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WATER SUPPLY AND SANITATION FOR THE POOR: THE ACHIEVEMENTS OF THE INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE IN LATIN AMERICA AND THE CARIBBEAN

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1. Introduction

At the beginning of the International Drinking Water Supply and Sanitation Decade, Latin America and the Caribbean were relatively well provided with water supply and sanitation facilities compared with the other regions of the developing world. Nevertheless, many millions of the citizens of the countries of the region remained without a protected source of drinking water, and even more suffered the absence of safe and decent facilities for the disposition of excreta. This was especially true for the low income population in both urban and rural areas. The programmes developed under the Alliance for Progress and continued in the 1970s were largely directed towards the provision of urban supply and to the delivery of water and sewerage services by traditional means.

It can justifiably be claimed that this conventional technology centred around large piped systems served the region well. The reduction in the expansion of service in more recent years in most countries of the region raises questions, however, about the nature of the policies being applied. There is a need to reconsider the approach being taken and perhaps to introduce innovations in the means of delivery of drinking water supply and services.

This paper critically examines the recent behavior of the sector within the context of the goals of the International Drinking Water Supply and Sanitation Decade (IDWSSD). Consideration is given to the achievements of the sector and to its failures. Specifically, attention is drawn to the needs of the poor rural and peri-urban populations. The satisfaction of the needs of the poor is discussed with reference to the wider social and economic problems facing the region, particularly the recession and the accompanying problem of capital shortage.

(a) The situation at the beginning of the decade

By 1980, relatively well organized water supply and sanitation institutions were operating in most of the countries of the region. Usually these institutions were organized within the central government and had responsibility for both drinking water supply and sanitation. There were exceptions, as in Brazil, where the institutions were organized within the states, and in Colombia, where the municipalities continue to be the most important providers of water supply and sanitation services. It was characteristic everywhere, however, that the institutions primarily directed their efforts towards the satisfaction of the needs of the urban population through the use of high capital-cost, centralized water supply and sewerage systems.

In the urban areas of most countries of the region, high levels of service had been achieved, particularly in water supply where 71 percent of the population were served with house connections (Table 1). The situation was not, however, so satisfactory in the provision of sewerage, only 59 percent of the urban population being served, although perhaps the data understate the real existence of adequate individual excreta disposal systems. In rural areas less progress had been made although, here again, in the larger rural settlements in many parts of the region piped drinking water supply systems were being installed. There were still, however, many rural people without a safe source of drinking water or sanitary excreta disposal facilities. Moreover, very few countries had any institutional support for providing services to this part of their population.

The provision of service in 1980 varied considerably among the countries of the region, with the highest levels in the smaller countries of Central America and the Caribbean. Not surprisingly, the provision of services remained lowest in those countries with a higher proportion of rural population and lower incomes -Haiti, Paraguay, Bolivia and Nicaragua. Only in the island countries of the Caribbean were high levels of service to be found for the rural population.

(b) The targets of the Decade

By 1980, the majority of the countries of the region had set national targets for the Decade. These targets have been adjusted since then, mainly to reflect the impact of the generally negative overall economic climate. The targets remain ambitious, however, even if they fall short of the original goal set at the time of the Mar del Plata Conference,

to provide all people with water of safe quality in adequate quantity and basic sanitary facilities by 1990,

