**Information Systems**

81. The efficiency, effectiveness, and impact of the systems and services depends on being able to have information that is pertinent, reliable, timely, and regularly updated. The functions and systems of planning, administration, operation, maintenance, and the like require information about installations, resources, costs, rates, finances, beneficiaries, etc. The proposal includes equipment for the processing of information as well as for the installations and physical elements needed at all levels of registration and processing. In the case of drinking water, allowance has been made for the installation of macro and micro flow meters.

82. The total proposed investment comes to approximately US$ 2.56 billion, which represents 51.6% of the component and 1.2% of the Regional Plan.

**Facilities for Decentralized and Participatory Management**

83. In order for it to be efficient and effective, decentralized and participatory management requires technological tools for communication and administrative and economic management both at the decentralized levels and, even more important, at the central and intermediate levels. This will ensure that national direction is not lost and that there is no pretext for a return to bureaucratic and inefficient centralism.

84. The total proposed investment comes to approximately US$ 230 mllion, which represents 4.6% of the component and 0.1% of the Regional Plan.

**Development of a Critical Mass of Human Resources**

85. The formation and development of human resources with a view to achieving a critical mass in the systems and services that will guarantee fulfillment of all the investment plans--an ongoing task--will require initial impetus at all levels, including investments for training (both recycling and regular updating), reorientation of resources, and the transfer of information, knowledge, and skills to individuals.

86. The total proposed investment comes to approximately US$ 830 million, which represents 16.7% of the component and 0.4% of the Regional Plan.

**Facilities for Supervision and Advisory Services**

87. Among the important subjects for investment are the necessary inputs for transportation, communications, and monitoring in order to perform the tasks of advisory services and supervision, especially at the national, regional, and local levels of the formal institutional system.

88. The total proposed investment comes to approximately US$ 1.34 bllion, which represents 27.0% of the component and 0.6% of the Regional Plan.

**5) SCIENCE AND TECHNOLOGY**

89. Basic and applied research and

adaptation of technology are elements that support the process of system reformulation. Accordingly, the Plan proposes to encourage the development of these elements and to improve the conditions under which research is carried out. It is expected to strengthen ties between science and technology, on the one hand, and the national and/or regional productive sectors, on the other, with a view to orienting scientific production so that it is more closely in alignment with real demands.

90. Hence priority is being given to the adaptation of technology in accordance with the orientations for the reform of the systems, as well as support for basic research.

91. The total proposed investment comes to approximately US$ 1.62 bllion, which represents 0.75% of the total for the Regional Plan.

TABLE 14
SCIENCE AND TECHNOLOGY

| Category | Amount | Percentage |
|---|---|---|
| TOTAL | 1,620 | 100.00 |
| Adaptation of Technology | 1,420 | 87.6 |
| Basic Research | 200 | 12.4 |

## Adaptation of Technology

92. The adaptation and development of technology in the environmental field refers to the problem of solid waste, the treatment of municipal and industrial wastewater, the solution of environmental problems in marginal urban areas, recycling and reduction of waste, technology for economizing water, substitution of inputs or products used in the industrial process, recovery and utilization of by-products, etc. The area of direct health care for the population includes the development of simplified technologies for the early diagnosis of prevalent diseases, particularly those that are infectious/contagious, water-borne, and conditioned by poverty; the development of alternative types of care that will reduce the number of hospitalizations and shorten hospital stays; the introduction of changes in the functional architecture of health establishments in order to facilitate their new roles in a decentralized and participatory system; etc.
It is proposed to support and strengthen existing capacity in specialized institutions at both the national and regional levels.

93. The total proposed investment comes to approximately US$ 1.42 bllion, which represents 87.6% of the component and 0.65% of the Regional Plan.

## Support for Basic Research

94. It is proposed to give initial impetus both to the development of basic research and to the process of training researchers in academic centers of excellence. The continuity of this impetus would come under the responsibility of the education sector and the national institutions for the promotion of science and technology.

95. The total proposed investment comes to approximately US$ 200 mllion, which represents 12.4% of the component and 0.1% of the Regional Plan.

## 6) SPECIAL AREAS

96. The investments in the five previous components are designed to support comprehensive health care for the benefit of the great majority of the population in Latin America and the Caribbean area. They cover nearly all the fields and areas related to the health problems that are most prevalent and have the greatest negative impact on the social groups which are most in need. However, there are critical areas that must be promoted, strengthened, and prioritized in a spirit of affirmative action.

97. Priority has been given to the promotion of grass-roots social organizations; women; maximization of the potential of the Indian peoples in the Americas; urgently needed improvements in the pockets of extreme poverty in large urban metropolises and the more severely depressed rural areas; conditions in the workplace; disinfection of water supplies that currently fail to meet minimum standards of bacteriological quality; and the imperative need to control certain prevalent diseases.

98. The total proposed investment comes to approximately US$ 4 billion, which represents 1.85% of the total for the Regional Plan.

TABLE 15
SPECIAL AREAS

| Category | Amount | Percentage |
|---|---|---|
| TOTAL | 4,000 | 100.00 |
| Grass-Roots Organiz. | 300 | 7.5 |
| Woman | 250 | 6.2 |
| Indian Peoples | 250 | 6.2 |
| Groups in Extreme Poverty | 300 | 7.5 |
| Workers' Health | 200 | 5.0 |
| Disease Control | 2,550 | 63.8 |
| Water Disinfection | 150 | 3.8 |

### Promotion of Grass-Roots Social Organizations

99. The feasibility, efficiency, and effectiveness of the model proposed in the Regional Plan depend on a special effort to promote grass-roots social organizations. These organizations have a fundamental role in self-care and its articulation with the integrated local health systems; in the functional integration of systems for protection and control of the environment and for direct health care; and in the reformulation of local governments as a step toward modernization of the State.

100. The total proposed investment comes to approximately US$ 300 million, which represents 7.5% of the component and 0.14% of the Regional Plan.

### Women in Health and Development

101. Women play a major role in health and development. They are in fact agents of health, as well as key elements in self-care. The presence of women in grass-roots social organizations has been decisive in the emergence of these groups as new means of

survival and development.

102. The total proposed investment comes to approximately US$ 250 million, which represents 6.2% of the component and 0.11% of the Regional Plan.

