

# Poverty, infrastructure and the environment

by Louis Y. Pouliquen

**Adequate water-supply and sanitation facilities are essential to alleviate poverty; a reliable water-supply infrastructure is vital for productivity. The major challenges are the natural scarcity, depletion and degradation of water resources.**

SERVING THE UNSERVED with water and sanitation facilities is an essential element of alleviating poverty. Two related parts of the puzzle must also be addressed: water and sanitation services in the context of basic infrastructure; and the links between water and sanitation and broader environmental issues.

## Poverty

The World Bank has as one of its primary objectives the alleviation of poverty, and the *1990 World Development Report* published in August is about poverty. One of the basic findings is that although the past decade has seen moderate growth in many parts of the world, in some countries of Latin America, and in most of sub-Saharan Africa,

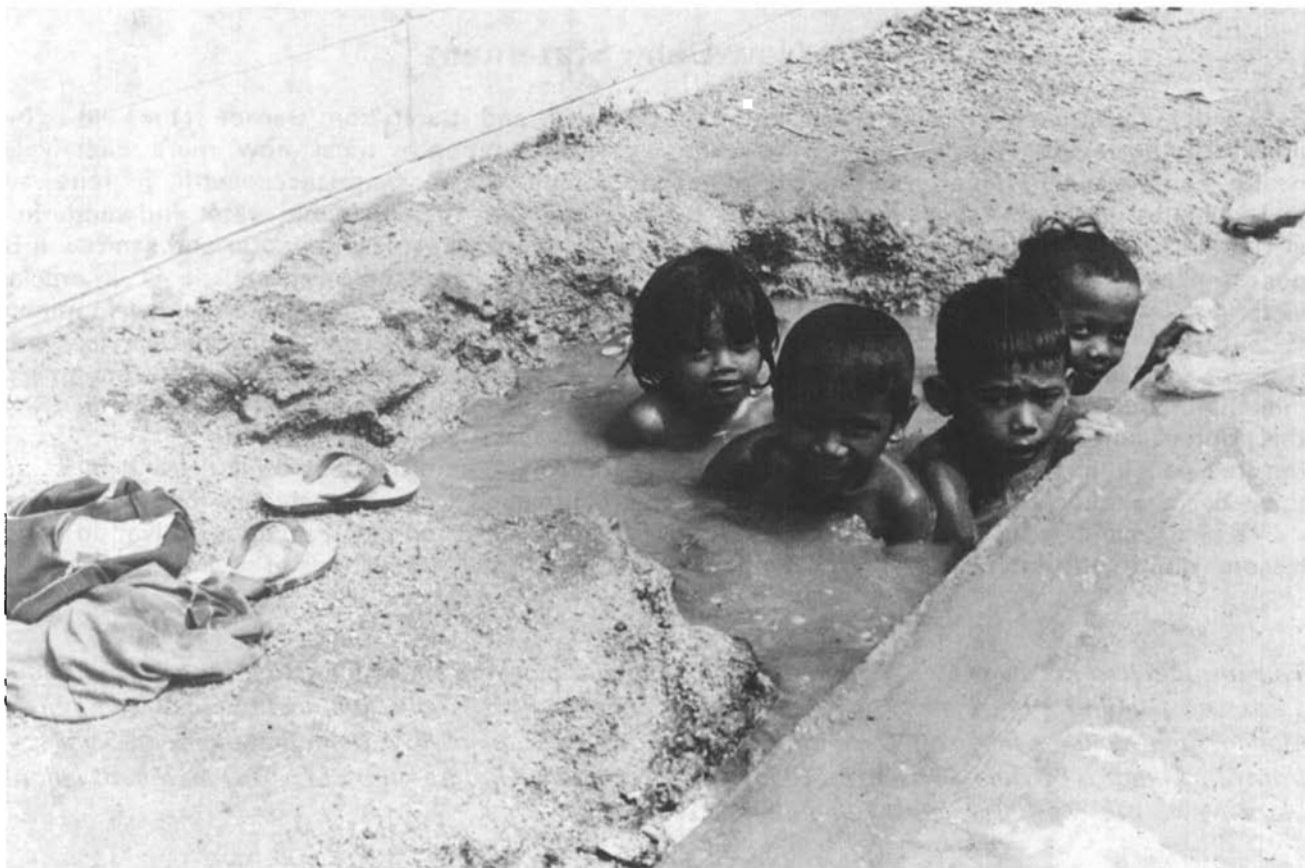
real per-capita incomes, living standards, and investment have actually fallen. In 1985, more than one billion people, or almost one third of the total population of the developing world, were struggling to survive on less than US\$370 per capita per year. The percentage of the population living in poverty was especially high in South Asia and sub-Saharan Africa. In 1985 life expectancy was 76 years in the developed world but only 50 years for sub-Saharan Africa. Mortality among children under five in South Asia exceeds 170 deaths per thousand; in Sweden it is less than 10. Other aspects of the quality of life also show the bleakest figures for regions with the greatest incidence of poverty.