Table 1

LATIN AMERICA AND THE CARIBBEAN, PROVISION OF WATER SUPPLY & SANITATION, 1980

	WATER SUPPLY															SEWERAGE AND SANITATION					
	Total Population served*					Urban Population						Rural Population									
Country	Total Population	House Connection	Easy Access	Total Served	%	Total Population	House Connection	%	Easy Access	%	Total Served	%	Total Population	Total Served	%	Total Served	%	Urban Served	%	Rural Served	%
Argentina	27.94	13.38	1.44	14.82	53	23.19	13.38	58	0.65	3	14.03	61	4.75	0.79	17	20.21	72	18.56	80	1.65	35
Bahamas	0.22	0.11	0.02	0.13	59	0.14	0.11	79	0.02	14	0.13	93	0.08	-	0	0.12	55	0.12	86	-	-
Barbados	0.24	0.08	0.16	0.24	100	0.08	0.08	100	0.00	0	0.08	100	0.17	0.16	94	-	100	-	-	-	-
Belize	0.15	0.05	0.05	0.10	67	0.07	0.05	71	0.03	43	0.08	114	0.07	0.03	43	0.10	67	0.05	71	0.06	86
Bolivia	5.60	0.80	1.45	2.05	37	2.49	0.60	24	1.13	45	1.73	69	3.11	0.32	10	1.04	19	0.92	37	0.12	4
Brazil	119.10	64.61	22.00	86.61	73	80.48	64.61	80	2.40	3	67.01	83	38.62	19.60	51	26.30	22	25.91	32	0.39	1
Colombia	27.00	11.84	11.27	23.11	86	17.28	11.84	69	4.16	24	16.00	93	9.72	7.11	73	16.37	61	16.00	93	0.37	4
Costa Rica	2.22	1.30	0.76	2.06	93	1.33	1.30	98	0.03	2	1.33	100	0.89	0.73	82	2.07	93	1.32	99	0.75	84
Chile	11.20	8.42	1.01	9.43	84	9.07	8.42	93	0.65	7	9.07	100	2.13	0.36	17	9.24	83	9.03	100	0.21	10
Dominican Rep	5.43	1.84	1.39	3.23	59	2.75	1.64	60	0.69	25	2.33	85	2.68	0.90	34	0.80	15	0.69	25	0.11	4
Ecuador	8.12	2.77	1.10	3.87	48	3.82	2.77	73	0.25	7	3.02	79	4.30	0.85	20	3.54	44	2.80	73	0.74	17
El Salvador	4.54	1.17	1.16	2.33	51	1.90	1.17	62	0.11	6	1.28	67	2.64	1.05	40	1.60	35	0.91	48	0.69	26
Guatemala	7.26	1.38	1.86	3.24	45	2.69	1.38	51	1.03	38	2.41	90	4.57	0.83	18	2.14	29	1.22	45	0.92	20
Guyana	0.79	0.35	0.28	0.63	80	0.39	0.35	90	0.04	10	0.39	100	0.40	0.24	60	0.61	77	0.28	72	0.32	80
Haiti	4.91	0.33	0.56	0.89	18	1.20	0.33	28	0.28	23	0.61	51	3.71	0.28	8	0.87	18	0.50	42	0.37	10
Honduras	3.75	0.70	1.52	2.22	59	1.36	0.70	51	0.56	41	1.26	93	2.39	0.96	40	1.29	34	0.67	49	0.62	26
Jamaica	2.25	0.62	0.51	1.13	50	1.13	0.62	55	0.00	0	0.62	55	1.12	0.51	46	0.15	7	0.13	12	0.02	2
Mexico	70.12	28.39	22.76	51.15	73	45.79	28.39	62	13.03	28	41.42	90	24.33	9.73	40	38.37	55	35.45	77	2.92	12
Nicaragua	2.73	0.97	0.08	1.05	38	1.46	0.97	66	0.01	1	0.98	67	1.27	0.07	6	0.50	18	0.50	34	-	-
Panama	1.92	0.84	0.72	1.56	81	0.94	0.84	89	0.11	12	0.95	101	0.98	0.61	62	1.36	71	0.78	83	0.58	59
Paraguay	3.06	0.45	0.17	0.62	20	1.15	0.45	39	0.00	0	0.45	39	1.91	0.17	9	2.61	85	1.09	95	1.52	80
Peru	16.82	5.82	2.31	8.13	48	10.21	5.82	57	1.10	11	6.92	68	6.61	1.21	18	5.86	35	5.86	57	0.02	0
Suriname	0.35	0.09	0.22	0.31	89	0.10	0.09	90	0.01	10	0.10	100	0.25	0.20	80	0.30	86	0.10	100	0.20	80
Trinidad	1.10	0.55	0.52	1.07	97	0.70	0.55	79	0.15	21	0.70	100	0.40	0.37	93	1.02	93	0.67	96	0.35	88
Uruguay	2.94	2.19	0.17	2.36	80	2.44	2.19	90	0.16	7	2.35	96	0.50	0.01	2	1.47	50	1.44	59	0.03	6
Venezuela	15.02	9.80	2.87	12.67	84	11.89	9.80	82	1.20	10	11.00	93	3.13	1.67	53	7.47	50	7.09	60	0.38	12
TOTAL	344.78	158.45	76.56	235.01	68	224.09	158.45	71	27.80	12	186.25	83	120.73	48.76	40	145.43	42	132.09	59	13.34	11

Source: PAHO

*Population in millions

according priority to the poor and less privileged. 1/

The different targets for the Decade adopted by the countries of Latin America and the Caribbean can be summarized as follows:

(i) The provision of safe drinking water to 91% of the urban population - 85% to be served through house connections;
(ii) The provision of safe drinking water to 56% of the rural population;
(iii) The provision of sewerage or other excreta disposal services to 69% of the urban population;
(iv) The provision of means for the sanitary disposition of excreta to 31% of the rural population. 2/

The Pan American Health Organization (PAHO) has estimated that the achievement of these targets implies the need to provide water supplies to 99 million people in urban areas and 21 million in rural areas. Some 85 million urban dwellers and 26 million rural dwellers must be provided with sanitation. 3/

It was estimated in 1985, again by PAHO, that the total investment required during the remainder of the Decade in order to reach the national targets would be some 30 billion United States dollars. In addition, however, considerable sums will be required for the maintenance of the existing systems. The cost of maintenance of existing systems probably lies between US$ 2 billion and US$ 8 billion a year. If new investment and maintenance requirements are taken together, there is an additional demand of from US$ 40 to US$ 70 billion for the sector in the rest of the Decade.