**Indian People**

103. For historical, cultural, ethnic, and economic reasons, the population groups corresponding to Indian peoples have harbored pockets of poverty and discrimination. At the same time, these peoples have tremendous positive potential to offer, since they owe their very survival to the conservation of their values of solidarity and equity. The Inter-American Indian Institute has made progress toward creating the conditions for the effective utilization of investment resources and has prepared proposals and concrete projects based on the same lines of orientation as those contained in the Regional Plan.

104. The amount of the proposed investments is on the order of the US$ 250 million. It represents 6.2% of the component and 0,11% of the Regional Plan.

**Groups Living in Extreme Poverty**

105. It is essential to accelerate the improvement of living and health conditions for those who reside in urban shantytowns and the more severely depressed rural areas. Accordingly, special investments are needed for these groups.

106. The total proposed investment comes to approximately US$ 300 million, which represents 7.5% of the component and 0.14% of the Regional Plan.

**Workers' Health**

107. Workers' health is an area which in the past has failed to receive indispensable investments for the improvement of conditions in the workplace. This is an area that deserves special consideration because it is one in which investments will have an extraordinary economic impact, especially on the resource economy, once actions aimed at prevention and promotion are taken. Ergonomic planning of the workplace helps to prevent accidents and diseases that are very costly for companies and social security systems (specialized medical care, prolonged hospitalization, the passive costs of incapacity, disability, death, etc). Since the National Investment Plans must be the responsibility of society as a whole, it is felt that the private commercial sector must be able to finance investment proposals in this area to a large degree, or at least be able to facilitate their financing.

108. The total proposed investment comes to approximately US$ 200 million, which represents 5.0% of the component and 0.1% of the Regional Plan.

**Disease Control**

109. The investments proposed for the control of certain specific diseases deserve special consideration.

One of these categories is diseases preventable by vaccines. The cost of developing and producing these preparations is high, and sometimes this type of

investment is not sufficiently attractive to companies in the biologicals industry, or it may be out of the question for research centers, even in industrialized countries. Yet the cost-benefit of these investments can be extraordinary.

Similarly, there are other diseases which, because of their epidemiological characteristics, do not offer sufficient economic incentive to warrant investigating, developing, and producing the diagnostic and therapeutic bases that are required for mass decentralized use.

In addition, there is the broad area of diseases conditioned by socioeconomic factors such as poverty for which the availability of adequate means of treatment can prevent subsequent resort to care at high levels of complexity, with considerable savings in the corresponding operating expenses.

Also proposed are mechanisms that will contribute to the reorientation of control measures for the major endemic diseases in light of current knowledge, which will require initial investments to permit continuity in the control of these diseases.

110. The total proposed investment comes to approximately US$ 2.55 billion, which represents 63.8% of the component and 1.18% of the Regional Plan.

**Water Disinfection**

111. Water supplies that fail to meet minimum standards of bacteriological quality is a problem that demands to be addressed on an urgent basis. In addition to the efforts that the countries need to undertake in the medium and long term (to build, rehabilitate, and correctly operate their disinfection plants), it is important to establish a short-term (3-year) disinfection program in both urban and rural areas with participation by the community and the laboratories responsible for control.

112. The total proposed investment comes to approximately US$ 150 million, which represents 3.8% of the component and 0.07% of the Regional Plan.

## 7. TOTAL INVESTMENTS PROPOSED

113. The total investments proposed for the Regional Plan in this first approximation--including financing costs--is on the order of US$ 216,700 million.

## TABLE 16
## TOTAL INVESTMENT BY COMPONENTS AND FINANCING COSTS
(in millions of 1990 US$)

| INVESTMENT COMPONENTS | AMOUNT | % |
|---|---|---|
| **TOTAL INVESTMENT** | **216,700** | **100** |
| 1. ENVIRONMENT | 114,830 | 53.0 |
| Rehabilitation | 16,230 | 7.5 |
| Extension | 98,600 | 45.5 |
| 2. Direct health care | 64,480 | 29.7 |
| Rehabilitation | 16,970 | 7.8 |
| Extension | 47,510 | 21.9 |
| 3. PREINVESTMENTS | 1,200 | 0.6 |
| 4. INSTITUTIONAL DEVELOPMENT | 4,960 | 2.3 |
| 5. SCIENCE AND TECHNOLOGY | 1,620 | 0.75 |
| 6. SPECIAL AREAS | 4,000 | 1.85 |
| INTEREST[1] | 25,610 | 11.8 |

[1] Interest on the total for all the components.

### C) RECURRENT COSTS AND FINANCING

### 1. Financing Costs

114. Since internal financing comes from multiple sources, including the Governments' fiscal deficit, income from taxes, loans, etc., and since information is not available on the degree to which these various sources finance spending on health and the environment, no estimate has been made of the cost of internal financing. External financing is subject to various interest rates. An analysis of the possible financing structure by source and type gives, as an initial estimate, an annual weighted average of about 7.5%.

## TABLE 17
## CAPITAL COSTS (1993--2004)
**(in millions of 1990 US$)**

| TYPE OF INFRASTRUCTURE | CAPITAL COSTS[1] | | |
|---|---|---|---|
| | Amortization | Interest | Total |
| **GRAND TOTAL** | **4,660** | **24,030** | **28,690** |
| SUBTOTAL FOR THE ENVIRONMENT | 3,420 | 16,120 | 19,540 |
| DRINKING WATER AND SEWERAGE | 2,260 | 10,650 | 12,910 |
| WATER POLLUTION | 930 | 4,400 | 5,330 |
| SOLID WASTE | 230 | 1,070 | 1,300 |
| SUBTOTAL FOR HEALTH CARE | 1,240 | 7,910 | 9,150 |
| SELF-CARE | 120 | 750 | 870 |
| HEALTH POSTS AND CENTERS | 60 | 410 | 470 |
| HOSPITALS | 1,060 | 6,750 | 7,810 |

[1] Estimated only for financing from external sources, which represents 30% of total investments in physical infrastructure. Interest rate of 7.5% payable in 20 years including a 5-year grace period. The cost indicated is only for the period 1993-2004.

### 2. Recurrent Costs

115. The burden of recurrent investment costs during the period of the Plan and thereafter has been considered a very important factor throughout the preparation of this proposal. The reforms to the systems, the types and forms of investments selected, and other technical aspects have a significant bearing on the burden of recurrent costs. In addition, repeated comments have been made on the importance of preventive maintenance and timely replacement so that the value of the investments is not lost and the services can continue to operate efficiently and effectively.