The *World Development Report* concludes that the number of poor

in the developing world might fall by more than 300 million by the year 2000, provided progress is made towards adopting poverty-reducing strategies. But the picture varies a great deal in different parts of the world. Progress is projected to be dramatic in East Asia and good in South Asia. In sub-Saharan Africa the situation will be quite different, unfortunately, with an increase of nearly 100 million poor people. These projections reveal the plight of sub-Saharan Africa all too clearly; even preventing an increase in the number of poor people above 1985 levels will require massive efforts.

The Report draws lessons from the experience of countries that have succeeded in reducing poverty, with a view to identifying what kinds of policies work best. Our conclusion is that they all hinge on a two-pronged approach consisting of:

- Efficient, labour-intensive growth based on appropriate market incentives, physical infrastructure, institutions and technological innovation.



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*Mortality among children under five in South Asia exceeds 170 deaths per thousand; in Sweden it is less than 10.*



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○ Adequate provision of social services, including primary education, basic health care, and family planning.

The water and sanitation sector is an essential component of both prongs in the strategy. It is obvious that as long as there are still over a billion people without access to a clean water supply, and many more without access to sanitation services, people cannot be healthy or productive, and poverty will not be substantially reduced.

We have learned a great deal during the 1980s, but the most important lesson is probably that the problem is not just one of inadequate resources. We have learned that a fundamental reorientation in the role of government in serving the poor is needed. The role must shift from that of provider of services to a new role of promoter of service provision, entailing in many instances increased autonomy at the local level. We have also learned that this is a slow process which, if it is to be sustainable, requires major capacity-building efforts at

community level, in local and municipal authorities, in supply institutions and in the private sector. The agenda must include:

- The adoption of sound policy and regulatory frameworks.
- A greater responsiveness to demand, both in allocating resources and in tailoring service levels to willingness to pay.
- Active efforts towards the decentralization to and the strengthening of local public and private bodies, with special emphasis on ownership and management by the communities themselves.

If these issues are addressed, then the water and sanitation sector will be able to make a significant contribution to the poverty alleviation effort of the 90s.

### **Infrastructure**

Recall, however, that the second prong of the poverty alleviation strategy is growth, which requires adequate physical infrastructure. Over the last decade or so, infrastructure is a word that has

hardly been mentioned in the context of development. Infrastructure has been largely taken for granted. There is mounting evidence that this may have been a major mistake, since inadequate infrastructure, and more importantly inadequately operated infrastructure, can be a major handicap to development. The World Bank has, over the last few years, been heavily involved in what are called structural adjustment operations. These operations focus on appropriate adjustments of the overall macro-economic policies of countries, and the Bank makes periodic evaluations of the operations' impact. The most recent of these assessments concluded that the adequacy of infrastructure was a major element in how successful these operations have been.

Infrastructure adequacy is therefore becoming a major focus of attention and the water and sanitation sector is an important part of it, with investment in the sector averaging between five to six per cent of total public investment.

## Eight lessons from the decade

### **Focus on poverty: serving the unserved**

A large percentage of the world's population, generally the poor, remains unserved. Reaching the poor with water and sanitation services requires special emphasis on helping them to help themselves.

### **Building capacity: the promotional role of government**

There is a need for governments to concentrate less on direct intervention in providing services and more on enabling public and private institutions to deliver services.

### **Meeting demand: understanding what services people want and are willing to pay for**

Users' perceptions of the benefits from improved sectoral services have not been well understood by sector planners. There is also a lack of understanding of the household itself: its micro-environment, communications, decision-making processes, perceived needs and expectations. This has led to investment in facilities that have been under-utilized or that people have been unwilling to pay for, thereby undermining long-term sustainability.

### **Sharing costs: appropriate pricing as a means of improving sector performance**

Costs are rising and so are the numbers of people to be served. Government subsidies are limited, so costs should be shared. The careful pricing of services is a powerful but often poorly used tool for mobilizing financial resources, providing the poor with access to services, and increasing the accountability of service providers to users. It can also inhibit the wasteful use of resources.

### **Technical innovation: a range of options to meet demand**

Technological advances have greatly increased service coverage by lowering costs and permitting the matching of service levels to demand.

### **Women: sound reasons for emphasis**

A focus on the role of women, among the poor and unserved, can enhance the sustainability of basic improvements in water supply and sanitation services.