(c) The financial restraint

At the beginning of the Decade, it was obvious that for many countries in the region, the achievement of the goals of the Decade and even of the specific national targets would be very dependent on the financial resources made available. The very existence of the Decade implied a reconsideration of the priority given water supply and sanitation investments even beyond that already given during the 1960s and 1970s.

It was estimated that for the region as a whole, the level of investment required, to achieve the targets set for the Decade by the countries in 1980, using conventional technology, was some one and half to two and a half times the level achieved between 1970 and 1977. 4/ In some countries, plainly the poorer ones, that coefficient would be very much higher. Such increases in the amount of investment, it was hazarded, could be achieved in most countries of the region less than

complete coverage was targeted.5/ There would be exceptions, however, particularly among the smaller and poorer countries.

Moreover, it was concluded that the bulk of the required financing would have to be found within the countries themselves. External sources of finance could not be expected to provide more than a small amount of the capital required. At the end of the 1970s the external contribution to the sector was equivalent to only 8% of the total, and this contribution was heavily concentrated in the larger countries of the region and in urban areas.

2. The achievements so far

The progress made in increased coverage and investments in other aspects of water supply and sanitation, although substantial in a few countries, has been less during the first half of the Decade than was expected for the region as a whole (Table 2). The increases in coverage that have been obtained are far from sufficient to meet the targets set for 1990. This is particularly true in those areas of coverage which most affect the poor -the expansion of sanitation both urban and rural, (Figure 1), and of rural drinking water supply (Figure 2).

(a) The reasons for the lack of progress

There are various reasons for the lackluster performance of the sector and for the failure to meet the targets set in 1980. Some are specific to the particular circumstances of the 1980s while others are longer-term weaknesses in the organization of the provision of water supply and sanitation in the region. For example, it has long been recognized that there is a dearth of properly trained personnel and a need to strengthen the institutions of the sector. At the same time the financing of water supply and sanitation remains too dependent on sources external to the sector itself. It is clear that the bulk of financing will have to be met from the proceeds from the provision of services. Unfortunately, few water supply and sanitation utilities have adequate tariff structures.

The impact of the failure of the provision of services to expand in line with the targets established at the beginning of the Decade has been compounded by the fact that full use is not made of existing facilities. There are too many examples in the region of a serious neglect of maintenance, which leads to poor functioning and repeated breakdowns. Particularly important in this respect is the widespread failure to control losses from distribution systems.

