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**Water and Sewerage Sector in  
Latin America and the Caribbean**

**Restructuring of the Sector:  
The Challenge of the Nineties**

**WATER AND SEWERAGE SECTOR  
IN LATIN AMERICA AND THE CARIBBEAN**

*The challenge of the Nineties*

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# WATER AND SEWERAGE SECTOR IN LATIN AMERICA AND THE CARIBBEAN

## The challenge of the Nineties

### BACKGROUND

1. In the foreseeable future the LAC Region will continue to be dominated by a striking geographic population distribution. In 1985, 69% of the population lived in urban areas; by the year 2000 this percentage is expected to reach 77% or 401 million. In the same period, the rural population is projected to decrease slightly from 120 million to 117 million. If present urbanization and economic trends continue, some 70 million people will be living in shanty towns in highly precarious, possibly life-threatening, conditions by the turn of this century.
2. Sector companies in the region face a formidable task. To reach full service coverage by the end of the century they would have to serve some 522 million additional people, almost double the present serviced population, and invest at least US\$ 92 billion (1985 prices). More modest goals will still require substantial investments (Annexes 1 and 2). There is, however, a wide range of variation in investment levels: six countries would need to devote more than 1% of GNP per year to the sector while only two need to devote less than 0.5% (Annex 2). It is likely therefore, that service levels will fall short of these less ambitious targets, which envisage less than full coverage. Investment levels will almost certainly exceed this estimate or alternatively, service levels will be substantially lower if the management of most sector institutions is not able to implement modern and efficient management practices.
3. As a consequence of population dynamics urban areas are expected to receive the lion's share of investments. Investments in sanitation and waste water treatment will become progressively more prominent. Rehabilitation of facilities, to correct past maintenance neglect, will also necessitate a major investment effort. As a consequence, training and institutional development programs need to be concentrated in the early years to prepare sector institutions and their staff for the challenge ahead.

### MANDATE FOR THE SECTOR

4. I would like to propose that two overriding concerns define the main sector objectives: the need to satisfy fundamental human needs in terms of potable water and sanitation and to support, as basic infrastructure services, the productive sectors of the economy. These objectives should be reached in an efficient manner. I would also like to argue that on account of institutional and management deficiencies many sector companies are operating in ways contrary to these objectives. The lack of adequate water and sanitation services has serious effects on the population beyond health

considerations as the productive sectors are forced to develop their own supplies at higher costs. This translates into higher production costs and in turn into higher costs of final consumer products.

5. Sector development has been impaired mainly by constraints that bear directly on operational efficiency. If the overriding objectives that I proposed earlier are accepted then government, sector officials and the political establishment at large would need to concentrate their efforts to implement radical and urgent changes particularly in two main fronts to bring about deep and lasting transformations:

to remove institutional and managerial inefficiencies;

and improve financial resources and cost recovery.

## **INSTITUTIONAL AND MANAGEMENT ASPECTS**

6. Institutional and managerial deficiencies often go hand in hand. It is not uncommon to observe that functions among and within sector institutions overlap or are ill defined. When this happens, the work never gets done on time and the quality and the cost of service are affected. Problems associated with the management and allocation of water resources and with water pollution are for the most part rooted on these deficiencies.

7. In what I consider an identity problem many managers see their institutions as construction companies, and in fact the name and organization of many sector agencies often reflect this view. Satisfaction of the consumer and provision of good services is often an afterthought. Although construction activity will remain strong for many years to come on account of population growth and service deficits, conservation of existing facilities often suffers from this identity problem. The result is poor service and expensive plans to rehabilitate or replace neglected facilities.

8. There are management issues particular to small communities or towns with less than about 100,000 people. A recent Bank study has documented that important economies of scale exist in the operation of water systems in Latin America and elsewhere; that is, average unit costs decrease as population size increases. Many other studies and observations have found that personal income tends to decrease as the population of a community decreases. These two facts indicate that small communities can find it difficult to pay for good managers and a critical mass of operational staff and, as a consequence, quality of service suffers.

9. Management deficiencies are in evidence in most sector institutions in the Region. They are found in all phases of the provision of these services from planning to operations and they affect the quality, quantity and costs of the services provided and therefore consumer satisfaction.

10. Inadequate management attention to planning also affects the quality and costs of services provided. The simultaneous presence of excess production capacity with deficient water distribution systems is a testimony to shortcomings in planning. Idle resources in excess production capacity can not be used to extend services to large areas without them.