### **Monitoring: extending coverage with achievable goals**

At current rates of coverage, the prognosis for extending water and sanitation services to the unserved over the next 20 years is poor; establishing achievable targets and effective monitoring systems are instruments for enhancing efforts.

### **Co-ordination: building national and international collaborative networks**

The primary reason for collaboration is to make better use of existing resources. Collaboration starts at the country level and is supported by regional and global networks.

*Global Consultation on Safe Water and Sanitation for the 1990s — Background Paper*

Typically, water use in the industrial sector is two to three times that required for human consumption. The water and sanitation sector is therefore a sector that should be looked at not just as a 'social sector' but also as an important element of the productive sector, in the form of intermediate inputs, essential in the production of tradeable goods and services.

The implications of these observations are that:

- Industrial and commercial water needs must be carefully assessed in any water-supply project.

- In these uses, water is an input in the production process, thus reinforcing the argument that it should not be subsidized.
- The water and sanitation sector, like other input sectors, should be managed in a business-like fashion, and in many instances lends itself to substantial private sector involvement.

## **Environment**

But adequate physical infrastructure is not enough. Increasingly, growth will be constrained by the capacity of

ecosystems to perform two essential functions: to replenish resource inputs into the economy, and to absorb the wastes generated by production systems.

A major issue that must be faced in the water and sanitation sector is the natural scarcity, depletion, and degradation of water resources. Nowhere is the importance of the water and sanitation sector to the environment more obvious than in urban areas, and urbanization is proceeding rapidly throughout the developing world. Cities are currently absorbing two-thirds of the total population increase in the developing world. Close to two billion people will populate the urban areas of developing countries by the year 2000 — some 700 million more than today, with the majority of these new urban residents living in large cities. The productive aspect of this is that cities are also becoming the main engines of economic growth, generating more than half of the GNP in most countries. In some largely urban countries of Latin America up to 80 per cent of future GNP growth will originate in the cities. Demographic and economic growth, however, and its concentration in urban areas, strains the natural resource base, particularly water resources, and generates vast amounts of unmanaged — and potentially unmanageable — wastes. The environmental consequences are direct assaults on human health and the quality of life of all the city's residents, but particularly of the poor — and poor women and children especially.

The 1990s, therefore, bring two growing and major challenges for us in the sector:

- Managing water resources, and
- Improving sanitation in the urban environment.

The importance of the water resource issue is already manifesting itself through sharp increases in the cost of water production. For example, all water and sanitation projects financed by the World Bank in the past four fiscal years have recently been reviewed. This is a large sample reflecting a lending volume of over \$3 billion and a total investment cost of close to \$8 billion. In these projects the incremental cost of water per cubic metre was estimated to be \$0.55, compared to an average price of \$0.32. The difference between these two



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figures is large enough to suggest that on a global basis, water resource availability is already becoming a major issue. Internal Bank reviews provide another dramatic example. In a sample of successive expansion projects in the same cities, incremental cost per cubic metre in real terms has, typically, doubled between the first and second project, and doubled again in the next project. For a long time, water resources have been perceived as an irrigation problem only. These figures show that this is no longer the case, and that the water resource issue is increasingly becoming an urban water-supply problem as well. Action must be taken in three areas:

- Do not look at water supply projects as isolated projects. Look at them within the overall water resource situation of individual countries.
- Identify locations where water scarcity is a critical issue and develop strategies to deal with it before the problem reaches a crisis situation.
- Get the pricing right. If the average price of supply is \$0.32

when the average incremental cost is \$0.55, water users are not getting the correct signal.

Environmentally sound disposal of wastewater and solid wastes is the other side of the water resources issue. Water pollution is one major cause of increasing supply costs. In many cities, the continued accumulation of wastes within the urban environment has already reached alarming proportions and can no longer be ignored. The health consequences of the poor disposal of solid wastes and of sewage are well known: millions of people are at risk from exposure to these wastes.

As a sector we have not faced up to the growing accumulation of wastes in the urban environment. Three areas of focus for an expanded sector effort are:

- Develop new tools of strategic planning to select the right technology and institutional options for sanitation and waste disposal services, reflecting the willingness of beneficiaries to pay for them.
- Take our cue from nature, and develop sustainable approaches

that recycle both solid wastes and wastewater for the benefit of the community.

- Build upon the proven commitment of poor communities to improve their environment, and to promote effective and low-cost clean-up programmes.

We are all aware of the enormous problems we face — problems of appalling poverty, grossly inadequate infrastructure, and a deteriorating global environment. With the lessons we have already learned from the Decade, however, and the renewed momentum which will undoubtedly emerge from the New Delhi Consultation on Safe Water and Sanitation for the 1990s, I believe we are well prepared to face and overcome these challenges.

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The views expressed in this article are the views of the author and not necessarily those of the World Bank.