TABLE 18
OPERATING COSTS (1993–2004)
(in millions of 1990 US$)

| TYPE OF INFRASTRUCTURE | OPERATING COSTS | | |
|---|---|---|---|
| | Operation and Maintenance | Depreciation | Total |
| GRAND TOTAL | 109,870 | 34,930 | 144,800 |
| SUBTOTAL FOR THE ENVIRONMENT | 26,560 | 21,430 | 47,990 |
| DRINKING WATER AND SEWERAGE | 11,300 | 13,280 | 24,580 |
| WATER POLLUTION | 7,830 | 6,100 | 13,930 |
| SOLID WASTE | 7,430 | 2,050 | 9,480 |
| SUBTOTAL FOR HEALTH CARE | 83,310 | 13,500 | 96,810 |
| SELF-CARE | 5,180[1] | 4,680 | 9,860 |
| HEALTH POSTS AND CENTERS | 10,390 | 1,070 | 11,460 |
| HOSPITALS | 67,740 | 7,750 | 75,490 |

[1] In addition to this monetary cost, there is a non-monetary cost represented by volunteer work or contributions which is estimated at US$ 29.35 billion.

## D) FINANCING

116. In order to meet current deficits and at the same time keep up with population growth through the year 2004, it will be necessary to have an ongoing process for matching up technically justified proposals with economically feasible funding. This process usually occurs in a relatively asymmetric context, since the needs and demands are by definition much greater than the availability of resources, especially financial resources. Proposals and financing must also be politically viable.

In the preparation of this first approximation of the Regional Plan, the process has been carried out in parallel: on the one hand, the needs and deficits have been studied, as well as proposals that respond to the orientations for reform, and, on the other hand, amounts have been estimated and possible sources of funding have been suggested. In addition, some exercises have been undertaken to analyze economic feasibility.

117. Three different sources of financing were studied:

a) Internal financing, including the private sector and possible self-financing and cost recovery schemes;

b) External financing, including multilateral, bilateral, public and private, concessional and non-concessional; and

c) Conversion of external debt.

### 1) INTERNAL FINANCING

118. Per capita expenditures and investments in drinking water and sanitation and in health services (public sector, social security, and private sector) declined during the 1980s relative to previous decades. During that same period, per capita GDP in Latin America and the Caribbean also

experienced a decline.

As a consequence of the economic adjustment measures introduced in the countries, it is estimated that in the 1990s, and even more so in the first years of the new millenium, the aggregate GDP for Latin America and the Caribbean will see an increase estimated today at an annual average of 4.2%. In these circumstances, it is considered that it is by no means exaggerated, much less out of the question, to assume that during the period 1993-2004 it will be possible to return to 1970s levels of per capita spending and investment. Accordingly, it is feasible to estimate that during the 12 years of the Plan there may be internal financing on the part of the countries and from various sources amounting to 0.82% of the aggregate GDP for the countries of Latin America and the Caribbean.

119. Annex V presents the methodology and the assumptions used in order to calculate internal or national financing. This would come from four principal sources:

a) The public sector, including the Ministries of Health, other ministries and institutions, and public companies and agencies that invest in protection and control of the environment and health care for the population;

b) Social security systems, institutions, and agencies, for the part that refers to health services;

c) The private sector, including business enterprises, volunteer organizations, etc., which invest in environment and health; and,

d) Self-financing, based on cost recovery systems that are designed with both economic purposes and social goals in mind.

120. On the basis of projected investment patterns for each of those sources, it is possible to estimate a total amount for internal financing for the period 1993-2004 on the order of US$ 143.5 billion.

TABLE No. 19
INTERNAL FINANCING BY SOURCES (1993-2004)
(in millions of 1990 US$)

| Source | Amount | % GDP of ALC |
|---|---|---|
| Total | 143,500 | 0.82 |
| Public Sector[1] | 70,000 | 0.40 |
| Social Security | 26,250 | 0.15 |
| Private Sector | 29,750 | 0.17 |
| Self-financing | 17,500 | 0.10 |

[1] Ministries of Health and Institutions of Sanitation and Environment.

## 2) EXTERNAL FINANCING

121. According to World Bank projections, GDP in the industrialized countries is expected to increase during 1993-2004 by an average of 3% each year. From this it may be assumed that it is also possible to return to the levels of lending that the industrialized countries extended to Latin America and the Caribbean during the 1970s for water supply and sanitation and health services.

External financing is granted bilaterally or through multilateral systems or mechanisms. In both cases the disbursements are made under "Official Aid for Development" (OAD) and so-called "Other Disbursements." The OAD route is used for "concessional" credits at very low

interest rates which are payable over long periods and have a several years' grace period. Other disbursements are "non-concessional," representing loans that are usually at near-market interest rates and payable in 10 or 20 years with shorter grace periods.

122. The projections of possible external financing, by form and modality, were estimated first with respect to the GDP of industrialized countries and then calculated relative to percentages of GDP for Latin America and the Caribbean. On this basis, external financing is estimated to be on the order of US$ 63 billion.

TABLE 20
EXTERNAL FINANCING, BY SOURCE AND MODALITY (1993-2004)
(in millions of 1990 US$)

| Source and Modality | Amount | % GDP[1] |
|---|---|---|
| Multilateral | 31,500 | 0.18 |
| Bilateral | 31,500 | 0.18 |
| **Total Sources** | **63,000** | **0.36** |
| Non-concessional | 53,700 | 0.31 |
| Concessional | 9,300 | 0.05 |
| **Total Modalities** | **63,000** | **0.36** |

[1] Conversion to percentage of aggregate GDP for the countries of Latin America and the Caribbean.

123. If the industrialized countries were to meet the commitment that they themselves assumed several decades ago to contribute 0.7% of their GDP for cooperation with the developing countries, the 1970s levels of lending and donations would be doubled. At present only Denmark, France, Norway, the Netherlands, and Sweden have met or surpassed this target.

124. It has been virtually impossible to make a serious estimate of the contributions that could be expected from nongovernmental organizations (NGOs) as sources of external financing. It is known that in the industrialized countries both the governments and the private sector contribute to the financing of the NGOs, but there is no way of determining how much is included in the calculations above. Information is lacking on NGO expenditures for water, sanitation, and health services.

