this project through UNEPAR. The following summarizes USAID's activities in the water and sanitation sector in Guatemala.

	CBHNP	AGUA DEL PUEBLO	CARE/UNEPAR
(1982-1990)			
USAID	\$10,800,000	\$1,400,000	\$1,000,000
GOG	8,100,000	-----	2,000,000
OTHER DONORS	-----	2,000,000	-----
Total	\$18,900,000	\$3,400,000	\$3,000,000

MEETING THE CAI OBJECTIVE

Coverage levels are presented in Tables B-1 and B-2. As shown, the level of activity in the rural sector makes it possible to project that Guatemala will probably just meet the CAI objective for both rural water and sanitation. This is confirmed by the cost figures shown in Tables B-4 and B-5, indicating more than adequate funding to meet the objectives. It is worth noting, however, that even with significant increases due to the number of rural programs in progress, the increase in the number of people benefited lags behind the increase in the rural population. In other words, more and more people in the rural sector continue to be without water and sanitation coverage. The USAID community-based project will be completed in 1990, and there are currently no plans for a follow-on program.

There is no prospect that the CAI objective can be met in the urban sector by 1989, and little prospect that it can be met even by 1992. Committed funds are insufficient, the current activity level is too low, and the new World Bank loan and the RHUDO/CABEI program cannot be expected to significantly impact coverage for several years.

**TABLE B - 1
GUATEMALA**

**HISTORICAL WATER SUPPLY
COVERAGE VERSUS CAI OBJECTIVE**

WATER SUPPLY									
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	7,000	3,200	46 %	2,700	2,400	89 %	4,300	800	19 %
BASELINE 1984	7,800	3,500	45 %	3,100	2,300	74 %	4,700	1,200	26 %
1986	8,300	3,700	45 %	3,400	2,400	71 %	4,900	1,300	27 %
1988	8,800	3,880	44 %	3,600	2,450	68 %	5,200	1,430	28 %
CAI OBJECTIVE 1989	9,100	4,400	48 %	3,800	2,900	76 %	5,300	1,500	28 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE B - 2
GUATEMALA**

**HISTORICAL SANITATION
COVERAGE VERSUS CAI OBJECTIVE**

SANITATION									
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	7,000	2,100	30 %	2,700	1,200	44 %	4,300	900	21 %
BASELINE 1984	7,800	2,600	33 %	3,100	1,300	42 %	4,700	1,300	28 %
1986	8,300	2,800	34 %	3,400	1,400	41 %	4,900	1,400	29 %
1988	8,800	3,000	34 %	3,600	1,450	40 %	5,200	1,550	30 %
CAI OBJECTIVE 1989	9,100	3,250	36 %	3,800	1,625	43 %	5,300	1,625	31 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE B - 3
GUATEMALA**

**PROJECTED SHORTFALLS
IN MEETING CAI OBJECTIVE**

	WATER SUPPLY COVERAGE (PERSONS)			SANITATION COVERAGE (PERSONS)		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
CAI OBJECTIVE 1989	4,400	2,900	1,500	3,250	1,625	1,625
BASELINE 1984	3,500	2,300	1,200	2,600	1,300	1,300
REQUIRED INCREASE	900	600	300	650	325	325
ESTIMATED 1984-86 GAIN	200	100	100	200	100	100
ESTIMATED 1986-88 GAIN	180	50	130	200	50	150
CAI COVERAGE SHORTFALL	520	450	70	250	175	75

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE B - 4
GUATEMALA**

**ESTIMATED COST TO
ACHIEVE CAI OBJECTIVE**

	WATER SUPPLY			SANITATION		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
SHORTFALL IN POP- ULATION COVERAGE SHOWN IN THOUSANDS	520	450	70	250	175	75
ESTIMATED UNIT COST - \$ PER CAPITA	N/A	\$77	\$110	N/A	\$88	\$13
ESTIMATED TOTAL COST (\$ IN THOUSANDS)	\$42,350	\$34,650	\$7,700	\$16,375	\$15,400	\$975

TOTAL ESTIMATED COST: \$58,725,000

**TABLE B - 5
GUATEMALA**

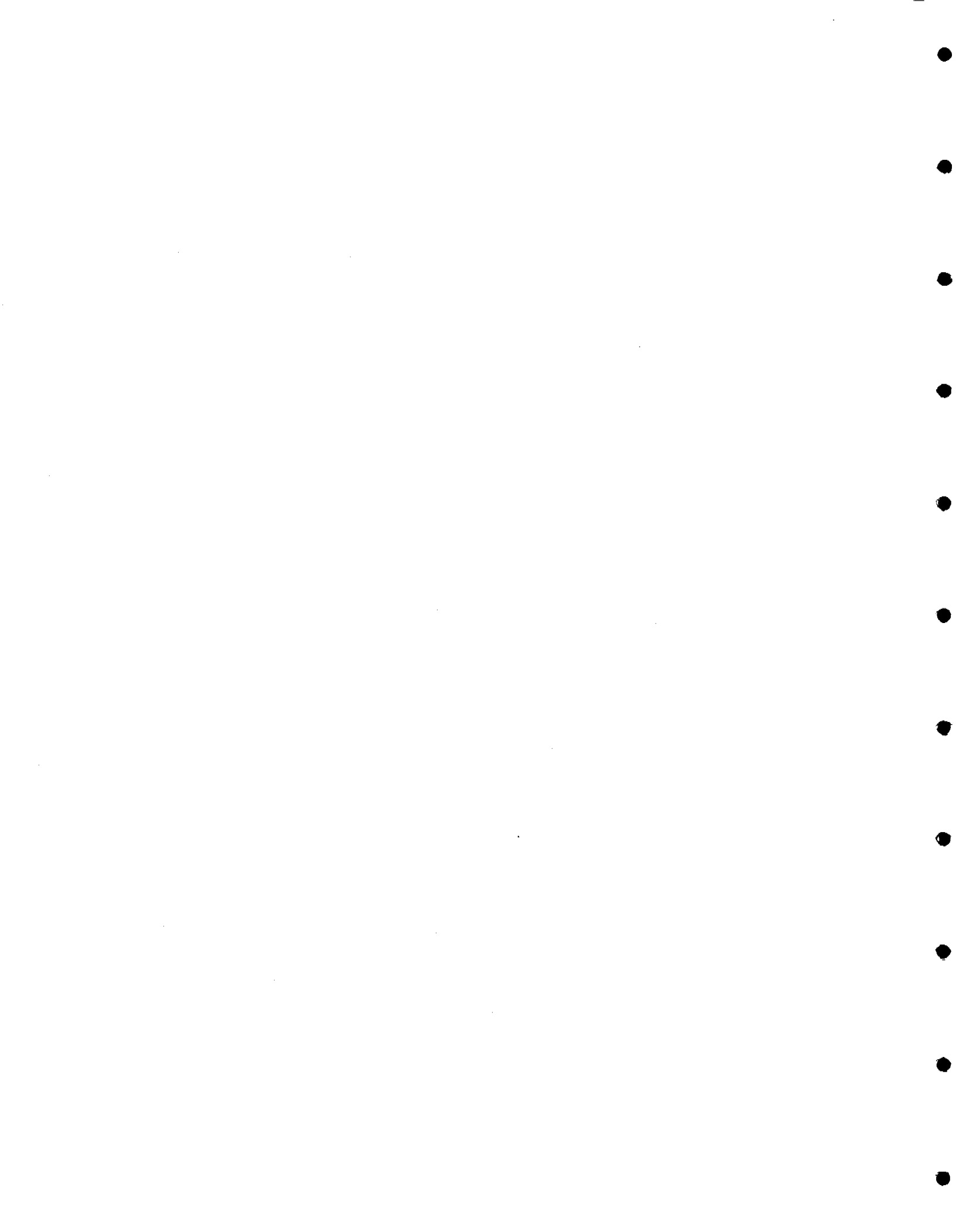
**PROJECTED FUNDING
SHORTFALL TO MEET CAI
(COSTS IN THOUSANDS)**

