



A note on forthcoming UNICEF-WWF study

**PRIVATIZATION AND PUBLIC-PRIVATE  
PARTNERSHIPS IN WATER SUPPLY IN  
DEVELOPING COUNTRIES:  
IMPACT ON CHILDREN AND NATURE**

*March 2000*

*Library*

20 International Water  
and Sanitation Centre  
Tel: 101 70 20 139 50  
Fax: 101 70 20 139 50

202.7-00NO-16647

This briefing note is based on a preliminary report prepared by Maarten Blokland and Klass Schwartz, Water Sector and Utility Management Group, International Institute for Infrastructural Hydraulic and Environmental Engineering, Delft, the Netherlands.

The opinions expressed in this report do not, necessarily, reflect the views or opinions of WWF or UNICEF.

For further information please contact: Jan Vandemoortele/Ashok Nigam, UNICEF, 3 United Nations Plaza, New York, NY 10017 (e-mail: [anigam@unicef.org](mailto:anigam@unicef.org)) or Richard Holland/Biksham Gujja, World Wide Fund for Nature, CH-1196 Gland, Switzerland (e-mail: [bguija@wwfnet.org](mailto:bguija@wwfnet.org)).

LIBRARY IRC  
PO Box 93190, 2509 AD THE HAGUE  
Tel.: +31 70 30 689 80  
Fax: +31 70 35 899 64  
BARCODE: 16647  
LO:

## Introduction

1. Water supply and sanitation have traditionally been public services whose provision has principally been the responsibility and obligation of governments. Capital investment for the infrastructure for these services, particularly in urban areas, has largely come from governments because such services are a basic need for the entire population. However, a staggering one billion people are still without a safe water supply and three billion are without sanitation.

2. Despite progress by national governments, donors and multilateral institutions in alleviating financial and institutional constraints in this area of provision, in the past decade, in absolute terms, the number of people without access to these services has remained virtually unchanged because progress has failed to keep pace with population growth. Inadequate water and sanitation and poor hygiene are implicit in the high mortality rates suffered by young children (from diarrhoeal diseases, which account for over three million deaths among children under five in developing countries each year).

3. With the total amount of fresh water available fixed, population increases have had a significant negative impact on the quantity and quality of water resources available per capita. At the same time, environmental degradation and stress on the available water resources is impacting both water quality and water availability. Over-extraction of groundwater and pollution of water sources threaten the sustainability of existing technical solutions in the provision of drinking water. Climate change is expected to have increasing impacts on water resource availability throughout the current century. Consequently, it is being realized that there can be no sustainable drinking water supply without the conservation and protection of its source: the natural water cycle and the freshwater ecosystems that support it. Future challenges with regards to water supply will be resource management, conservation, restoration and protection. The use of available financial resources and technological solutions will need to be re-evaluated.

4. Lack of adequate water, as well as its quality, in the right place at the right time poses a high cost to families in fetching water, and is a loss of

national resources. The demand for water is increasing in both urban and rural areas. Increased urbanization is expected to lead to an exponential growth in the demand for water in urban areas. Unless practices change, this demand will lead to large-scale transfer of water from rural to urban areas. Demand on rural water supplies also face competition from agriculture and industry. All of these developments place extra pressures on water sources and the ecosystems that support them.

5. Provision of drinking water supply has largely been seen as a government responsibility and, under Article 24 of the Convention on the Rights of the Child, as its obligation. However, at the institutional level, the performance of many public utilities responsible for providing water supply and sanitation services has been far from impressive. Among the reasons for this are:

- the inability of the public sector and international donors to access sufficient (investment) capital;
- politicization of management;
- absence of the discipline of competition
- confusion or juxtaposition of regulatory and operational roles in state-owned enterprises;
- poor operation and maintenance; and
- lack of participation by communities and stakeholders.

6. In the past two decades the emphasis of national governments and international agencies has been on achieving coverage and meeting targets for access to water supply. Insufficient attention has been given to ensuring environmentally sustainable approaches which would have paid equal emphasis to sanitation and fresh water management, protection and conservation. Both quantity and quality of water supply threaten to become the major constraints in coming years. This presents the prospect of an exponential increase in costs unless effective water resource conservation and ecosystem protection measures are taken alongside provisioning.

7. Failure in the past to recognize the economic value of water has led to wasteful and environmentally damaging use of this resource. Although it was recognized during the International Conference on Water and the

Environment in Dublin, 1992, that it is “the basic right of all human beings to have access to clean water and sanitation at an affordable price”, it was also concluded that only by managing water as an economic good could efficient and equitable use of water be achieved, and conservation and protection of water resources be encouraged. In subsequent international fora, it has been recognized that water is both an economic and social good. The interpretation of these attributes of water has, however, lacked clarity and implementation. The Rio Earth Summit in 1992 also called for a holistic approach to water resources.