### 3) CONVERSION OF EXTERNAL DEBT

125. So far only one country in Latin America and the Caribbean has elected to convert its external debt for investments in health, drinking water supply, and sanitation, with very small amounts that represent only 0.085% of its long-term external debt (see Annex V).
If 0.25% of the external debt of Latin America and the Caribbean could be converted into investments in environment and health, the resulting financing could amount to as much as US$1.1 billion for the period 1993-2004. A possible mechanism might be an arrangement with the Club of Paris to reduce interest rates on public debt in exchange for a commitment from the Governments to invest the equivalent of that reduction in priority areas proposed in the present Regional Plan.

### 4) TOTAL POSSIBLE FINANCING

126. The study of all the sources of financing leads to the conclusion that for the period 1993-2004 an aggregate amount on the order of US$ 207.6 billion would be

feasible.

TABLE 21
TOTAL POSSIBLE FINANCING BY MAJOR SOURCES (1993-2004)
(in millions of 1990 US$)

| Sources | Amount | % of GDP for LAC |
|---|---|---|
| Internal | 143,500 | 0.82 |
| External | 63,000 | 0.36 |
| External Debt Conversion | 1,100 | 0.006 |
| Total | 207,600 | 1.186 |

## SENSITIVITY ANALYSIS

127. One hypothesis would propose not only to recover 1970s levels of investment but also to compensate for what was failed to be invested in the 1980s. Another hypothesis would assume that the growth of GDP in Latin America and the Caribbean for the period 1993-2004 would only average 3% a year instead of the 4.2% figure adopted in the proposal. In the first case the possible financing would come to about US$234.5 billion. In the second case it would be reduced to approximately US$191.7 million.

***The lending multilateral institutions are interested in participating more aggressively in social development. There are agreements and proposals for the establishment of certain targets–in terms of channeling specific percentages of their credits–for social projects.***

***It is therefore appropriate to suggest that multilateral and bilateral international funding agencies and the industrialized countries assume a commitment that is not far from their possibilities. They should make a commitment to apply at least 20% of their financial cooperation resources for Latin America and the Caribbean to projects for protection and control of the environment and direct health care for the population.***

# Chapter IV

## STRATEGY OF ACTION

***The Regional Plan for Investment is the initial proposal for promoting a process in the countries of Latin America and the Caribbean. Its aim is to facilitate the definition of common purposes and concrete actions with a view to achieving, in the areas of protection and control of the environment and direct health care for the population, the principles of universality, solidarity, and equity. It is a process that will be carried out at the national level and will be the inalienable responsibility of the countries themselves.***

### A Political Commitment

1. The Regional Plan for Investment, as a strategy and frame of reference that will guide the formulation of the National Plans of Investment, should be the expression of a firm political commitment on the part of the countries of Latin America and the Caribbean. This commitment cannot be limited to the Governments. The magnitude of the proposal and the effort that it will require will make it necessary to seek all possible forms and means of building a solid and stable base of political support.

### Building Political Support in the Countries

2. It is indispensable to achieve the active participation of all those who make up the national society in each country, while at the same time promoting, facilitating, and strengthening such participation through joint action by all the countries.

The Pan American Health Organization and the international development and lending agencies, institutions, and organizations which have some link to the areas of protection and control of the environment and direct health care for the population should contribute effectively to the formation and consolidation of this base of political support.

### Strategic Actions

3. The Regional Plan of Investments must be developed with the direct participation of the countries and other international cooperation agencies.

This first version will serve as a foundation for the initial political commitment, on the basis of which a set of strategic actions can be designed and carried out. Some of these actions are discussed below.

### The National Plans of Investment

4. The National Plans of Investment will be a concrete expression of the countries' political commitment. They will constitute a strategic action that will further the process. They will also strengthen and contribute to achievement of the objectives of the Regional Plan for Investment. The National Plans will make it possible to adapt, where necessary, existing investment proposals or formulate new ones that respond to the orientations and priorities. It is essential to begin developing national capacities in the countries for the formulation of these Plans and the subsequent development of concrete projects.

### Institutional Development and Preinvestment

5. Institutional development is an area of action in which the countries can get started immediately by rechanneling and/or strengthening the resources that at present are being utilized for training activities, improvements in managerial systems, etc.

The preinvestment component of the Regional Plan also includes actions aimed at guiding institutional development.

### Regional Preinvestment Fund

6. In order for the countries to be in a position to implement the Regional Plan, they need to initiate, as soon as possible, several processes at the national level. These include sectoral analysis, training, the formulation of policies to guide the reform of systems and institutions, and the preparation of a National Plan of Investment, the development of concrete projects, etc.

It will then be necessary to activate mechanisms that will ensure that this first phase is indeed carried out. An indispensable and urgent instrument is the creation of a Regional Preinvestment Fund, made up of multiple contributions from the countries in the Region and donors outside the Region. This mechanism could be designed and overseen by the Pan American Health Organization.

### Orientations for Reform

7. The countries can assume, as early as possible, the responsibility for making the Regional Plan for Investment viable through actions aimed at achieving the commitment and mobilization of the most significant and important participants in their national political circles. The objective is for the content of the orientations to become a consensual component of a National Project in each country. The orientations for reform outlined in this proposal should be debated at the national level by all sectors of public opinion and, especially, by the grass-roots organizations. Only in this way will they have the political viability and indispensable continuity that is required by undertakings of such scope and duration.

### Creation of National Commissions

8. Multisectoral and representative National Commissions should be created, as should technical teams. Their purpose, inter alia, would be to complete, correct, and/or refine the information utilized for the preparation of this first version of the proposal; carry out various studies; confirm the validity of certain referential assumptions, criteria, and standards; and analyze the feasibility of the Regional estimates of internal financing. Regional and subregional meetings for the purpose of exchanging experiences and information and seeking international support for national efforts would facilitate and strengthen the work of the National Commissions.

**Building on Existing Activities**

9. The countries are already carrying out activities that are related to the proposed Regional Plan. These should be taken advantage of, either by reorienting them, when necessary, or by intensifying and expanding them, if this is strategically more expedient. It is not a question of starting from scratch or waiting until the National Plans are completely formulated. The minimum needs that must be met have already been identified and it is urgent to respond without delay.