	WATER SUPPLY		SANITATION		UN-SPECIFIED	TOTAL
	URBAN	RURAL	URBAN	RURAL		
ESTIMATED TOTAL COST TO MEET CAI	\$34,650	\$7,700	\$15,400	\$975	NONE	\$58,725
FIRMLY COMMITTED INVESTMENTS (1)	\$7,900	\$12,635	\$0	\$1,293	NONE	\$21,828
PROJECTED FUNDING SHORTFALL	\$26,750	NONE	\$15,400	NONE	NONE	\$42,150

(1) ONLY THOSE INVESTMENTS WHICH INCREASE COVERAGE

APPENDIX C

COUNTRY PROFILE: HONDURAS



APPENDIX C

COUNTRY PROFILE: HONDURAS

INTRODUCTION

Honduras has a number of active programs in both the rural and urban sectors. Most of these programs have been on the books for several years. Progress in coverage since the 1987 Report, however, has not been great despite the high level of committed resources. Important sources of new funding are an expected \$10.0 million of RHUDO/CABEI Regional Shelter and Urban Infrastructure program monies and \$6 million of bilateral funds that will be targeted for extending urban sanitation coverage in Honduras, beginning in 1990.

The Italian government is funding a large water infrastructure program, including a dam, transmission mains, and storage facilities for Tegucigalpa. The works, however, amount to upgrading and rehabilitation and will not increase coverage. Likewise, the French government is planning to fund a water treatment plant for Tegucigalpa, but it will have no direct effect on coverage.

CURRENT PROGRAMS

USAID

The major USAID program active in Honduras is the water and sanitation component of the Health Sector II project that essentially continues work completed in 1988, under Health Sector I. This is a rural program planned to benefit some 500,000 people with a variety of improvements: gravity-fed water systems, wells with handpumps, and latrines. Disbursements began in late 1988 and are expected to continue through mid-1995.

1988-1995

USAID/HEALTH SECTOR II	\$16,500,000
GOH	14,100,000
Total	\$30,600,000

Also active is a program of local currency employment generation with \$3,200,000 destined for rural and urban sanitation and \$2,200,000 for rural and urban water. The program has been under way for several years and is expected to continue until 1991.

CARE

CARE has only one active rural water and sanitation project in Honduras, called the Integrated Community Water Supply project. Project agreements were signed in 1987, and the ongoing project should be active at least through 1989. Funding is reported as follows:

CARE	\$2,256,000
NON-CARE	350,000
Total	\$2,606,000

CARE's contributions to this project are funded by CIDA and CARE-Canada. Non-CARE funders are CIDA and the Government of Honduras through SANAA.

UNICEF

The UNICEF projects in Honduras respond to needs in the peri-urban areas of Tegucigalpa. These small demonstration projects for alternative water supply sources are intended as interim solutions, until the urban water supply infrastructure can be expanded into the affected areas. Current funding is reported as follows:

	1989	1990
UNICEF	\$664,000	\$391,000
GOH	360,000	Not Known
Total	\$1,024,000	Not Known

IDB Programs

The Inter-American Development Bank currently has three active water supply and sanitation programs in Honduras. The Four Cities project provides for a wide range of water system expansions and improvements for the mid-sized cities of Tela, Zihuatepeque, La Paz-Cane, and Juticalpa. The Tegucigalpa project is an extensive program of rehabilitation, system improvements, and expansion to extend coverage. The third program is a rural project that provides for both new water system construction and latrinization for approximately 250 communities. Although the loan agreements have been signed for several years, first disbursements for these programs were not made until 1988. Completion dates for all three programs are expected to be extended well into the early 1990s. Committed monies for the three programs are summarized below.

	FOUR CITIES	RURAL	TEGUCIGALPA
IDB	\$24,000,000	\$24,000,000	\$54,000,000
GOH	6,000,000	3,000,000	6,000,000
Total	\$30,000,000	\$27,000,000	\$60,000,000

World Bank

The World Bank has a single active program in Honduras, with joint financing from a number of sources. The program aims at rehabilitating and extending the water supply system of San Pedro Sula, the country's second largest city. Besides the Bank, external financing comes from Britain (the CDC), France, and Norway. Within Honduras, both DIMA (the Municipal Water Division of San Pedro Sula) and SANAA contribute to the project. The project began slowly, and to date the bulk of the investments have not yet been made. Nevertheless, the current intent is to complete the project on schedule by the end of 1991. Of the total financing shown below, about one million dollars is for drainage works.

SAN PEDRO SULA (1985-1991)

IBRD	\$19,600,000
CDC	11,000,000
FRANCE	500,000
NORWAY	300,000
DIMA	10,000,000
SANAA	1,100,000
Total	\$42,500,000

MEETING THE CAI OBJECTIVE

The number of active programs in Honduras and the fact that many of them, particularly those underwritten by the larger donors, appeared to be making progress by late 1988 gives reason to believe that substantial progress on water and sanitation coverage will be made over the next several years. Current coverage data is shown in Tables C-1 and C-2. Funding figures are shown in Tables C-4 and C-5. In rural sanitation, the CAI objective has already been achieved. In urban water, with sufficient funds now committed as shown in Table C-4, it is still unlikely the objective will be achieved before 1990.

In both rural water supply and urban sanitation, however, it is doubtful that the 1989 CAI objectives can be met. In the case of rural water supply, the objective is too far off to be met by 1989, even though sufficient funds are committed. More probably the target can be achieved by 1991. In the case of urban sanitation, the target coverage figure is not so far off, but the funds committed to meet the target are insufficient, thereby making realization of the objective unlikely even by 1991.

**TABLE C - 1
HONDURAS**

**HISTORICAL WATER SUPPLY
COVERAGE VERSUS CAI OBJECTIVE**

WATER SUPPLY									
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	3,754	2,226	59 %	1,368	1,272	93 %	2,386	954	40 %
BASELINE 1984	4,299	2,726	63 %	1,700	1,405	83 %	2,599	1,321	51 %
1986	4,581	2,983	65 %	1,884	1,533	81 %	2,697	1,450	54 %
1988	4,377	3,054	70 %	1,669	1,619	97 %	2,708	1,435	53 %
CAI OBJECTIVE 1989	4,500	3,407	76 %	1,760	1,756	100 %	2,740	1,651	60 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

NOTE: Results of 1988 census indicate population estimates for previous years were high.