Table 2

LATIN AMERICA AND THE CARIBBEAN, PROVISION OF WATER SUPPLY & SANITATION, 1985

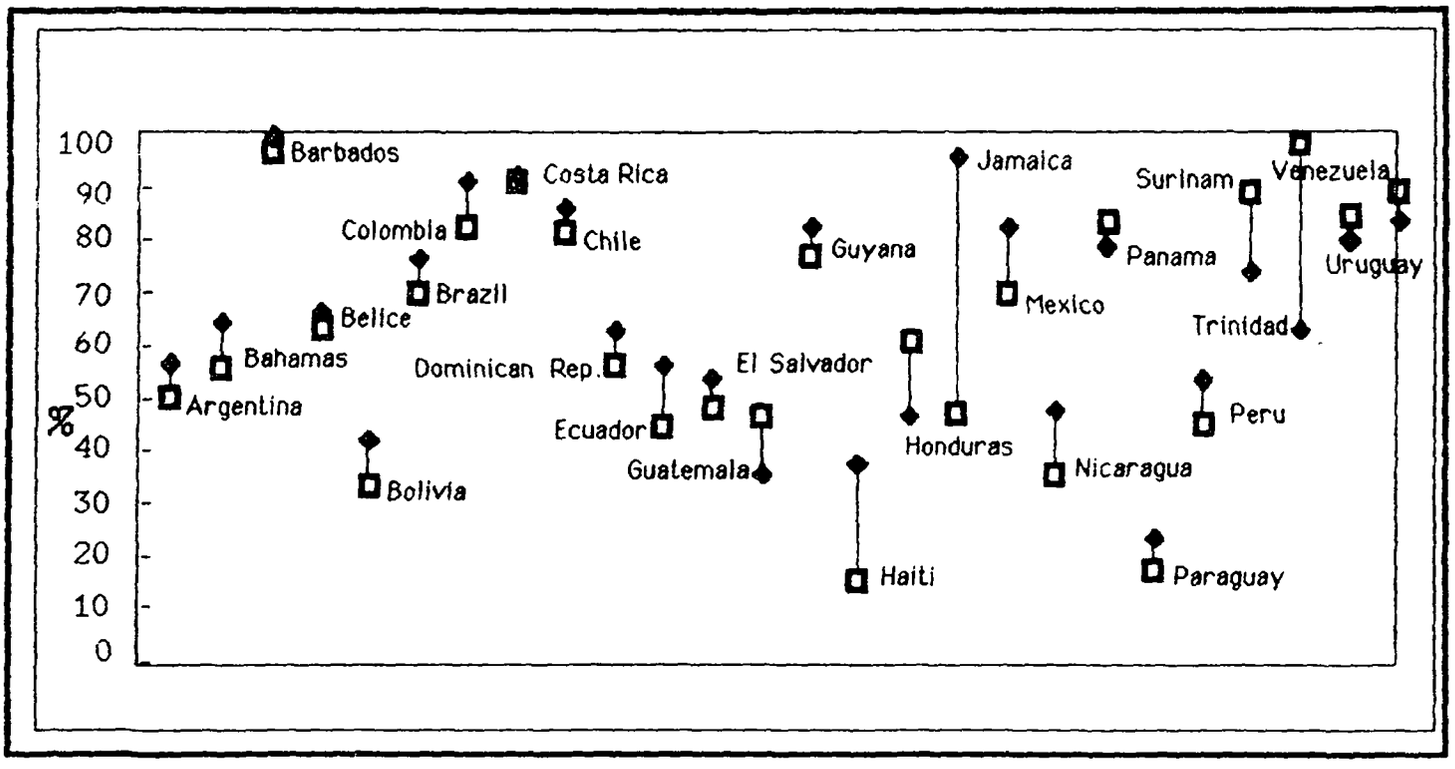
	WATER SUPPLY															SEWERAGE AND SANITATION					
	Total Population served*					Urban *					Rural *										
Country	Total Population	House Connection	Easy Access	Total Served	%	Urban Population	House Connection		Easy Access	%	Total Served	%	Total Population	Total Served	%	Total Served	%	Urban Served	%	Rural Served	%
Argentina	30.57	15.60	1.26	16.86	55	25.57	15.60	61	0.40	2	16.00	63	5.00	0.86	17	21.05	69	19.30	75	1.75	35
Bahamas	0.23	0.12	0.03	0.15	65	0.15	0.12	80	0.03	20	0.15	100	0.08	-	0	0.15	65	0.15	100	-	-
Barbados	0.25	0.08	0.17	0.25	100	0.09	0.09	100	0.00	0	0.09	100	0.16	0.16	100	0.10	100	0.10	111	-	-
Belize	0.16	0.06	0.05	0.11	69	0.07	0.06	86	0.02	29	0.08	-	0.09	0.02	22	0.10	63	0.06	86	0.04	44
Bolivia	6.43	2.11	0.64	2.75	43	3.07	2.11	69	0.20	7	2.31	75	3.36	0.44	13	1.34	21	1.02	33	0.32	10
Brazil	134.48	79.90	23.54	103.44	77	97.40	79.90	82	2.91	3	82.81	85	37.08	20.63	56	32.50	24	32.10	33	0.40	1
Colombia	27.50	13.97	11.22	25.19	92	18.10	13.97	77	4.11	23	18.08	100	9.40	7.11	76	18.59	68	17.34	96	1.25	13
Costa Rica	2.46	1.45	0.84	2.29	93	1.48	1.45	98	0.03	2	1.48	100	0.98	0.81	83	2.34	95	1.47	99	0.87	89
Chile	12.17	9.54	0.99	10.53	87	10.19	9.54	94	0.41	4	9.95	98	1.98	0.58	29	10.27	84	10.19	100	0.08	4
Dominican Rep	5.96	1.82	1.85	3.67	62	3.28	1.82	55	0.96	29	2.78	85	2.68	0.89	33	1.60	27	1.34	41	0.26	10
Ecuador	9.38	3.71	1.63	5.34	57	4.66	3.71	76	0.22	5	3.93	81	4.50	1.41	31	6.06	65	4.76	98	1.32	29
El Salvador	4.77	1.51	1.07	2.58	54	2.38	1.51	63	0.11	5	1.62	68	2.39	0.96	40	2.97	62	1.94	82	1.03	43
Guatemala	7.96	1.83	1.04	2.87	36	2.98	1.83	61	0.33	11	2.16	72	4.98	0.71	14	1.82	23	1.22	41	0.60	12
Guyana	0.82	0.37	0.31	0.68	83	0.40	0.37	93	0.04	10	0.41	103	0.42	0.27	64	0.73	89	0.40	100	0.33	79
Haiti	5.27	0.45	1.55	2.00	38	1.41	0.45	32	0.38	27	0.83	59	3.86	1.17	30	1.10	21	0.59	42	0.51	13
Honduras	4.07	0.55	1.45	2.00	49	1.44	0.55	38	0.26	18	0.81	56	2.63	1.19	45	1.25	31	0.35	24	0.90	34
Jamaica	2.10	0.99	1.03	2.02	96	1.10	0.99	90	0.10	9	1.09	99	1.00	0.93	93	1.91	91	1.01	92	0.90	90
Mexico	79.24	37.45	28.08	65.53	83	54.24	37.45	69	16.23	30	53.68	99	25.00	11.85	47	44.86	57	41.70	77	3.16	13
Nicaragua	3.27	1.30	0.27	1.57	48	1.87	1.30	70	0.12	6	1.42	76	1.40	0.15	11	0.88	27	0.65	35	0.23	16
Panama	2.14	1.04	0.72	1.76	82	1.09	1.04	95	0.05	5	1.09	100	1.05	0.67	64	0.72	34	1.08	99	0.64	61
Paraguay	3.35	0.59	0.21	0.80	24	1.18	0.59	50	0.03	3	0.62	53	2.17	0.18	8	2.85	85	1.05	89	1.80	83
Peru	19.70	7.62	2.73	10.35	53	12.55	7.62	61	1.53	12	9.15	73	7.15	1.20	17	9.29	47	8.40	67	0.89	12
Suriname	0.50	0.24	0.15	0.39	78	0.34	0.24	71	0.00	0	0.24	71	0.16	0.15	94	0.28	56	0.27	79	0.08	50
Trinidad	1.76	0.67	0.48	1.15	65	0.80	0.67	84	0.13	16	0.80	100	0.38	0.36	95	1.16	66	0.80	100	0.36	95
Uruguay	2.97	2.19	0.28	2.47	83	2.46	2.19	89	0.14	6	2.33	95	0.51	0.14	27	1.74	59	1.44	59	0.30	59
Venezuela	16.47	11.25	3.09	14.34	87	12.75	11.25	88	0.66	5	11.91	93	3.72	2.43	65	7.47	45	7.27	57	0.20	5
TOTAL	383.98	196.41	84.68	281.09	73	261.27	196.42	75	29.40	11	225.82	86	122.13	55.27	45	173.15	45	156.00	60	18.22	15