### **THE NEW PARADIGM: PRIVATIZATION AND PUBLIC-PRIVATE PARTNERSHIPS**

8. Given the causes for the under-performance of public utilities and the rising cost of provision of improved water supply, many have advocated for the application of commercial principles of operation, the broadening of competition within the water sector, and the involvement of users in the design and operation of infrastructure. Although these measures can be taken by both public and private companies, it is often argued that past failures in public provision, combined with growing evidence of more efficient and user-responsive private provision, point to the need for a significant increase in private involvement in financing, operation, and, in some cases, ownership of water utilities.

9. The trend towards increasing private sector participation in the water sector is part of the increasing globalization and liberalization of economies. As in other sectors, the pace varies between countries, but there is in an unmistakable trend in this direction.

10. Despite past failures in providing universal and improved access to water supplies in many countries, there are examples of successes in public provision. These include the Public Water Enterprises in Chile, the public water departments in Singapore and Seoul, and bulk water supply in South Africa. However, public provisioning in most of these countries is also coming under strain and has recently been transformed or is in the process of changing to alternative models of public-private partnerships.

11. While privatization and public-private partnerships (PPPs) are receiving increasing attention, it has become clear that the term ‘privatization’ is often used very loosely. Privatization, meaning the sale of a public utility, is not very common in domestic water supply. However, privatization meaning greater private sector participation in the management and private capital investment in public infrastructure, is more common.

### **MOTIVATION FOR THE UNICEF-WWF STUDY**

12. Since the onset of public-private partnerships in the water sector, questions have arisen about its impact on the more vulnerable population groups as well as on the environment. UNICEF is interested in analysing the impact of public-private partnerships in water supply on children and their families living in low-income areas, with the objective of assessing their scope for increasing and improving access for the poor, in a sustainable manner, and in protecting them from the negative consequences of PPP arrangements. Similarly, WWF is monitoring developments in the water sector to assess the implications of current trends on the environment and whether these developments can be influenced to achieve wider benefits. Children and nature go hand in hand – their futures are inextricably linked and cannot be separated in the freshwater arena or any other aspect of the environment.

13. It is in this context that UNICEF and WWF have sought to analyse the magnitude, forms and impact of the limited existing privatizations and PPP arrangements in domestic water supply. It is certainly not a foregone conclusion that these trends are always going to be beneficial to the poor and for nature. How can international agencies (government and non-governmental) and civic organizations help steer privatization and PPP arrangements so that private sector participation in water supply becomes a win-win situation for all stakeholders, both public and private? This question requires an assessment of the scale and trends of PPP and an analysis of the issues concerning service coverage to low income areas and the environment.

## SIGNIFICANCE OF PRIVATIZATION AND PPP ARRANGEMENTS

14. *Coverage and Investment Levels by PPP:* Worldwide, an estimated two-thirds of the population, or four billion people, have access to adequate water supplies; roughly one-third, or two billion, have access to appropriate sanitation. Of these, about 300 million people are provided with water supply services by private operators, and an estimated 150 million with sanitation services (which is only 7.5 per cent of those with access). The market for privatized water and sanitation services, though small at present in relation to public provision, has the potential to grow rapidly. The number of active contracts in developing and transition countries rose rapidly from near zero at the beginning of the 1990s to nearly 100 in 1997. The associated investments committed in these projects rose to a cumulative level of US\$25 billion in 1997, from zero in 1990. Considering, however, that US\$30 billion is invested each year in the water supply and sanitation sector (Global Water Partnership, 1999), the US\$25 billion that has been invested by the private sector in the period 1990-1997 illustrates that much of the investment capital still comes from the public sector. In fact, of the US\$70-80 billion invested annually in the water sector (including irrigation, drainage, and others) no more than US\$4 billion – 5 per cent – comes from private investors (Global Water Partnership, 1999).

15. *Trends in PPP:* Starting mainly in Europe, PPP has spread into Latin America, Asia, Africa, and other continents. Currently, sector reform with a view to increased private sector participation is being actively considered in many countries. In Africa, for example, 16 out of 48 countries have already introduced private sector participation, while another 19 are studying such arrangements or preparing for its introduction, albeit in only some cities and small towns. Although the growth in PPP contracts in the 1990s is impressive, it should be noted that private utilities are likely to opt for markets that promise substantial returns with as little risk as possible. In relation to the magnitude of needs, private capital investment is limited. In most instances, it is still a case of public capital for public infrastructure under private management, such as under lease or management contracts.