TABLE C - 2
HONDURAS

HISTORICAL SANITATION
COVERAGE VERSUS CAI OBJECTIVE

YEAR	SANITATION								
	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	3,754	1,290	34 %	1,368	670	49 %	2,386	620	26 %
BASELINE 1984	4,299	2,560	60 %	1,700	1,349	79 %	2,599	1,211	47 %
1986	4,581	2,877	63 %	1,884	1,485	79 %	2,697	1,392	52 %
1988	4,377	3,068	70 %	1,669	1,552	93 %	2,708	1,516	56 %
CAI OBJECTIVE 1989	4,500	3,200	71 %	1,760	1,686	96 %	2,740	1,514	55 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

NOTE: Results of 1988 census indicate population estimates for previous years were high.

**TABLE C - 3
HONDURAS**

**PROJECTED SHORTFALLS
IN MEETING CAI OBJECTIVE**

	WATER SUPPLY COVERAGE (PERSONS)			SANITATION COVERAGE (PERSONS)		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
CAI OBJECTIVE 1989	3,407	1,756	1,651	3,200	1,686	1,514
BASELINE 1984	2,726	1,405	1,321	2,560	1,349	1,211
REQUIRED INCREASE	681	351	330	640	337	303
ESTIMATED 1984-86 GAIN	257	128	129	317	136	181
ESTIMATED 1986-88 GAIN	71	86	-15	191	67	124
CAI COVERAGE SHORTFALL	353	137	216	134	134	NONE

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE C - 4
HONDURAS**

**ESTIMATED COST TO
ACHIEVE CAI OBJECTIVE**

	WATER SUPPLY			SANITATION		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
SHORTFALL IN POPULATION COVERAGE SHOWN IN THOUSANDS	353	137	216	134	134	NONE
ESTIMATED UNIT COST - \$ PER CAPITA	N/A	\$88	\$77	N/A	\$212	\$26
ESTIMATED TOTAL COST (\$ IN THOUSANDS)	\$28,688	\$12,056	\$16,632	\$28,408	\$28,408	NONE

TOTAL ESTIMATED COST: \$57,096,000

**TABLE C - 5
HONDURAS**

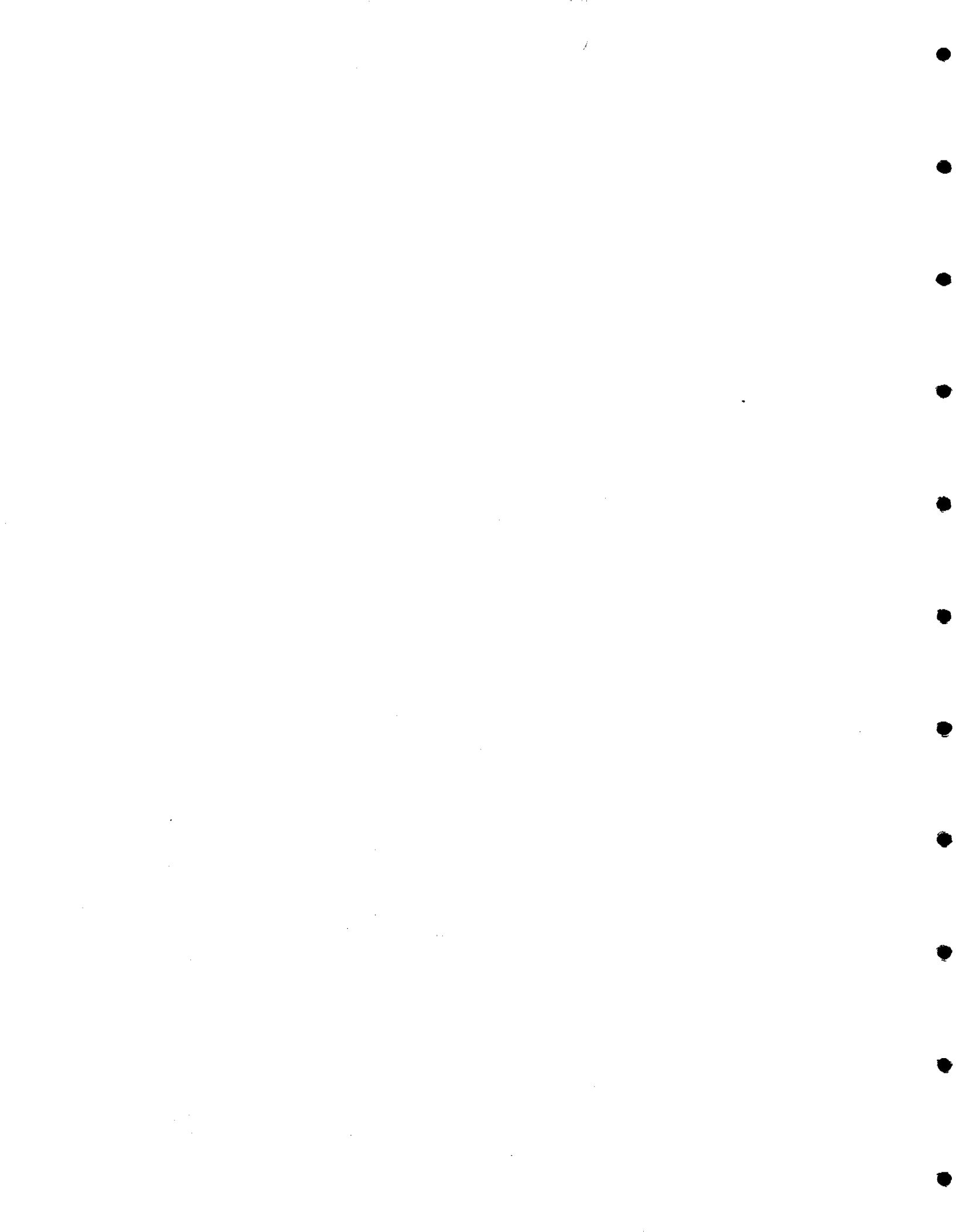
**PROJECTED FUNDING
SHORTFALL TO MEET CAI
(COSTS IN THOUSANDS)**

	WATER SUPPLY		SANITATION		UN-SPECIFIED	TOTAL
	URBAN	RURAL	URBAN	RURAL		
ESTIMATED TOTAL COST TO MEET CAI	\$12,056	\$16,632	\$28,408	NONE	NONE	\$57,096
FIRMLY COMMITTED INVESTMENTS (1)	\$19,655	\$45,066	\$12,400	\$14,742	NONE	\$91,863
PROJECTED FUNDING SHORTFALL	NONE	NONE	\$16,008	NONE	NONE	\$16,008

(1) ONLY THOSE INVESTMENTS WHICH INCREASE COVERAGE

APPENDIX D

COUNTRY PROFILE: EL SALVADOR



APPENDIX D

COUNTRY PROFILE: EL SALVADOR

INTRODUCTION

In the last year, El Salvador gained an important new project, an IDB-financed project for water system improvements in the city of San Salvador. USAID, also in the last year, has made known its firm intent to commit some \$40,000,000 for rural water supply and sanitation beginning in late 1989 and extending for a five-year period.

CURRENT PROGRAMS

USAID

USAID participates in three programs that extend coverage, as well as in studies to assess water and sanitation needs in the country. One is the pilot potable water project implemented by ANDA and funded through local currency generations. Another comes from the water and sanitation components of housing projects and targets slum areas and illegal settlements, also funded through local currency generations. The last one is dollar funded and is part of the Community Based Integrated Rural Development Project No. 519-0300 implemented by Save the Children Federation. Current figures are:

Pilot Potable Water Project	(1987-1989)	\$9,000,000
Save the Children	(1985-1989)	\$1,000,000
Housing Projects	(1988-1993)	\$1,300,000

UNICEF

UNICEF has a number of small drilling projects in the coastal areas. The government contribution is not known. For the next three years, UNICEF's contributions will be \$340,000 (1989); \$240,000 (1990); and \$180,000 (1991).