Source: PAHO

*Population in Millions

Figure 1

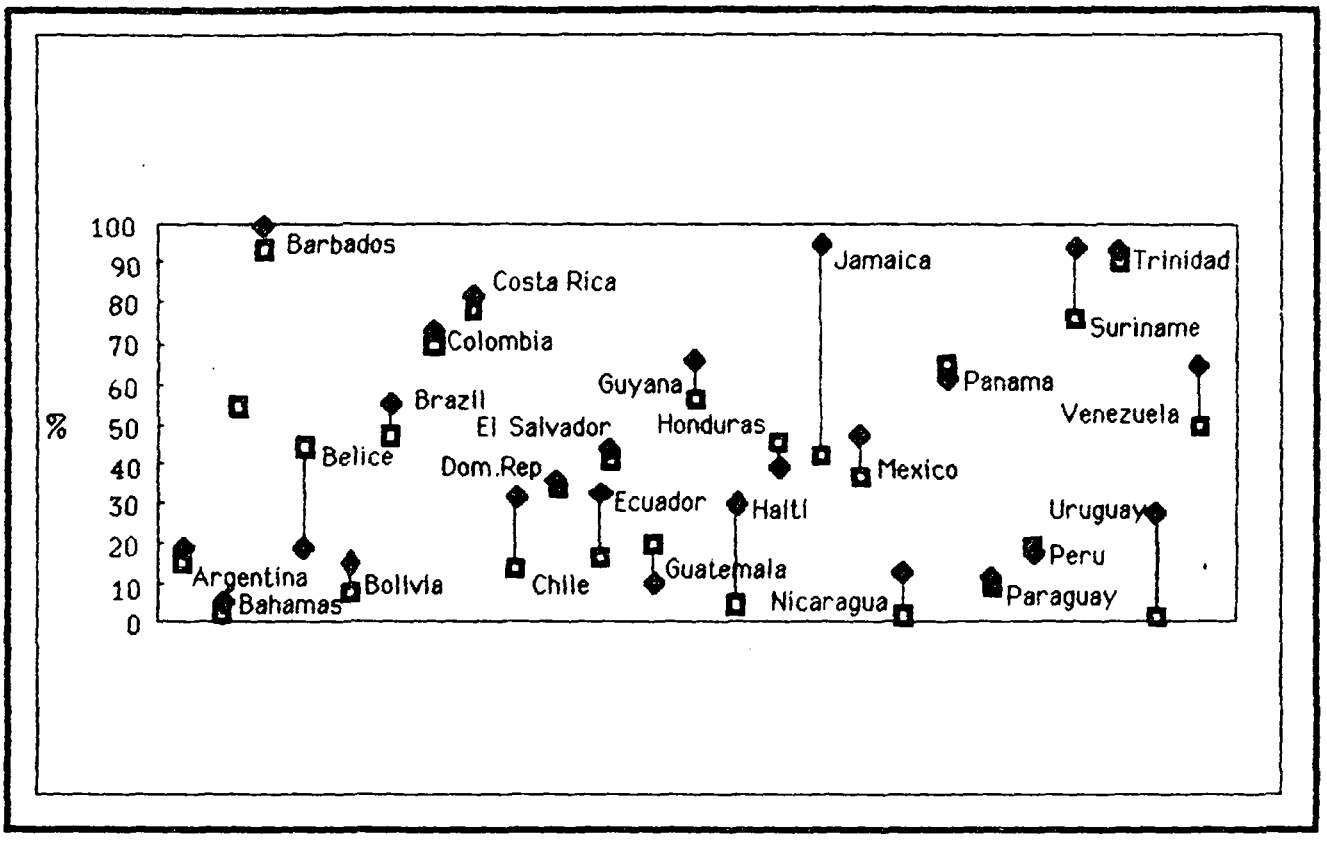
LATIN AMERICA AND THE CARIBBEAN: CHANGE IN TOTAL WATER SUPPLY COVERAGE, 1980 - 1985



Source: PAHO.