11. Management, by far, needs to pay higher attention to the large human capital employed by the sector. Staff productivity is low at all levels of the organizational structure. Training needs however, have not been consistently identified and training opportunities are few and far in between.

## **FINANCIAL SITUATION OF SECTOR COMPANIES AND THE COST OF SERVICES**

12. A common response to explain the poor financial situation of many sector companies is to evoke the limited capacity of the population to pay for these services. It is often argued that this is the driving force that explains and justifies a precarious financial situation. One problem with this argument is that in many cities the poor are paying higher prices to street vendors to obtain water of doubtful quality. It also seems that there is a misperception in assigning the same social and health benefits to all water uses. As a matter of fact only a small fraction (less than 10 percent) of the total water use is needed to satisfy basic human needs. It follows that only that small but essential volume should receive, if necessary, a subsidy.

13. Progressive rate structures are applied by most sector companies in the Region to provide a basic service to the poor at an affordable price. The good intentions of this cross subsidization policy, however, are often negated by high connection fees that effectively block the access of the poor to such services and by the allocation of very high block volumes at a fixed rate. The poor consume substantially below the minimum block allowance and therefore they end paying substantially higher prices, on an unit basis, than other consumers. High basic block volumes, on the other hand, have the effect of extending the subsidy to a larger segment of the population thus reducing the financial base of the company and weakening its financial position. In the attempt to recover costs from a few, usually industrial consumers, high rates are imposed on these users forcing them to find alternative supplies which in turns lowers still more the financial base of the company. There is also evidence, in some cities, that highly progressive rates can contribute to the rise in illegal consumption. Some consumers in the high consumption and rate brackets, may resort to illegal means to reduce their water bills.

14. Sector managers often blame the poor finances of their companies on external factors over which they have little control. The fact of the matter is that the poor financial situation of most sector companies is aggravated by problems of their own. The bill for services, no matter what the level of tariffs, is often not sent to the consumer or if sent is collected late. Water losses, either physical or commercial often exceed half the volume of total water production. This happens because of a combination of poorly managed commercial systems that can not account for all the users and water consumption and of poor maintenance of the systems. The preferred solution is often to build additional supplies at higher costs at the expense of actions to correct these problems. Scarce resources are thus diverted away from programs to increase service levels and the reliability and quality of the services. Agencies then complain about the need for additional financial resources.

15. Inefficiencies in the use of personnel exacerbate financial problems. A large number of agencies have between two and three times more staff per serviced population, and often more, than well run companies in the region. This redundant labor force not only cost more but often stands in the way of sound and agile operational practices.

16. There is little doubt that the demand for financial resources is large and that, realistically only a small percentage, most likely below 20 percent, is likely to come from international resources. And even then some of these money will have to be repaid. Such limited participation calls for sustained and innovative efforts on the part of both local institutions and international donors.

17. It follows that countries in the Region need to:

- a). encourage financial flows to the sector and to channel them under coordinated policies and conditionalities to foster sector objectives,
- b). promote cost recovery and financial self sufficiency and accountability of sector agencies; and,
- c). eliminate subsidies not justified on grounds of environmental protection or poverty alleviation.

18. The international donor community can be instrumental in supporting institutional and management changes to bring about an efficient provision of services. International donors can also help in the dissemination of appropriate technological options for low income and rural areas. The sector institutions, in turn, should be keen in looking for solutions that are accepted by their populations and be less prone to copy, without the benefit of the doubt, of technologies that are beyond their means to operate and maintain.

#### PRACTICES TO EMULATE

19. Sector enterprises in the region face similar problems and constraints. Among the most important are:

- \* high inflation.
- \* low investment priority in a scarce resource scenario.
- \* rapid and uncontrollable urban population growth.
- \* large proportion of low income population to be served.
- \* political appointed managers and controlled rates.
- \* instability of technical and managerial positions.
- \* low salaries and an untrained labor force.

20. These problems, if anything, make a compelling case to argue that sector companies need to be managed much better than in the past. The demand for services from a growing population is formidable and the efficiency of present operations is, by far, very low. The level of frustration of most of the population with deficient or no services is unlikely to abate just because the problems are complex. The challenge for sector managers is precisely to be less complacent with the status quo and more daring with innovation of management practices and technological options that are conducive to the provision of an excellent service at a reasonable cost.