**A Support Alliance**

10. To complement the actions at the national level an alliance of international cooperation agencies and institutions should be formed. In this way it will be possible to provide the countries with the technical assistance that will to enable them to achieve the objectives outlined above, while at the same time channeling and/or facilitating the financing needed immediately for preinvestment and the development of the components or subcomponents of the Regional Plan.

The magnitude and implications of the Plan, the political commitment required from the countries, and the formation of this alliance are factors that will make it necessary to formulate new strategies of support for the countries and redefine the roles that should be played by international cooperation.

***In the face of the different crises affecting the countries of Latin America and the Caribbean, there is a moral duty to respond with proposals that correspond to the magnitude of the problems. These crises offer the opportunity to promote and facilitate changes and reforms that are urgently needed and must no longer be put off.***

***In these circumstances, the Governments and all segments of society in the countries of the Region, the international agencies, and the industrialized countries should act together. A solution must be found to social problems that are currently affecting millions of people in this part of the world--problems such as malnutrition, environmental conditions that make it impossible for people to attain even a minimum standard of living, and lack of access or failure to use the simple and low-cost technologies that are available. A way must be found of preventing people from dying unnecessarily and prematurely.***

***Nevertheless, it is not just the lives of these hundreds of millions of people that are at stake but the values that will form the basis for the construction of a universal society in which peace will prevail, the prerequisites for which are solidarity and justice.***

# ANNEX I

## POPULATION AND ACCESS TO DRINKING WATER SERVICES AND SANITATION LATIN AMERICA AND THE CARIBBEAN, 1992 and 1993 - 2004 (population in millions)

| CATEGORIES | 1992 | | | 2004 | 1993 - 2004 | | |
|---|---|---|---|---|---|---|---|
| | Total | Assumed to be Served | Assumed to be Unserved[1] | Total | Population Increase | To be served during the period | Population to be Served under the Plan |
| URBAN DRINKING WATER | 333.3 | 266.5 | 66.8 | 427.8 | 94.5 | 161.3 | 145.4 |
| Urban | 216.6 | 199.1 | 17.5 | 278.1 | 61.4 | 78.9 | 71.2 |
| Urban Fringe | 116.7 | 67.4 | 49.3 | 149.7 | 33.1 | 82.4 | 74.2 |
| URBAN SEWERAGE | 333.3 | 246.7 | 86.6 | 427.8 | 94.5 | 181.1 | 158.0 |
| Urban | 216.6 | 197.4 | 19.2 | 278.1 | 61.4 | 80.6 | 70.5 |
| Urban Fringe | 116.7 | 49.3 | 67.4 | 149.7 | 33.1 | 100.5 | 87.5 |
| RURAL DRINKING WATER | 126.2 | 66.9 | 59.3 | 121.2 | (5.0) | 54.3 | 27.4 |
| SEWERAGE AND EXCRETA DISPOSAL IN THE RURAL ENVIRONMENT | 126.2 | 37.9 | 88.3 | 121.2 | (5.0) | 83.3 | 55.0 |
| WATER CONTAMINATION | | | | | | | |
| Municipal Drains | 333.3 | 33.3 | 300.0 | 427.8 | 94.5 | 394.5 | 188.0 |
| Industrial Wastewater | | | | | | | 175.0[2] |
| SOLID WASTES | 333.3 | 233.3 | 100.0 | 427.8 | 94.5 | 194.5 | 152.0 |
| COLLECTION | | | | | | | |
| Urban | 216.6 | 205.8 | 10.8 | 278.1 | 61.4 | 72.2 | 62.4 |
| Urban Fringe | 116.7 | 27.5 | 89.2 | 149.7 | 33.1 | 122.3 | 89.6 |
| FINAL DISPOSAL | 333.3 | 100.0 | 233.3 | 427.8 | 94.5 | 327.8 | 285.0 |

[1] The term "Assumed to be Unserved" includes the population currently without service plus the population that is being served but suffers from interruptions and unreliability of service.

[2] This table includes the population equivalent of the contamination of water of industrial origin measured in terms of biochemical oxygen demand utilized for the estimate of the corresponding investments.

SOURCES: Evaluation of the International Decade of Drinking Water and Sanitation 1981-1990; Sept. 1990 Pan American Health Organization.
Other Sources: IBRD, IDB, EPLAC, CELADE, PAHO, etc.

# ANNEX II

## POPULATION AND ACCESS TO DIRECT HEALTH CARE SERVICES, LATIN AMERICA AND THE CARIBBEAN, 1992 and 1993 - 2004
## (Population in Millions)

| CATEGORIES | 1992 | | | 2004 | 1993 - 2004 | |
|---|---|---|---|---|---|---|
| | Total | COVERAGE | | Total | Population Increase | Supply of Access under the Plan[2] |
| | | Assumed to have Access[1] | Assumed not to have Access | | | |
| **TOTAL** | **459.5** | **298.3** | **161.2** | **549.0** | **89.5** | **255.7 *** |
| URBAN | 333.3 | 254.1 | 79.2 | 427.8 | 94.5 | 173.7 |
| Urban | 216.6 | 184.1 | 32.5 | 257.7 | 41.1 | 73.6 |
| Urban Fringe | 116.7 | 70.0 | 46.7 | 170.1 | 53.4 | 100.1 |
| In Capital Cities | 73.9 | 62.8 | 11.1 | 93.2 | 19.3 | 30.4 |
| In LUCs > 1'** | 74.0 | 59.3 | 14.7 | 93.8 | 19.8 | 34.5 |
| Other Urban Areas | 185.4 | 132.0 | 53.4 | 240.8 | 55.4 | 108.8 |
| RURAL | 126.2 | 44.2 | 82.0 | 121.2 | (5.0) | 82.0 * |

1 Assumptions: 85% of the urban population, 60% of the urban fringe population, and 35% of the rural population is assumed to have access. This signifies an access of 64.9% for the total population, which is a conservative figure, since most of the estimates indicate that between 35% and 40% of the population lacks access to permanent health services.

2 Sum of the population assumed to be without access and the population increase expected for 1993-2004.

* Does not add up horizontally. ** Large Urban Conglomerations of more than one million inhabitants.

Sources: World Urbanization Prospects U.N. 1990.
Various estimates from UNDP, IBRD, IDB, CEPALC, PAHO, etc..