Figure 2

LATIN AMERICA AND THE CARIBBEAN: CHANGE IN RURAL WATER SUPPLY COVERAGE, 1980 - 1985



Source: PAHO.

(b) The significance of the negative economic climate

The 1980s began well for Latin America. Incomes reached their highest levels ever in 1980 and 1981. These peaks were followed by severe falls in economic activity and, in consequence, in levels of income (Table 3). Many countries of the region have yet to recuperate from this recession, the most severe since the 1930s. A serious effect of the recession has been the reduction of the rates of investment in most countries. Levels of investment have experienced a decline which is more than proportionate with the drop in gross domestic product at the

Table 3

PER CAPITA GROSS DOMESTIC PRODUCT, AT CONSTANT MARKET PRICES a/

	Dollars at 1980 prices										
Country	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	b/
Argentina	2694	2848	**2951**	2700	2519	2542	2565	2412	2523	2549	
Barbados	2726	2697	**3340**	3249	3057	3033	3120	3123	3275	3239	
Bolivia	686	**785**	766	749	708	645	622	595	562	556	
Brazil	1312	1639	2056	1941	1915	1827	1889	2001	2119	**2140**	
Colombia	925	1090	1265	1266	1251	1248	1268	1288	1335	**1376**	
Costa Rica	1205	1409	**1557**	1476	1328	1324	1388	1362	1383	1386	
Chile	2129	1777	2324	**2405**	2055	2010	2095	2110	2187	2266	
Dominican R	756	1021	1141	1158	1145	**1174**	1150	1098	1093	1143	
Ecuador	758	1206	1421	**1432**	1407	1350	1375	1401	1404	1323	
El Salvador	722	**824**	775	702	656	654	663	666	661	664	
Guatemala	856	978	**1128**	1107	1040	984	957	925	900	896	
Guyana	658	713	616	600	524	461	479	479	...	...	
Haití	180	196	**235**	225	213	211	208	205	203	202	
Honduras	548	561	**667**	650	615	592	584	575	566	572	
Jamaica	**1601**	1567	1216	1226	1207	1205	1188	1112	1120	1159	
México	1807	2099	2538	**2694**	2612	2443	2473	2478	2327	2299	
Nicaragua	977	**1068**	750	702	656	654	663	666	661	650	
Panamá	1378	1498	1766	1797	**1844**	1804	1758	1791	1806	1797	
Paraguay	767	951	1318	**1388**	1333	1253	1253	1263	1222	1237	
Perú	1066	1181	1190	**1210**	1182	1016	1038	1035	1090	1139	
Trinidad	3392	4175	**5390**	5349	5320	4757	4398	4215	...	...	
Uruguay	1790	1990	2415	**2434**	2174	2028	1989	1970	2085	2187	
Venezuela	**4695**	3598	3377	3243	3112	2861	2742	2648	2716	2686	
Average	1518	1761	**2045**	2012	1944	1852	1878	1901	1928	1937	

Source: ECLAC

a/ Figures in bold indicate peak levels of per capita income

b/ Preliminary estimate

beginning of the decade. Moreover, levels of investment have remained low in many countries. This decline is one of the consequences of the large transfers of resources involved in the payment of interest on the external debt.

It can be expected that the fall in the overall level of investment - to up to half what it was in the peak years at the beginning of the 1980s in many countries - has been felt in the water supply and sanitation sector. Moreover, it can be presumed that the drop in capital investment has affected not only the expansion of water supply and sewerage networks but also the maintenance of existing systems. Unfortunately, precise information on the effects of the recession on the levels of investment in the sector is not available, but the impact can be seen in a weakening of the impetus of expansion achieved in the 1970s in the population served. On the basis of the provision of counterpart funds to the loans of the InterAmerican Development Bank and the World Bank, PAHO has estimated that the overall investment in the first half of the Decade fell short of the original national targets by some US$ 4.5 billion. 6/

3. Lower-income groups and the Decade

It is feared that the lower income groups of the population have borne the brunt of the relatively poor performance of the sector. They form a large proportion of the population of the majority of the countries of the region and have in general been the major sufferers from the recession of the 1980s.

(a) Who are the poor?

Estimating the number of poor people is not easy. It is obvious that large numbers of the population of Latin America and the Caribbean are poor, even destitute. To go from this qualitative statement to a more precise estimate of the size and distribution of the poor has, however, rarely been attempted. There is in fact only one regional study based on comparative data and it provides information only for the period around 1970. 7/ In this study it is estimated that approximately 40 percent of the population of Latin America is poor in an absolute sense (Table 4). The people in this proportion of the population are incapable of satisfying their basic needs for food, shelter, clothing, health, education, etc. 8/ Some 20 percent of the population were estimated to be destitute, that is unable even to buy a minimum basket of foods.