21. In the same study referred to earlier, the Bank had the opportunity to study the management practices of a selected group of sector companies in the Region (LAU companies) and in some industrialized countries. The picture that emerges from this group of companies in the Region is encouraging. These companies have managed to be successful despite the problems referred to earlier. They all have reached service levels for water and sanitation that are substantially above the corresponding national averages and they all operate at efficiency levels that are also substantially higher than those of most sector companies in the Region.

22. The LAU companies have been able to develop responsive management teams and sound managerial and operational practices despite country and regional constraints, even though they have not attained the same level of efficiency of good companies in the industrialized countries. The most salient, but not always quantifiable, aspects that help to explain their good performance are:

- \* LAU companies have developed distinctive organizational cultures. Their managers are held in high esteem and they in turn have been able to translate this trust into a mandate for company excellence.

- \* LAU companies offer, by far, more job stability in mid management and professional positions. Therefore, institutional memory is preserved and long-term objectives are kept in focus.

- \* LAU companies' financial position has been achieved by reasonable rates that cover at least operational and maintenance requirements and by controlling costs through higher operational efficiency. They also make use of effective cost accounting systems that allows them better financial management.

- \* LAU companies' relations with customers are of the highest priority. This provides not only feedback on operations but reinforces community trust in the company.

- \* Some LAU companies have, in addition, developed particular practices that deserve attention. Among them are the successful use of private contractors to increase productivity and the participation of private capital to finance and operate waste water reuse plants.

- \* Two of these companies have developed a responsive regional organization to the needs of small- and medium-size municipalities.

23. There are other areas where counterparts in the industrialized countries fare much better. Their efforts in these areas should therefore be emulated by companies that strive for even higher efficiency. These include the following approaches:

- \* The government, the company's board of directors and the management all have well defined roles. The first regulates and sets clear norms, the second formulates strategic plans and the latter and carries out the operations with a high degree of autonomy.

- \* The participation of the private sector in managing operations. This approach fosters independent decision making and compels management to be more accountable for performance.
- \* Management information and operation systems make use of state of the art technology.
- \* The internal auditing department has been expanded to oversee and help to improve operations and practices of the whole company.

24. The problems of water and sanitation services associated with small municipalities are by no means exclusive to the Region. A solution to them has been provided, in many countries in Latin America, by regional companies in charge of all phases of operations. These companies are also in a better position to capture some of the economies of scale available in the construction of large works that can be shared by several municipalities. Another solution is found, for instance in Spain, by the participation of the private sector in the operation of these services. Caution should be taken not to infer that large and centralized national organizations would be an optimal solution. Experience during the 1960s and 1970s in Argentina, Colombia and Mexico indicates that the expansion of this type of central agency stretched its managerial capacity to the point where gross service inefficiencies were readily observable. This led to the disbandment of these institutions or to a rearrangement of their functions.

#### AN AGENDA FOR ACTION

25. Most good management practices and problems identified seem obvious and simple to implement or resolve. In practice a concerted and sustained effort is required to reach the high levels of effectiveness and efficiency associated with these companies. Organizational learning must thread a narrow path. Organizational flexibility helps to facilitate innovation and can lead to self-confidence and risk taking. Success on the other hand, may lead to stagnation and a stifling of experimentation needed for future learning. Thus, in emulating these good practices other companies need not only to be creative and to adapt them to local conditions, but also to maintain a systematic and continuous effort to improve efficiency and effectiveness.

26. Any strategy to achieve effective management starts with a firm commitment to improve and with an open mind to try new ideas that may run contrary to the way things were done in the past. Several paths have been followed to improve operations and all have their merits and limitations. Among the most widely used are: a) twinning operations which imply an horizontal cooperation between and transfer of experience from a well run and an emerging company; b) targeting and bonus systems that focus on operating efficiency and on motivating management and c) contract plans or negotiated agreements between governments acting as owners of a public enterprise and the managers of the enterprise itself.