German Government

The German Government is currently funding the design of small water supply systems in rural towns for the amount of \$400,000.

IDB

The Inter-American Development Bank currently funds three projects in El Salvador. The largest will construct major water system and sanitation improvements for the city of San Salvador. That project includes a new

treatment plant, river intake, well field, transmission mains, reservoirs, extension of the distribution system, and major rehabilitation work. A second project, also large, will construct water supply systems and latrines in small rural communities. A much smaller rural project aims at constructing emergency works to repair damage done by the 1987 earthquake.

	SAN SALVADOR (1988-1993)	EMERGENCY (1988-1992)	RURAL (1988-1992)
IDB	\$166,000,000	\$3,100,000	\$21,000,000
GOES	18,500,000	350,000	7,000,000
Total	\$184,500,000	\$3,450,000	\$28,000,000

MEETING THE CAI OBJECTIVE

During the last several years, El Salvador has continued to improve water and sanitation coverage in the urban sector while at the same time falling behind in rural areas. As shown in Tables D-1 and D-2, in both urban water and urban sanitation the country has essentially met and surpassed the CAI objective for 1989. The new IDB investment program for water supply improvements in the city of San Salvador should mean that urban coverage will continue to increase in the future.

In the rural sector, however, water and sanitation coverage is declining. The fall in coverage is dramatic for water supply, where coverage has fallen to 13 percent. Because of the military situation in the countryside, there is no reason to believe that the situation will improve in the near future. The CAI rural sanitation objective cannot be achieved by 1989, but may be achieved by 1992; there is no possibility, however, that the water objective can be met in the rural sector, even by 1992. USAID's commitment of \$40,000,000 to rural water and sanitation, which has been factored into Tables D-4 and D-5, nevertheless, means that considerable progress should be made beginning early in the next decade.

**TABLE D - 1
EL SALVADOR**

**HISTORICAL WATER SUPPLY
COVERAGE VERSUS CAI OBJECTIVE**

WATER SUPPLY									
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	4,540	2,330	51 %	1,900	1,280	67 %	2,640	1,050	40 %
BASELINE 1984	4,700	2,261	48 %	1,980	1,445	73 %	2,720	816	30 %
1986	4,800	2,081	43 %	2,000	1,518	76 %	2,800	563	20 %
1988	4,934	2,236	45 %	2,072	1,864	90 %	2,862	372	13 %
CAI OBJECTIVE 1989	5,100	2,826	55 %	2,150	1,806	84 %	2,950	1,020	35 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE D - 2
EL SALVADOR

HISTORICAL SANITATION
COVERAGE VERSUS CAI OBJECTIVE

YEAR	SANITATION								
	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	4,540	1,600	35 %	1,900	910	48 %	2,640	690	26 %
BASELINE 1984	4,700	2,355	50 %	1,980	1,485	75 %	2,720	870	32 %
1986	4,800	2,756	57 %	2,000	1,772	89 %	2,800	984	35 %
1988	4,934	2,911	59 %	2,072	1,927	93 %	2,862	984	34 %
CAI OBJECTIVE 1989	5,100	2,944	58 %	2,150	1,856	86 %	2,950	1,088	37 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE D - 3
EL SALVADOR

PROJECTED SHORTFALLS
IN MEETING CAI OBJECTIVE

	WATER SUPPLY COVERAGE (PERSONS)			SANITATION COVERAGE (PERSONS)		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
CAI OBJECTIVE 1989	2,826	1,806	1,020	2,944	1,856	1,088
BASELINE 1984	2,261	1,445	816	2,355	1,485	870
REQUIRED INCREASE	565	361	204	589	371	218
ESTIMATED 1984-86 GAIN	(180)	73	(253)	401	287	114
ESTIMATED 1986-88 GAIN	155	346	(191)	155	155	0
CAI COVERAGE SHORTFALL	648	NONE	648	104	NONE	104

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE D - 4
EL SALVADOR

ESTIMATED COST TO
ACHIEVE CAI OBJECTIVE

	WATER SUPPLY			SANITATION		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
SHORTFALL IN POPULATION COVERAGE SHOWN IN THOUSANDS	648	NONE	648	104	NONE	104
ESTIMATED UNIT COST - \$ PER CAPITA	N/A	\$176	\$87	N/A	\$77	\$14
ESTIMATED TOTAL COST (\$ IN THOUSANDS)	\$56,376	NONE	\$56,376	\$1,456	NONE	\$1,456