The author of the study referred to was, however, able to provide estimates for a small group of countries only (Table 4); but the

countries accounted for more than 82 percent of the total population of the region - some 231 million people. The incidence of poverty shown by the study is depressing, particularly in the case of countries where half or more than half (65 percent in Honduras) of the population were unable to satisfy their basic needs.

Does this situation still exist now, almost 20 years after the study was carried out? Unfortunately, the answer would seem to be "yes". It may even be worse as there are indications that the distribution of income has worsened with the recession of the 1980s since per capita incomes have declined and unemployment has increased. In many countries per capita incomes are little or no higher than they were in the 1970s (Table 3). In Argentina, Bolivia, El Salvador, Guyana, Jamaica, Nicaragua and Venezuela, per capita incomes in 1986 were actually below the level at which they stood in 1970.

Table 4

ESTIMATES OF THE INCIDENCE
OF POVERTY IN SELECTED COUNTRIES AROUND 1970

	% of households below the poverty line			% of households below the destitution line		
	Urban	Rural	Total	Urban	Rural	Total
Argentina	5	19	8	1	1	1
Brazil	35	73	49	15	42	25
Colombia	38	54	45	14	23	18
Costa Rica	15	30	24	5	7	6
Chile	12	25	17	3	11	6
Honduras	40	75	65	15	57	45
Mexico	20	49	34	6	18	12
Peru	28	68	50	8	39	25
Uruguay	10	-----	-----	4	----	-----
Venezuela	20	36	25	6	19	10
Latin America	26	62	40	10	34	19

Source: Oscar Altimir, "The extent of poverty in Latin America", World Bank Staff Working Papers, No.522, Washington, 1982.

There is, in addition, more direct evidence that the distribution of income generally worsened during the 1970s and that the subsequent

recession would only have strengthened this trend. For example, in Argentina the share of the poorest half of the population declined from 25.1 percent to 21 percent of total income between 1970 and 1981. In none of the six countries for which such data is available for the two periods was there any improvement in the distribution of income over the last decade.

Moreover, it is a fact that in many countries the adjustment process is far from complete. It can be expected that with any increase in the levels of unemployment due to changes in economic structure will cause incomes to decline further and its distribution to become more regressive.

(b) Where do the poor live?

There is a lack of specific information for the region as a whole on the rural-urban distribution of poverty. In general, however it can be stated that although the majority of the lowest income groups is made up of urban dwellers, the poorest people are to be found living in the countryside. This assertion is supported by various partial studies. Two recent studies in Central America, for example, illustrate one of the major differences between rural and urban levels of living, even in poorer countries.9/ In Guatemala, 85 percent of the population with the highest rates of infant mortality - more than 120 deaths per 1,000 children under 2 years old - lives in rural areas, compared with 15 percent in urban areas and none in Guatemala City. In Honduras, a higher proportion of the urban population in a region not only is associated with a lower rate of infant mortality but was also accompanied by a more rapid decline in the death rate between 1960 and 1980 (Table 5).

In Latin America and the Caribbean, traditionally the poor have, in general, been more highly concentrated in rural areas. Not only has the rural population been poorer than the urban population, but income has been distributed more unequally.10/ The rise in unemployment accompanying the recession has largely been an urban phenomenon and has increased the numbers of urban poor to an unknown degree. The poorest groups within the population are still found in rural areas. One caveat must be made: in those countries with a lower incidence of overall poverty, the lot of the rural poor maybe be considerably ameliorated thanks to their own food production.

Table 5

HONDURAS: REGIONAL VARIATIONS IN INFANT MORTALITY, 1980

Region	% Urban Population	Infant Mortalility	% Decline 1960-1980
West	11.0	102	33
North	49.6	82	39
Central	28.5	91	33
South-central	58.9	63	46
South	22.6	84	37
Southeast	14.9	81	27
Northeast	32.0	87	31
East	...	75	32

Source: CELADE

(c) Have the poor benefited from the Decade so far?

It is not readily evident that the poor have benefited in any general or particular way from the water supply and sanitation programmes executed during the Decade so far. The statistics on the growth of coverage show only a marginal increase in the provision of services - even in drinking water supply - to the rural population. Moreover, much of that increase has benefitted the portion of the rural population living in larger villages. Statistics specifically relating to the provision of water supply and sewerage to the urban poor are not available, but the small expansion in the number of urban households with house connections for either water supply or sewerge would suggest that the poor have not clearly been provided with improved facilities.

There is much sporadic and indirect evidence that would support such a conclusion. The continuance of very high rates of infant mortality, altough dramatic reductions have been achieved in a few countries, such as Chile, Cost Rica and Cuba;11/ the few and isolated examples that can be cited of innovative supply practices;12/ the absence of significant change in the sector in recent years and other evidence all suggest a failure to reach out to the poorer sections of the population.