# ANNEX III

## INVESTMENTS IN PHYSICAL INFRASTRUCTURE OF THE ENVIRONMENT, 1993 - 2004
## POPULATION TO BE SERVED AND INVESTMENT COSTS
## (population in millions, in terms of 1990 dollars)

| CATEGORIES | TOTAL | POTABLE WATER URBAN | SEWERAGE URBAN | POTABLE WATER RURAL | SEWERAGE RURAL | WASTE TREATMENT | | SOLID WASTES | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | MUNICIPAL | INDUSTRIAL | REFUSE COLLECTION | REFUSE DISPOSAL |
| **POPULATION TO BE SERVED (in millions)** | | | | | | | | | |
| **TOTAL** | | **145.4** | **158.0** | **27.4** | **55.0** | **188.0** | **175.0 *** | **152.0** | **285.0** |
| URBAN | | 145.4 | 158.0 | 27.4 | 55.0 | 188.0 | 175.0 | 152.0 | 285.0 |
| Urban | | 71.2 | 70.5 | | | | | 62.4 | |
| Urban Fringe | | 74.2 | 87.5 | | | | | 89.6 | |
| RURAL | | | | 27.4 | 55.0 | 188.0 | – | – | 285.0 |
| **INVESTMENT COSTS (billions US$)** | | | | | | | | | |
| **TOTAL** | **114.83** | **35.58** | **33.06** | **3.72** | **3.24** | **16.57** | **15.04** | **7.62** | |
| Rehabilitation and re-equipping | 16.23 | 8.8 | 4.62 | .45 | .27 | 1.53 | ** | .56 | |
| New works to cover current deficits | 65.945 | 11.09 | 13.735 | 3.27 | 2.97 | 15.04 | 15.04 | 4.8 | |
| New works to respond to population growth | 32.655 | 15.69 | 14.705 | – | – | – | – | 2.26 | |

* Population equivalent measured in terms of biochemical oxygen demand.

** No information available.

**ANNEX IV**

## INVESTMENTS IN PHYSICAL INFRASTRUCTURE OF DIRECT HEALTH CARE FOR THE POPULATION, 1993 - 2004 PHYSICAL WORKS (in thousands) AND INVESTMENT COSTS (in billions)

| CATEGORIES | Total | Self-care | Health Posts | Health Centers | Hospitals * |
|---|---|---|---|---|---|
| **PHYSICAL WORKS** | | | | | |
| **TOTAL** | | 592.6 | 47.6 | 14.6 | 804.7 |
| URBAN | | | | | |
| Urban | | 340.2 | 19.7 | 5.7 | |
| Urban fringe | | | 15.7 | 5.0 | |
| In capital cities | | | | | 118.5 |
| In LUCs > 1'** | | | | | 133.7 |
| In the rest of the country | | | | | 552.5 |
| RURAL | | 252.4 | 12.2 | 3.9 | |
| Rehabilitation and re-equipping | | | 22.0 | 6.0 | 417.2 |
| New works to cover current deficits | | 485.8 | 16.2 | 5.4 | 307.3 |
| New works to respond to population growth | | 106.8 | 9.4 | 3.2 | 80.2 |
| **INVESTMENT COSTS** | | | | | |
| **TOTAL** | 64.48 | 6.06 | 2.0 | 1.42 | 55.0 |
| URBAN | | | | | |
| Urban | 8.58 | | .63 | .45 | 7.5 |
| Urban Fringe | 12.43 | 3.48 | .75 | .54 | 7.66 |
| RURAL | 43.47 | 2.58 | .62 | .43 | 39.84 |
| Rehabilitation and Reequipping | 16.97 | | .44 | .28 | 16.25 |
| New Works in Order to Cover Current Deficits | 37.42 | 4.97 | 1.0 | .72 | 30.73 |
| New Works in Order to Respond to the Population Growth | 10.09 | 1.09 | .560 | .42 | 8.02 |

* In hospital beds.

** Large Urban Conglomerations of more than one million inhabitants.

# FINANCING THE PLAN FOR INVESTMENT

## I. METHODOLOGY

1. In the analysis of financial feasibility of the Regional Plan for Investment, three possible sources of financing were independently considered and studied: a) internal financing, including the private sector and possible schemes of self-financing and cost recovery; b) external, multilateral, bilateral, public, and private financing; and c) external debt conversion.

2. An attempt was made to obtain information from the countries and from Latin America and the Caribbean as a whole, as well as from the industrialized countries and multilateral lending agencies.

Different macroeconomic variables were tested, only the most significant of which were utilized. Others had to to be ruled out because they varied in relation to the preceding variables, as in the case of Gross Domestic Savings and Gross Domestic Investment.

### A. INTERNAL FINANCING

3. With regard to internal financing, calculations have been based on the Gross Domestic Product (GDP); size of the overall government and the central government; public spending; expenditure on investment in health by the public sector (Ministries of Health, Social Security) and the private sector; as well as public investments in water and sewerage.

The principal sources of information have been the World Bank, International Monetary Fund, United Nations, ECLAC, IDB, and PAHO. In order to maintain a certain consistency in the assumptions and calculations preference has been given to the information from the World Bank.

It has been necessary to work with several assumptions, especially with respect to projections for 1991 and 1992 and for the period 1993-2004.

It is considered that the size of the public sector and of overall government; public spending on the infrastructure of water, sewerage, and health services; the relative size of the public, social security, and private subsectors; and spending on Social Security--all expressed in percentages of GDP--will remain constant during the period 1993- 2004.

According to available information, the periods 1971-78, 1973-80, and 1977-80 have been used as bases.

4. The calculations for internal financing were made in accordance with the following reasoning:

a) The percentage represented by total public spending, in relation to the Gross Domestic Product of the countries of Latin America and the Caribbean, is, on the average, 27,77% annually[1].

b) The percentage represented by public spending on health services, in relation to total public spending, is, on the average, 5.64% annually[2].

c) The percentage represented by investments by the public sector in the infrastructure of health services, in relation to public spending on health services, is, on the average, 8,10% annually[3].

d) On the basis of the preceding values public investment in the infrastructure of health services represents, on the average, 0.1268% of the GDP annually.

e) Spending on health by the private sector and social security vis-à-vis the public sector is 1.33 and 1.18 to 1.00. [4] Assuming, conservatively, that the investment behavior of social security is proportionally similar to that of the Ministries of Health, and that of the private sector is only 50%, investments in health by social security and the private sector represent, on the average, 0.1481% and 0.0840% per year, respectively, of GDP.