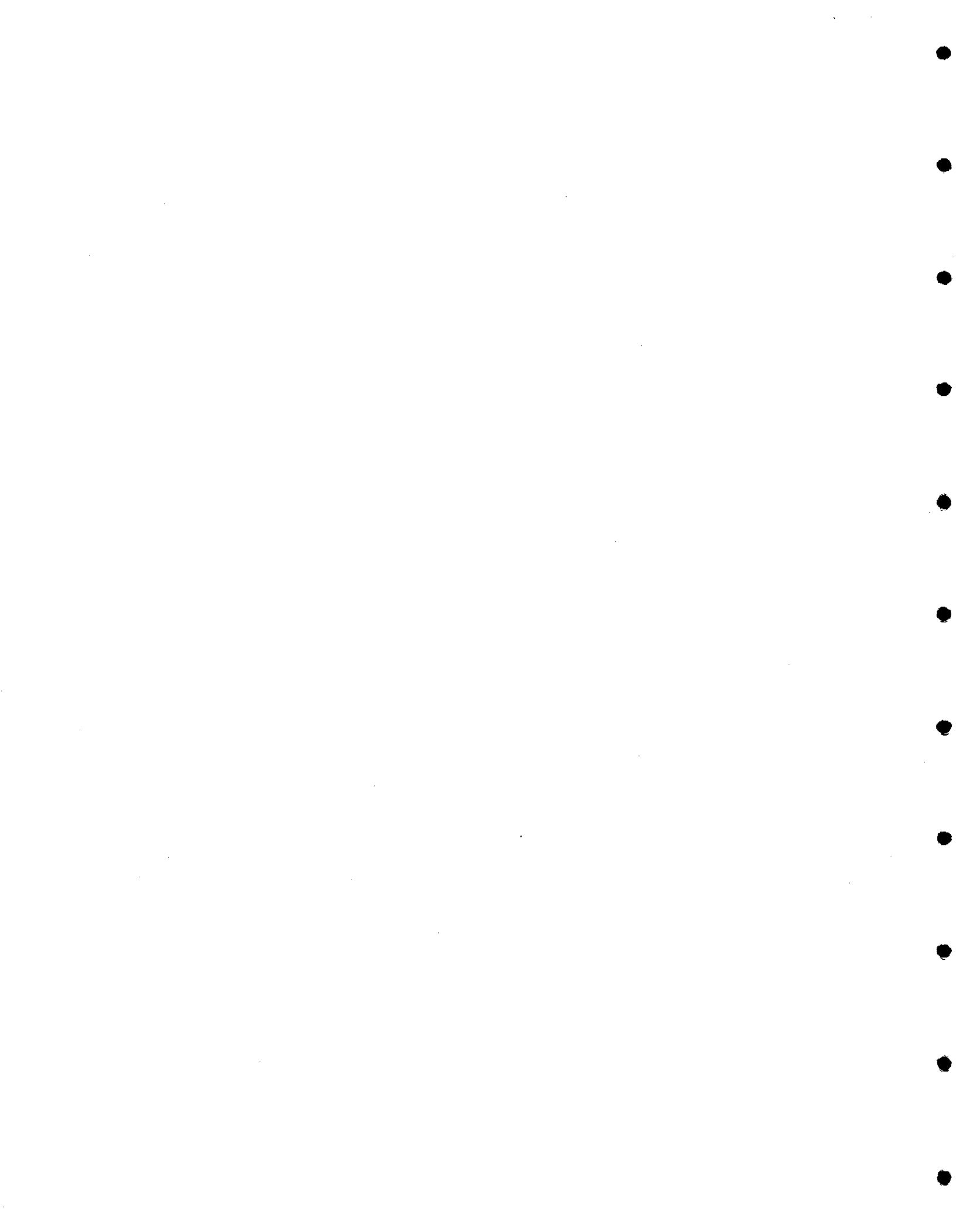
TOTAL ESTIMATED COST: **\$57,832,000**

**TABLE D - 5
EL SALVADOR**

**PROJECTED FUNDING
SHORTFALL TO MEET CAI
(COSTS IN THOUSANDS)**

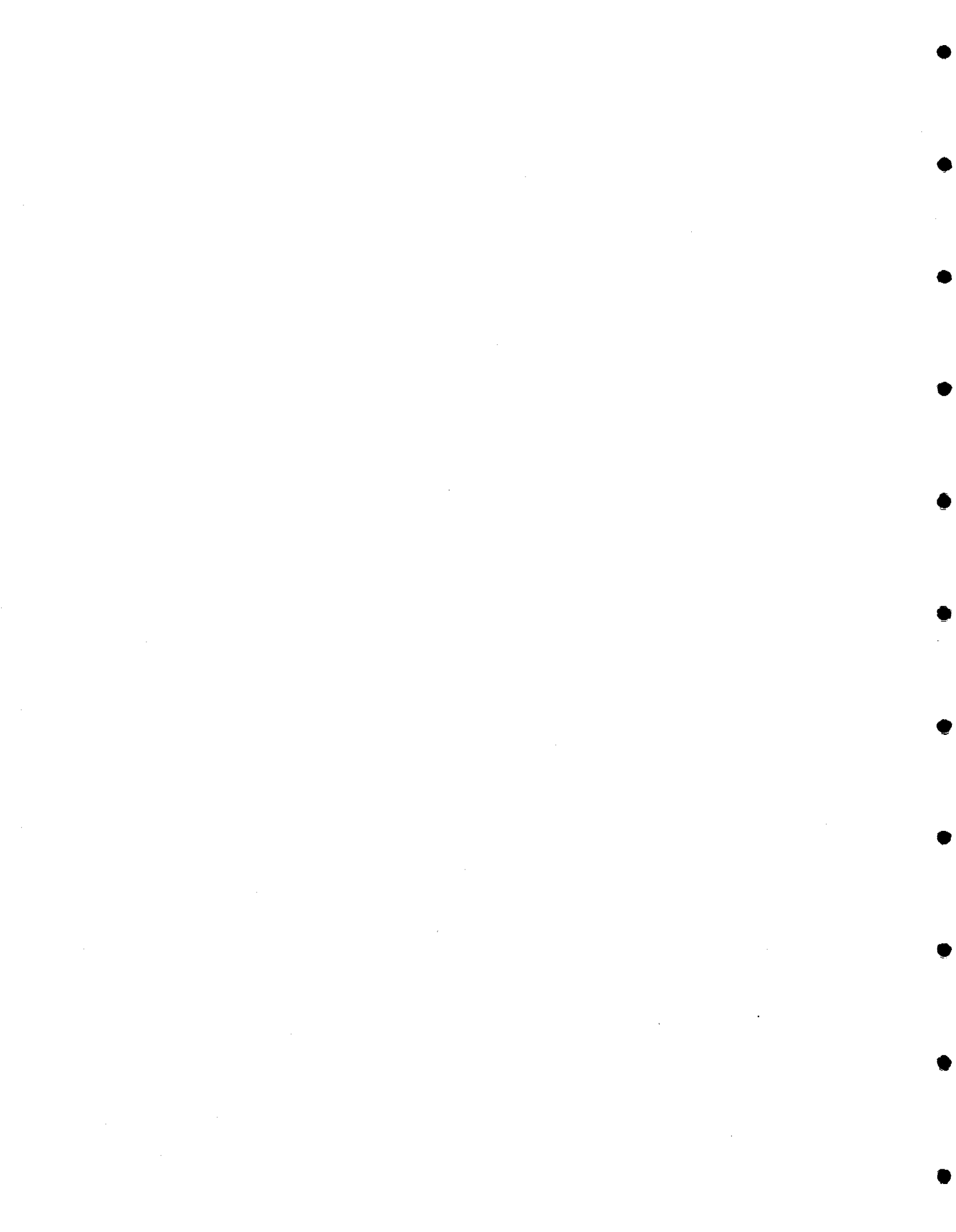
	WATER SUPPLY		SANITATION		UN-SPECIFIED	TOTAL
	URBAN	RURAL	URBAN	RURAL		
ESTIMATED TOTAL COST TO MEET CAI	NONE	\$56,376	NONE	\$1,456	NONE	\$57,832
FIRMLY COMMITTED INVESTMENTS (1)	\$19,360	\$64,640	\$390	\$10,340	NONE	\$94,730
PROJECTED FUNDING SHORTFALL	NONE	NONE	NONE	NONE	NONE	\$0

(1) ONLY THOSE INVESTMENTS WHICH INCREASE COVERAGE



APPENDIX E

COUNTRY PROFILE: COSTA RICA



APPENDIX E

COUNTRY PROFILE: COSTA RICA

INTRODUCTION

Of external donors, UNICEF, USAID, and the IDB reported active programs in Costa Rica for 1989 and 1990. At the end of 1988, the World Bank completed a program of water system improvements for San Jose and other cities valued at \$55,000,000 and is planning a new investment program; however, there is currently no active World Bank program. USAID expects to begin funding a local currency program for both rural and urban water improvements beginning in early 1989 for a total value of \$10,625,000. RHUDO/CABEI investments in the sector are projected to be \$15,000,000, but are not yet firm enough to be included in this funding analysis.

CURRENT PROGRAMS

USAID

USAID expected to complete disbursements by the end of FY 1988 on its \$7,000,000 water expansion program for medium-sized cities administered through the national water and sewer agency, *Agua y Alcantarrillados* (AyA).

UNICEF

UNICEF has a small rural program in Costa Rica to construct piped water supply systems in small communities. UNICEF's funding for the next two years will be as follows: \$212,000 (1989) and \$100,000 (1990). Although the Government of Costa Rica's contribution is unknown, it is believed to be substantial.