Moreover, it is generally reasonable to assume that in countries where half or more than half of the population lives in poverty, it is the poor households that are without drinking water and sanitation services. The higher income groups, given their levels of absolute

income, can satisfy their own needs should the public services fail to do so, but when such failure occurs the poor are left without service.

4. What can be done?

It is clear that if current trends continue, the national targets set at the beginning of the Decade will not be met. It is equally clear that the conventional approach to the provision of drinking water supply and sanitation will not achieve adequate water supply and sanitation for the poor. There is a need to give serious consideration to what can be done both to increase the rhythm of expansion of service, especially that provided to the lower income groups and to put the sector in a situation where it is less dependent on the ups and downs of the economy as a whole and of the public sector, in particular.

There appear to be four areas - sector administration, system management, tariffs, and technology - where innovation is needed. It is not meant to imply that it is possible to arrive at definitive proposals for the reform in such a short review. Rather, the proposals made here are intended to represent factors that need to be taken into account in any effort to improve the provision of service to the poor. The specific requirements for change in each area are beyond the scope of this paper, but it would seem that there is a general need for the following changes are:

(i) Greater administrative decentralization;
(ii) More businesslike system management;
(iii) The adoption of a tariff structure that will permit the generation of enough revenue to cover capital costs as well as operation and maintenance costs;
(iv) The wider use of cost-minimizing technology.

It is not suggested that any of these proposals are new. Such recommendations have been made before and there are examples of their application in various countries. They are, however, proposed again here as a reminder that the achievement of change is a complex process and requires multiple innovations. We are here to discuss only a few aspects of drinking water supply and sanitation and, in particular, the possibilities which exist for the use of certain low cost technologies for the improved provision of drinking water and sanitation to the poor. As necessary as such innovations are, they will not, and cannot of themselves result in better service unless they are accompanied by change in the other three areas mentioned. Technology has to be used in an appropriate environment, and an environment of the kind required is not commonly found in Latin America and the Caribbean at the moment. Perhaps this seminar can mark the beginning of the creation of a more propitious environment and the redirection of the

sector towards the satisfaction of the needs of all the people of the region.

5. Conclusions

The conclusions that can be drawn from this short review of the current state of the drinking water supply and sanitation sector halfway through the International Drinking Water Supply and Sanitation Decade are the following:

(i) Investment in drinking water supply and sanitation in most countries of the region has been seriously reduced by the general economic recession prevailing in Latin America and the Caribbean since 1981;

(ii) The effect of the reduced resources available to the sector has been to curtail both the expansion of services and the maintenance of existing systems;

(iii) The impact of the reduction of resources has been felt most severely by lower income groups;

(iv) There is, therefore, an urgent need to develop specific programmes to improve services to lower income groups;

(v) These special programmes should be built around cost minimizing technology so as to liberate them, as far as possible, from dependence on resources external to the sector.

Notes

1/ United Nations, Report on the United Nations Conference on Water, (Mar del Plata, 14-25 March 1977), New York.

2/ Pan American Health Organization, Environmental Health Programme, International Drinking Water Supply and Sanitation Decade: Regional progress report, Environmental Health Series No.6, Washington, 1987, p.5.

3/ ibid

4/ United Nations, Economic Commission for Latin America and the Caribbean, Drinking water supply and sanitation in Latin America, 1981-1990, Estudios e Informes de la Cepal, No.25, p.91.

5/ ibid

6/Pan-American Health Organization, op.cit, p.7.

7/ Oscar Altimir, "The Extent of Poverty in Latin America", World Bank Staff Working Papers, Number 522, Washington, 1982, 111pp.

8/ The definition of poverty used was based on the ability to purchase a minimum basket of food. A separate basket was defined for each country included in the study. That proportion of the population

whose income did not permit the purchase of two baskets was defined as poor. People who could not purchase even one basket were defined as destitute.

9/ United Nations, Latin American Demographic Centre, Guatemala: Diferencias socioeconómicas de la mortalidad de los menores de dos años, 1968-1976, Santiago, Chile, 1984, and United Nations, Latin American Demographic Centre, Mortalidad infantil: Los riesgos de muerte infantil en diferentes contextos sociales y geográficos, 1955-1985, encuesta demográfico nacional de Honduras, Vol.5, Serie A.1047/V, San José, Costa Rica, January, 1988.

10/ Altimir, Op.cit, p.85

11/ See José Miguel Guzmán and Hernan Orellana, "Mortalidad infantil, neonatal y posneonatal en algunos paises de America Latina", Notas de Población, No.44, August, 1987, pp.31-66 for an analysis of the reductions achieved.

12/ See the discussion for example, Tim Campbell, "Water supply and waste disposal to low-income urban settlements in Latin America and the Caribbean", a paper presented at the Regional Symposium on Drinking Water Supply and Sanitary Disposal of Excreta in Urban Slum Areas, held in Santiago, Chile, from 5 to 9 November, 1984.