f) To the foregoing it is necessary to add prospective estimates of self-financing, on the basis that payment for health services would represent only 7% of current spending on health services by the public sector (discounting central and regional expenditures for administration). If 25% of this figure is utilized at the local level in recurring expenditures, 55% for small local investments and institutional development, and the remaining 20% as source for a National Investment Fund (compensatory, in order to guarantee the principles of solidarity and equity), self-financing would represent an average 0.0428% annually of GDP[5].

g) The total of internal financing of the health sector then is, on the average, 0.4017% annually of the GDP of the countries of Latin America and the Caribbean.

h) The percentage represented by investments by the public sector in water and sewerage, in relation to Gross Domestic Product, are, on the average, 0.548% annually[6].

i) The preceding amount includes external financing, which represents 25.7%. Consequently, national investment is reduced to 0.40% of GDP[7]. This last figure can, in turn, be broken down into a proportion of 65% public financing, 21% private, and 14% self-financing or costs recovery, which represent, in relation to GDP, 0.260%, 0.084%, and 0.056%, respectively.

Self-financing in the environment would come principally from the drinking water sector and would be utilized in part for new investments.

j) Finally it would be necessary to assume that the countries are already investing in preinvestments and institutional development, although in national and sectoral accounting no specific figures appear. A preliminary estimate, on the basis of partial information, yields 0.0183% of GDP, which is distributed proportionally among the national sources.

k) Adding together the previous estimates of internal sources gives a total average investment in health and the environment, during the 1970s, of 0.82% of GDP annually.

4. In accordance with projections of the World Bank, it was assumed that the GDP of Latin America and the Caribbean would undergo an increase of 4.2% annually in the period 1993-2004[8]. Based on this rate of growth, investment capacity could return to 1970s levels.

5. As a result, the aggregate GDP of the Latin Americas and Caribbean counries for the period 1993-2004 would be on the order of the US$ 17.5 trillion. Applying to this amount the same percentage of 0.82%, internal financing for the present Regional Plan for Investment would be on the order of US$ 143.5 billion.

Table A of this annex shows the percentages of GDP and the corresponding amounts.

## B. EXTERNAL FINANCING

6. With regard to external financing, information has been utilized from OECD and the World Bank.

The calculations have been made considering what the industrialized countries have contributed, multilaterally and bilaterally, to investments in drinking water and sewerage and health services in Latin America and the Caribbean during the period 1973-1980[9]. This information covers the disbursements made through "Official Development Assistance" - ODA (concessional) and the so-called "Other Disbursements" (non-concessional)[10]. Similar to what what done with internal financing, these disbursements have been related to the aggregate GDP of the industrialized countries. The amounts obtained have been converted into percentages of the GDP of the countries of Latin America and the Caribbean.

7. It is assumed that the percentages allocated to water and sanitation and health services for Latin America and the Caribbean will be maintained in the future. Adding to this the new World Bank policy to invest at least 25% of its resources in the social sectors, the allocation of funds from the industrialized countries to multilateral sources, and for health and sanitation, would rise from 8.5% to 10%[11]. In addition, it is assumed that the increase in GDP of the industrialized countries in 1991 and 1992 will be 1.7% and it will be 3.0% from 1992 onward[12]. It is thus possible to estimate that for the period 1993-2004 there would be an availability of resources from these sources on the order of the US$ 63.0 billion. This corresponds to 0.360% of the GDP of the countries of Latin America and the Caribbean.

## C. EXTERNAL DEBT CONVERSION

8. In regard to external debt conversion only one country (Ecuador) has carried out conversions of external debt for health, drinking water, and sanitation, with an sum of US$ 12.0 million and US$ 14.0 million in 1990 dolars for the period 1989-91[13], i.e. an average of US$ 4.0 and 4.5 million per year, respectively. This represents only 0.085% of the country's long-term external debt[14]. The only estimate possible based on current practices in transacting these projects and the possible percentage of debt of conversion for health and the environment, is a total amount on the order of

US$ 360 million for the Latin American and Caribbean countryes during the period 1993-2004.

Investment financing through external debt conversion would require, like many of the estimates of financing from all sources, political commitments and agreements between the Governments of the countries and creditors, along with the modification of existing legislation and international procedures. If only 0.25% of the external debt of the Latin American and Caribbean countries--three times the percentage in the case of Ecuador--could be converted to investment in health, this would represent an amount on the order of US$ 1.1 billion.

## D. SENSITIVITY ANALYSIS

9. It is possible to calculate the financing that would be available using other hypotheses:
If the level of recurring expenditure and capital were that of the 1970s plus the difference between this level and that of the 1980s, the result would be an annual recurring expenditure on health of:

$$5.64\% + 0.42^{15} = 6.06\%$$

Thus, annual capital expenditure is:

$$8.1\% + 2.6\%^{16} = 10.7\%$$

These percentages replace those mentioned above, (4.b and 4.c) and are utilized in the same way. It is assumed that contributions to the environment from external sources and through debt conversion remain the same, and thus 1.3391% of GDP of the Latin American and Caribbean countries would be utilized for investment, which represents $234.3 billion.

10. If the GDP of the Latin American and Caribbean countries grows by 3% per year instead of 4.2% during the period 1993-2004, GDP would be on the order of $ 16.163 trillion. Doubling the percentage of the GDP shown in Table A (1.1861%) yields total financing on the order of the $ 191.7 billion.

ANNEX V

## TABLE A: FINANCING PLANNED FOR THE REGIONAL PLAN OF INVESTMENTS IN HEALTH AND THE ENVIRONMENT, 1993 - 2004 in billions US$, 1990 dollar values