IDB Program

The Inter-American Development Bank has a single active loan project in Costa Rica. This project has three components: water supply improvement projects for medium-sized cities, a rural project aimed at building new water systems in small towns, and a sewerage project for Punta Arena.

1986-1992

IDB	\$28,300,000
GOCR	15,100,000
Total	\$43,400,000

MEETING THE CAI OBJECTIVE

As shown in Tables E-1 and E-2, since the 1987 Report, CAI water and sanitation objectives have been met and exceeded in the Costa Rica urban sector. In the rural areas, however, recent figures indicate lower coverage than reported in 1987. There is now no likelihood that the CAI rural water supply and sanitation objectives will be met in 1989. Moreover, since funding is lacking for rural programs, as shown in Tables E-4 and E-5, it is doubtful that rural sector objectives can be met even by 1992. Overall rural coverage for Costa Rica, however, is high compared to other Central American countries.

TABLE E - 1
COSTA RICA

HISTORICAL WATER SUPPLY
COVERAGE VERSUS CAI OBJECTIVE

WATER SUPPLY									
YEAR	TOTAL POP-ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	2,210	1,960	89 %	1,025	1,025	100 %	1,185	935	79 %
BASELINE 1984	2,405	2,154	90 %	1,070	1,059	99 %	1,335	1,095	82 %
1986	2,531	2,281	90 %	1,126	1,115	99 %	1,405	1,166	83 %
1988	2,790	2,572	92 %	1,490	1,490	100 %	1,300	1,082	83 %
CAI OBJECTIVE 1989	2,850	2,640	93 %	1,534	1,324	86 %	1,316	1,316	100 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

TABLE E - 2
COSTA RICA

HISTORICAL SANITATION
COVERAGE VERSUS CAI OBJECTIVE

YEAR	SANITATION								
	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	2,210	2,044	92 %	1,025	1,016	99 %	1,185	1,028	87 %
BASELINE 1984	2,405	2,319	96 %	1,070	1,059	99 %	1,335	1,260	94 %
1986	2,531	2,442	96 %	1,126	1,115	99 %	1,405	1,327	94 %
1988	2,790	2,678	96 %	1,490	1,475	99 %	1,300	1,203	93 %
CAI OBJECTIVE 1989	2,850	2,640	93 %	1,534	1,324	86 %	1,316	1,316	100 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE E - 3
COSTA RICA**

**PROJECTED SHORTFALLS
IN MEETING CAI OBJECTIVE**

	WATER SUPPLY COVERAGE (PERSONS)			SANITATION COVERAGE (PERSONS)		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
CAI OBJECTIVE 1989	2,640	1,324	1,316	2,640	1,324	1,316
BASELINE 1984	2,154	1,059	1,095	2,319	1,059	1,260
REQUIRED INCREASE	486	265	221	321	265	56
ESTIMATED 1984-86 GAIN	127	56	71	123	56	67
ESTIMATED 1986-88 GAIN	291	375	(84)	236	360	(124)
CAI COVERAGE SHORTFALL	234	NONE	234	113	NONE	113

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE E - 4
COSTA RICA**

**ESTIMATED COST TO
ACHIEVE CAI OBJECTIVE**

	WATER SUPPLY			SANITATION		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
SHORTFALL IN POP- ULATION COVERAGE SHOWN IN THOUSANDS	234	NONE	234	113	NONE	113
ESTIMATED UNIT COST - \$ PER CAPITA	N/A	\$132	\$81	N/A	\$136	\$29
ESTIMATED TOTAL COST (\$ IN THOUSANDS)	\$18,954	NONE	\$18,954	\$3,277	NONE	\$3,277