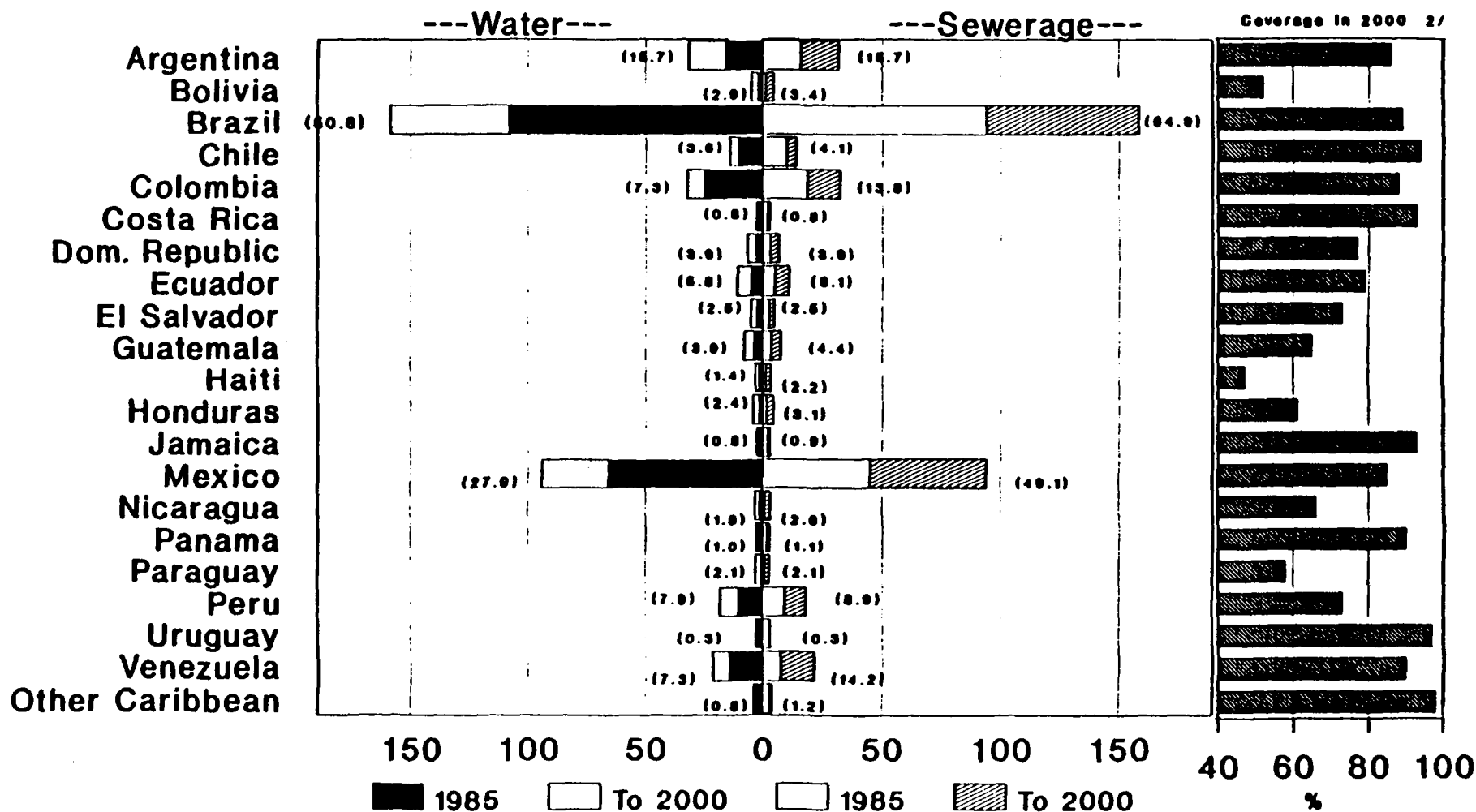
27. Given the externalities and economies of scale in research and development, associations of utilities or central government organizations can be the focal point to document and disseminate successful management practices in their respective countries.



28. An efficient and effective sector company cannot survive, much less provide an effective and efficient service, if it is not able to recover its costs and contribute to system expansion. Governments should, therefore, devise mechanisms to overcome not only economic but political, social and institutional barriers, that influence the adoptions and effective implementation of adequate rates.

29. The need for better services to all is a challenge for governments, sector authorities and the political establishment. The most effective way to meet this challenge is to place management and institutional reform at the center stage of any company striving to reach high levels of effectiveness and efficiency. The examples of successful management practices in the region show that adequate operational efficiency and effectiveness can be attained by all utilities in the region; the large unmet needs of the population make these reforms imperative.