| SOURCE | ENVIRONMENT | | HEALTH | | TOTAL | |
|---|---|---|---|---|---|---|
| | % of GDP | AMOUNT billions of 1990 dollars | % of GDP | AMOUNT billions of 1990 dollars | % of GDP | AMOUNT billions of 1990 dollars |
| **NATIONAL** | | | | | | |
| Public sector[1] | 0.260 | 45.5 | 0.1268 | 22.2 | 0.4000 | 70.0 [2] |
| Social Security | | | 0.1481 | 25.9 | 0.1500 | 26.2 [2] |
| Private sector | 0.084 | 14.7 | 0.0840 | 14.7 | 0.1700 | 29.75[2] |
| Self-financing | 0.056 | 9.8 | 0.0428 | 7.5 | 0.1000 | 17.5 [2] |
| Sub-total | 0.400 | 70.0 | 0.4017 | 70.3 | 0.8200 | 143.5 [2] |
| **EXTERNAL** | | | | | | |
| Multilateral | 0.1332 | 23.31 | 0.0508 | 8.89 | 0.1840 | 32.2 [3] |
| Bilateral | 0.0148 | 2.59 | 0.1612 | 28.22 | 0.1760 | 30.81[3] |
| Concessional | 0.0222 | 3.89 | 0.03125 | 5.47 | 0.05345 | 9.36 |
| Non-concessional | 0.1258 | 22.01 | 0.18080 | 31.64 | 0.30660 | 53.65 |
| Sub-total | 0.148 | 25.9 | 0.21205 | 37.11 | 0.3600 | 63.01[3] |
| **DEBT CONVERSION** | 0.0032 | .570 | 0.00291 | .510 | 0.00611 | 1.08[3] |
| **TOTAL** | **0.5512** | **96.47** | **0.6167** | **107,920** | **1.1861** | **207.59[3]** |

[1] Includes Ministries of Health and institutions concerned with sanitation and the environment.

[2] When the investments explained under point 4(j) of this annex, the total contribution of the public sector rises from $67.7 to $70.0 billion, that of social security from $25.9 to $ 26.25 billion, that of the private sector from $29.4 to $29.75 billion, and that of self-financing from $17.3 to $17.5 billion, and the total of the figures under the columns "environment" and "health" does not correspond exactly, for national sources, to the figures in "total" columns.

[3] To facilitate presentation, the figures shown in the tables on pp.42-42 of the text have been rounded off.

## II. REFERENCES AND EXPLANATIONS OF METHODOLOGY

1. Government Finance Statistics Yearbook, International Monetary Fund (IMF) 1991, shows that during 1984-1988, central government spending represented 24.4% of GDP. "Social Public Spending in South America in The Eighties", ECLAC, publication LC/R 961, p.21, shows that central government spending represents 88% of the overall government spending in 8 countries of South America covering 88.4% of the total population of that subregion, during the period 1977-86, public spending represents 27.77% of GDP.

2. Government Finance Statistics Yearbook, IMF, 1991.

3. "Gasto Público Corriente y Gasto Público de Capital, ECLAC Publication LC/R 962, 1990, pp. 48-53.

4. "Financiamiento de la Atención a la Salud en América Latina y el Caribe, con focalización en el Seguro Social," MESA-LAGO (Carmelo), World Bank, 1989, p.33; "Social Spending in Latin America", GROSH (Margaret), World Bank, 1990, p.9, and World Bank, "El Financiamiento de los Servicios de Salud en los Países en Desarrollo," 1987, p.17. According to these 3 documents, the health public sector, social security, and the private sector spent, respectively, 28.5%, 33.5% and 38% of the total expenditure on health.

5. Total current expenditure by the public sector on health represented 1.1562% of GDP during the period 1973-80. Of that, 81.9% represents current expenditure and 85% of this expenditure corresponds to establishments. 7% of this expenditure is recovered through the cost recovery systems and 75% of the recovered amount is channeled into investment and institutional development. The 7% is based on estimates of Ch GRIFFIN, "User Charges for Health Care in Principle and Practice," World Bank, EDI Seminar Paper No. 37, 1988, p.21. See also D. De FERRANTI, "Paying for Health Services in Developing Countries," World Bank, PHN Technical Note, 1984, p.11.

6. "Latin America and the Caribbean Region, Water Supply and Sewerage Sector", Proposed Strategy, World Bank, 1988, p.23. (The figures from this source cover the period 1971-1978 and were converted to 1990 values for purposes of the estimates).

7. "Decenio Internacional del Abastecimiento de Agua Potable y Saneamiento: Informe sobre la marcha de los trabajios en la Región," OPS, 1987, p.20.

8. By using the 1990 GDP of the Latin American and Caribbean countries given in World Bank Selected Economic Data, 1991, adjusted to 1990 values, and projecting to 1993 based on growth rates of 2.32% for 1991, 2.28% for 1992, and an average of 4.2% annually from 1993 onwards, on the basis of World Bank, World Development Report, 1990, p. 16, the figure of $17.5 trillion for the period 1993-2004 is obtained.

9. OECD, Geographical Distribution of Financial Flows to Developing Countries, 1975, 1980, 1985, and OECD, Development Cooperation, 1987 to 1991.

10. US$ 4.27 billion annually through ODA and US$ 28.06 billion annually from other disbursements, which represent 0.0348% and 0.2287%, respectively, of the GDP of the industrialized countries. These percentages applied to the projected GDP of the industrialized countries during the period 1993-2004 represents US$ 6.67 billion annually in ODA and US$ 43.81 billion annually in other disbursements.

11. Official communiqué from the Vice President for Latin America and the Caribbean of the World Bank to PAHO, in which he mentions that the World Bank intends to increase its contribution to the social sectors to 25% of its total loans, which would signify a doubling of the financing to these sectors (see World Bank Anual Report 1991, p.181). The percentage that the World Bank provides to the health sector of the Latin American and Caribbean countries would therefore increase from 6% to 12%, and the contribution of all multilateral sources to the health sector could rise from 8.5% to 10%.

12. OECD, Projections mentioned in a communiqué, 1992, and, World Development Report, World Bank, 1990, p. 16.

13. "Conversión de deuda externa para proyectos de desarrollo en Salud," Case study from Ecuador, Troy, Solorzano, Vallejo, OPS, 1991.

14. World Bank, World Debt Tables, 1991-92, Vol. 2, p. 118, show the long-term external debt of Ecuador in 1990.

15. Government Finance Statistics Yearbook, 1991, show that the central government spent 5.13% of its annual resources on health during the period 1981-88. The difference between the amount spent in the 1970s vis-à-vis the 1980s is 5.64% - 5.13% = 0.51%. It is assumed that this difference is also valid for 1989 and 1990. Thus, 0.51% x 10 years ÷ 12 years = 0.42% per year. The 0.42% is added to 5.64%, yielding 6.06%.

16. ECLAC, LC/R. 962, pp. 48-53, shows that investment in health was 8.1% during the 1970s and 5.0% during the 1980s. The difference of 3.1% x 10 years ÷ 12 years = 2.6%, which added to 8.1% gives 10.7%.