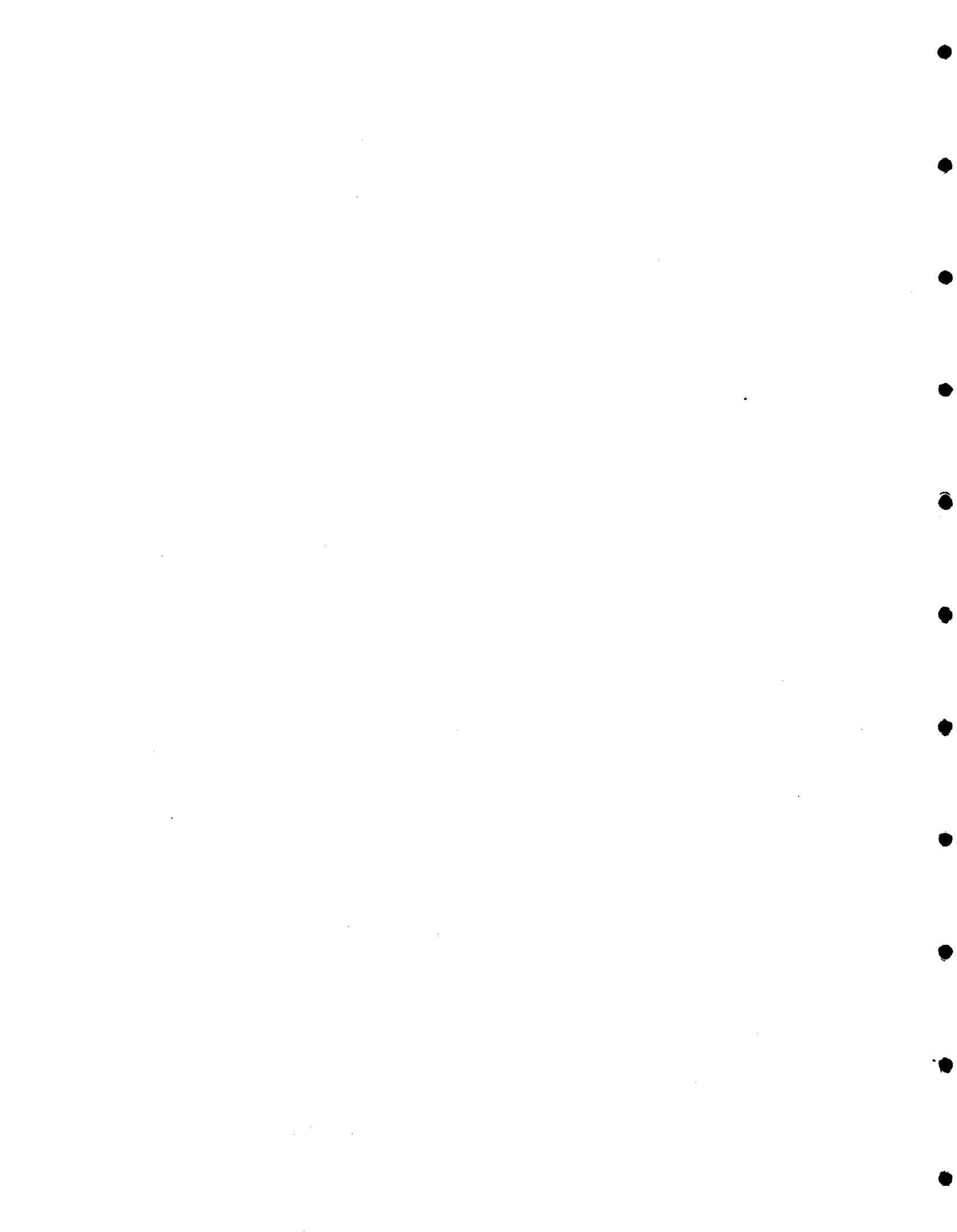
TOTAL ESTIMATED COST: \$22,231,000

**TABLE E - 5
COSTA RICA**

**PROJECTED FUNDING
SHORTFALL TO MEET CAI
(COSTS IN THOUSANDS)**

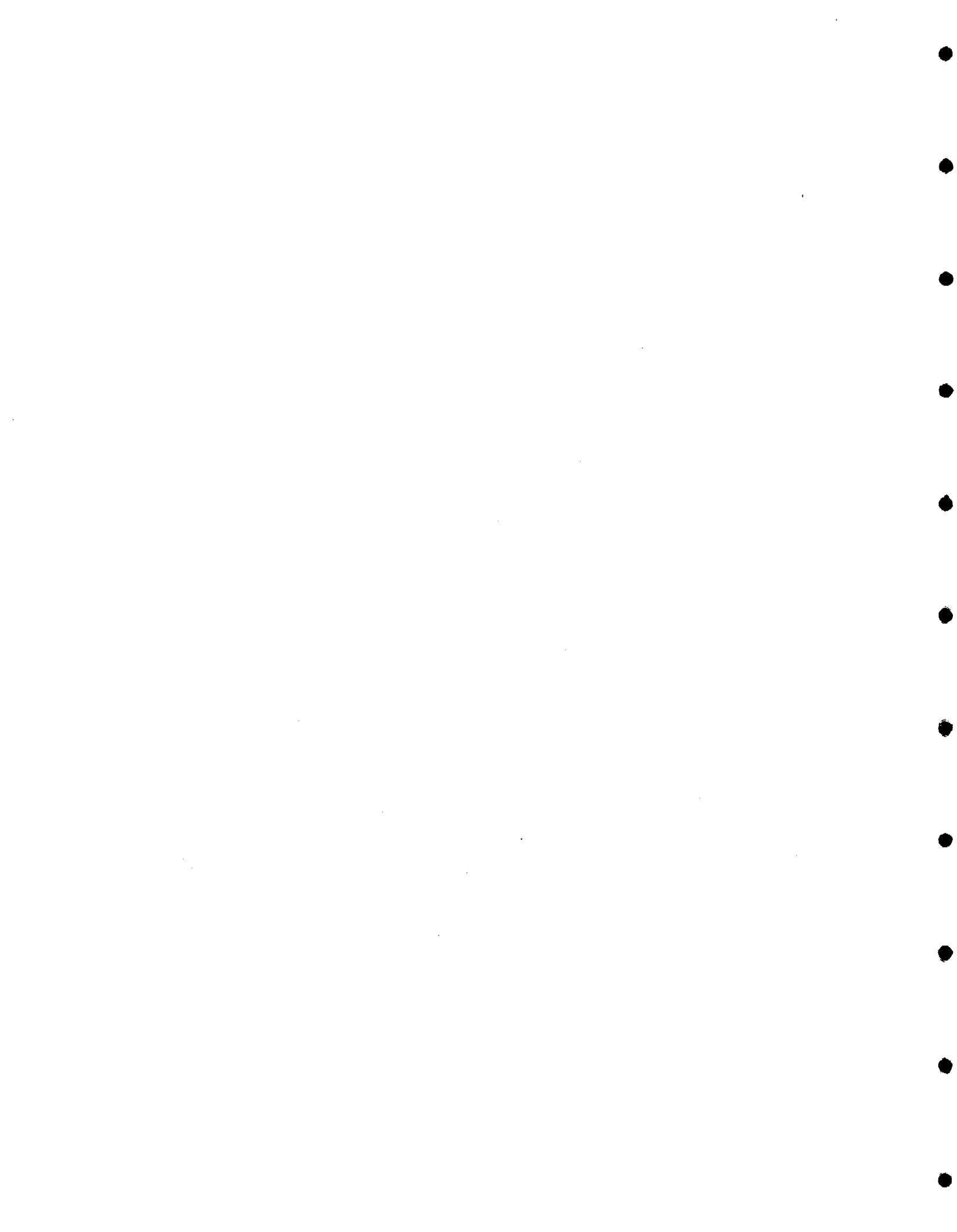
	WATER SUPPLY		SANITATION		UN-SPECIFIED	TOTAL
	URBAN	RURAL	URBAN	RURAL		
ESTIMATED TOTAL COST TO MEET CAI	NONE	\$18,954	NONE	\$3,277	NONE	\$22,231
FIRMLY COMMITTED INVESTMENTS (1)	\$5,300	\$5,637	\$0	\$0	NONE	\$10,937
PROJECTED FUNDING SHORTFALL	NONE	\$13,317	NONE	\$3,277	NONE	\$16,594

(1) ONLY THOSE INVESTMENTS WHICH INCREASE COVERAGE



APPENDIX F

COUNTRY PROFILE: PANAMA



APPENDIX F

COUNTRY PROFILE: PANAMA

INTRODUCTION

Political instability has brought externally financed water and sanitation projects to a standstill in Panama. At the end of 1988, the World Bank had completed a program of water system improvements with IDAAN, and now has no new projects. UNICEF has transferred project funds from Panama to Nicaragua. The Inter-American Development Bank has one ongoing loan program in Panama aimed at water system improvements in Panama City and other cities. The program consists of two separate loans that date from early in the decade and to date are about 80 percent disbursed. Nevertheless, no disbursements were made in 1988, and none are expected in 1989 or thereafter until political conditions are resolved. Each loan is valued at \$13,000,000, with a total counterpart contribution of \$14,000,000. Since 80 percent of these funds are now disbursed, and since they are aimed at improvements rather than new coverage, none of these amounts are included as firmly committed to extend coverage.

MEETING THE CAI OBJECTIVE

Despite severe problems, Panama has progressed in both water and sanitation coverage since 1986. One hundred percent coverage continues to exist in urban water. In urban sanitation and rural water, the CAI objectives have now been met and exceeded. In rural sanitation the CAI objective is not yet achieved. Although 100 percent coverage exists for urban water, the CAI objective is based on the projected population for 1989 which has not yet been reached. Coverage figures are presented in Tables F-1 and F- 2.

With current activity all but stopped, it cannot be expected that Panama will meet the CAI objective for urban water and rural sanitation in 1989, or even 1992. It remains questionable, moreover, whether existing coverage can be maintained. Funding needs are summarized in Tables F-4 and F-5.