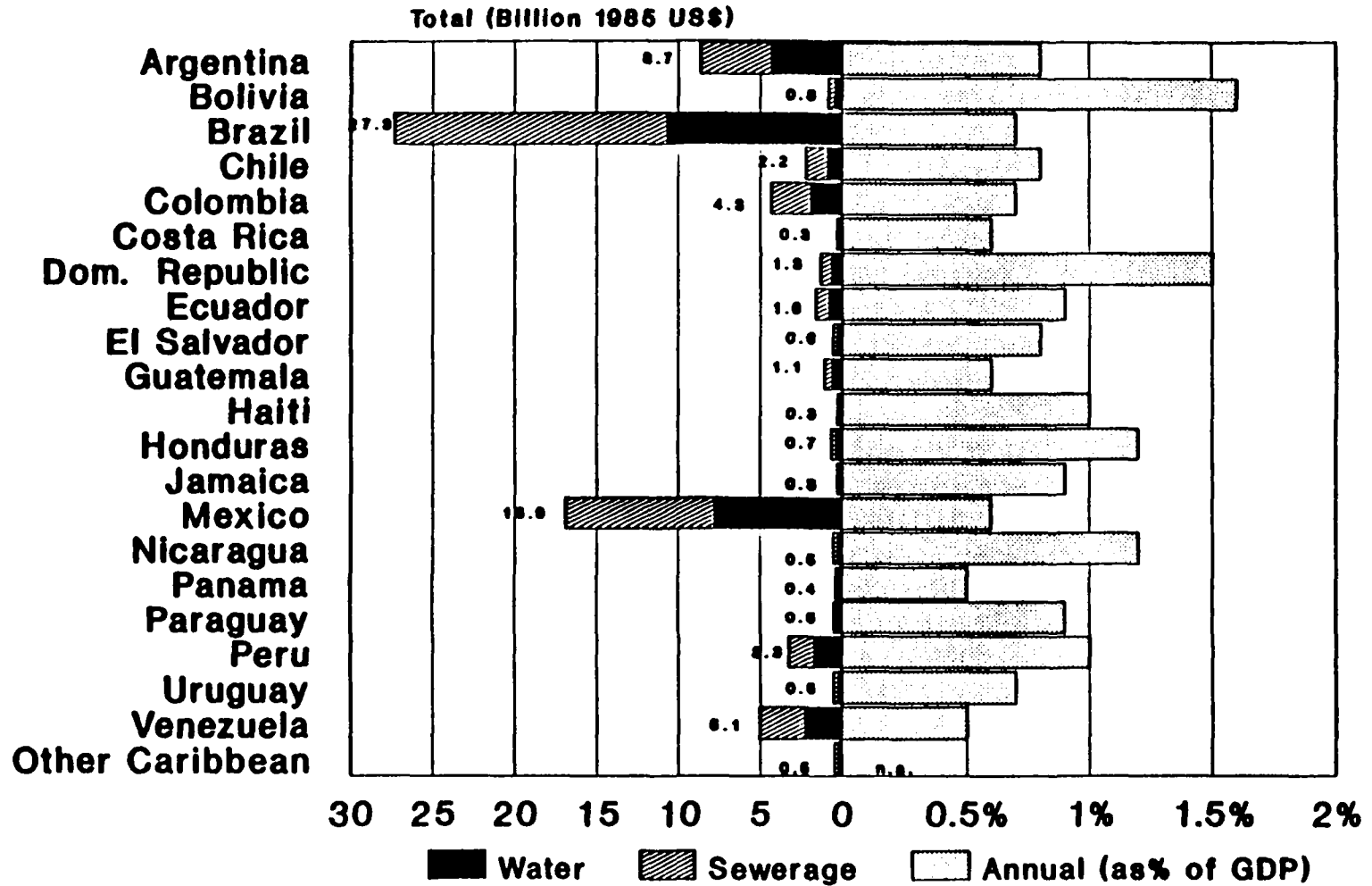
**Latin America and the Caribbean Region  
Water Supply and Sewerage Sector  
Population Served (Million) 1/**



1/ Numbers in parenthesis indicate additional population to be served by year 2000.

2/ Service levels for year 2000 are PAHO and Bank estimates based on country goals. Some coverage for water and sewerage is envisaged.

**Latin America and the Caribbean Region**  
**Water Supply and Sewerage Sector**  
**Investments required by year 2000 1/**



1/ Service levels for year 2000 are PAHO and Bank estimates based on country goals. Some coverage for water and sewerage is envisaged.