**TABLE F - 1
PANAMA**

**HISTORICAL WATER SUPPLY
COVERAGE VERSUS CAI OBJECTIVE**

WATER SUPPLY									
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	1,977	1,527	77 %	1,003	913	91 %	974	614	63 %
BASELINE 1984	2,157	1,643	76 %	1,127	1,116	99 %	1,030	527	51 %
1986	2,249	1,831	81 %	1,195	1,183	99 %	1,054	648	61 %
1988	2,305	1,981	86 %	1,230	1,220	99 %	1,075	761	71 %
CAI OBJECTIVE 1989	2,393	1,963	82 %	1,305	1,305	100 %	1,088	658	60 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE F - 2
PANAMA**

**HISTORICAL SANITATION
COVERAGE VERSUS CAI OBJECTIVE**

SANITATION									
YEAR	TOTAL POP- ULATION	ALL AREAS		URBAN AREAS			RURAL AREAS		
		POP. SERVED	PERCENT SERVED	URBAN POP.	TOTAL SERVED	PERCENT SERVED	RURAL POP.	TOTAL SERVED	PERCENT SERVED
1980	1,977	1,225	62 %	1,003	650	65 %	974	575	59 %
BASELINE 1984	2,157	1,367	63 %	1,127	687	61 %	1,030	680	66 %
1986	2,249	1,425	63 %	1,195	729	61 %	1,054	696	66 %
1988	2,305	1,856	81 %	1,230	1,071	87 %	1,075	785	73 %
CAI OBJECTIVE 1989	2,393	1,709	71 %	1,305	859	66 %	1,088	850	78 %

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE F - 3
PANAMA**

**PROJECTED SHORTFALLS
IN MEETING CAI OBJECTIVE**

	WATER SUPPLY COVERAGE (PERSONS)			SANITATION COVERAGE (PERSONS)		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
CAI OBJECTIVE 1989	1,963	1,305	658	1,709	859	850
BASELINE 1984	1,643	1,116	527	1,367	687	680
REQUIRED INCREASE	320	189	131	342	172	170
ESTIMATED 1984-86 GAIN	188	67	121	58	42	16
ESTIMATED 1986-88 GAIN	150	37	113	431	342	89
CAI COVERAGE SHORTFALL	85	85	NONE	65	NONE	65

POPULATION FIGURES ARE ROUNDED TO NEAREST THOUSAND

**TABLE F - 4
PANAMA**

**ESTIMATED COST TO
ACHIEVE CAI OBJECTIVE**

	WATER SUPPLY			SANITATION		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
SHORTFALL IN POP- ULATION COVERAGE SHOWN IN THOUSANDS	85	85	NONE	65	NONE	65
ESTIMATED UNIT COST - \$ PER CAPITA	N/A	\$138	\$88	N/A	\$165	\$17
ESTIMATED TOTAL COST (\$ IN THOUSANDS)	\$11,730	\$11,730	NONE	\$1,105	NONE	\$1,105

TOTAL ESTIMATED COST: \$12,835,000

**TABLE F - 5
PANAMA**

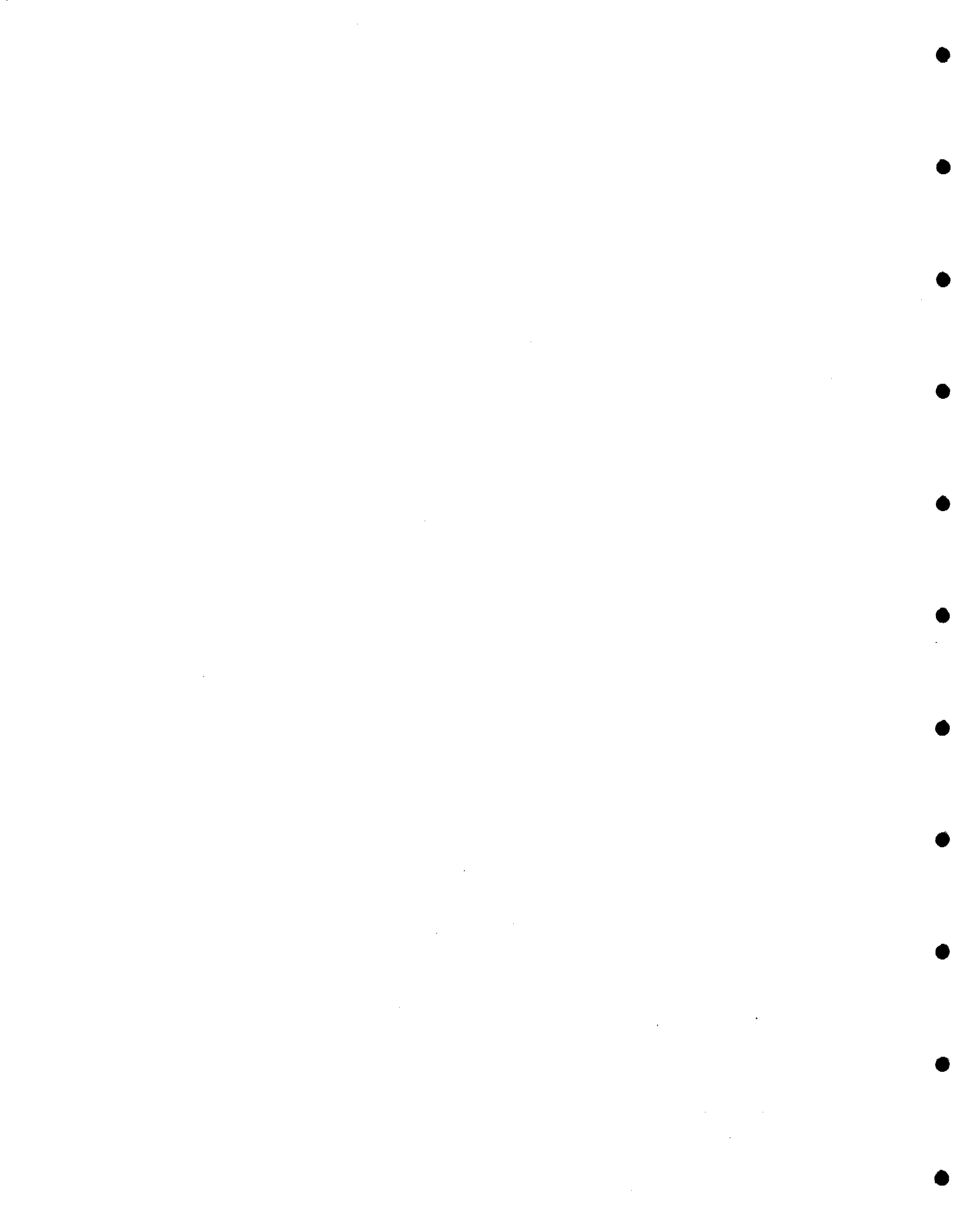
**PROJECTED FUNDING
SHORTFALL TO MEET CAI
(COSTS IN THOUSANDS)**

	WATER SUPPLY		SANITATION		UN-SPECIFIED	TOTAL
	URBAN	RURAL	URBAN	RURAL		
ESTIMATED TOTAL COST TO MEET CAI	\$11,730	NONE	NONE	\$1,105	NONE	\$12,835
FIRMLY COMMITTED INVESTMENTS (1)	NONE	NONE	NONE	NONE	NONE	\$0
PROJECTED FUNDING SHORTFALL	\$11,730	NONE	NONE	\$1,105	NONE	\$12,835

(1) ONLY THOSE INVESTMENTS WHICH INCREASE COVERAGE

APPENDIX G

COUNTRY PROFILE: NICARAGUA



APPENDIX G

COUNTRY PROFILE: NICARAGUA

INTRODUCTION

Political events make it impossible to report on the status of water and sanitation in Nicaragua. Many large donors are no longer active in the country. Of the donors contacted, only UNICEF reported ongoing water and sanitation projects, some of which represent funds redirected from earlier commitments in Panama. Eastern Block countries may be active in water and sanitation work in the country, but no information was available. No estimate of Nicaraguan coverage versus the CAI objective can be made. UNICEF contributions over the next three years will be as follows: \$1,482,300 (1989); \$752,000 (1990); and \$822,000 (1991). Contributions from the Government of Nicaragua are not known.