16. Industry estimates suggest that in the next 10 years private sector companies will invest almost US\$600 billion in world water and waste infrastructure (Water and Wastewater International, 1999). If one realizes that the water market in the United States involves as many consumers as are currently served by private utilities, and that associated investments are more than US\$350 billion, one would expect private utilities to increasingly focus on the relatively stable markets such as the US water market. A consequence of this development might be a slow down in the growth of PPP arrangements in developing countries.

17. Coupled with the fact that PPP arrangements in which there are overseas partners, particularly those requiring the private operator to invest a significant amount of capital, are faced with high political and currency risks, the prospects of large scale private capital – domestic or foreign – for public infrastructure in developing countries do not seem very encouraging. However, the prospect of private management of public utilities is more encouraging.

18. *The Private Operators:* There are about eight major players in the international water market, five of which are based in the United Kingdom and three in France. The three largest private operators are Suez Lyonnaise des Eaux, Vivendi, and SAUR, all based in France. Jointly, these French companies are estimated to control about 55 per cent of the world's privatized water market. The UK-based companies are Thames, United Utilities, Severn Trent, Anglian, and Biwater, who jointly control about 15 per cent of the market. Local operators dominate the remainder. When considered in conjunction with the fact that water utilities are natural monopolies, the limited number of private companies worldwide in this sector points to the need for clear government policies regarding PPP, as well as close monitoring and oversight of the trends towards PPP.

19. *Forms of Public Private Partnerships:* There is considerable variety in the PPP arrangements in the water sector. They can vary from public utilities that out-contract certain tasks to the private sector (service contracts), to full divestiture, where ownership and management of the utility are transferred to the private sector.

Other types of PPP include the management contract, lease, Build (Own) Operate Transfer (BOT/BOOT), and concession. In the management contract, the contractor is responsible for operation and maintenance of the system. In lease contracts, the lessor is responsible for operating, maintaining and managing the system and for collecting the tariffs. In concession contracts, the concessionaire has overall responsibility for the services, including operation, maintenance, and management as well as capital investments during the concession period. A BOT/BOOT contract involves a private operator building a plant and assuming responsibility for operation and maintenance. After a predetermined time, the facility is transferred to the public authority.

20. The significance of each of these arrangements lies in the combination of capital investment and management that they bring – with their consequent implications – at the macro level on the economy and at the micro level on access and costs to households and the poor. Each individual PPP contract is likely to incorporate unique features that are not present in any other contract. Furthermore, each utility is subject to unique conditions and (regulatory) circumstances. The variety of PPP arrangements and the unique features that many arrangements incorporate, the variation in regulatory regimes to which these arrangements are subject, and the specific environmental characteristics in which each utility operates requires a detailed analysis covering a sufficient time span for each case to reach any conclusions about the impact of privatization or PPP arrangements on low-income households and the environment.

21. With a few exceptions, such as in Buenos Aires and Côte d'Ivoire, there is limited data for a thorough assessment of the impact of privatization and PPP arrangements on vulnerable populations and the environment. However, the success of the limited experiences and the endemic problems facing public provision has propelled PPP rapidly in the policy debate.

## ISSUES AND MESSAGES BEING ADDRESSED IN THE STUDY

### Privatization/PPP and the Poor

22. *Expanding Service Coverage to Low-income Urban Areas:* The private sector is motivated by profits. It can be expected to invest in low-income urban – and even rural areas – if it is profitable to do so. The profit horizon is usually short-term but returns from investment in water supply accrue over a much longer horizon with significant up-front capital investment costs, if the service is to be affordable to people across the income groups. In terms of expanding service coverage to low-income areas, private utilities face a variety of institutional, financial, technical and social obstacles similar to the obstacles faced by public utilities. These obstacles vary from unaffordable connection fees to contractual obligations that may prohibit alternative low-cost solutions for expanding services.

23. Many PPP contracts incorporate ambitious service coverage targets, which are to be met over the coming years. By stipulating service coverage expansion targets in contracts, private utilities are stimulated to find alternative solutions to overcome existing obstacles. The UNICEF-WWF study will address the experience of service coverage for low-income areas. A number of questions are being asked: over what time span have they received improved levels of services? Has private capital and management in urban areas released resources for service expansion in rural areas? In situations where a limited number of generally better-off communities have received improved services, what are the implications for improved levels of service for the urban poor and those in rural areas?

24. *Tariffs:* Available data may not allow conclusions to be drawn about the affordability of services for low-income households under PPP arrangements. Experience from some of the existing PPPs indicates that tariffs may decrease, increase or stay the same depending on the nature of the public-private partnership arrangement and the context in which this arrangement is implemented. For example, tariffs declined in Buenos Aires, Manila West and Manila East, while they increased in Mexico City and Guinea.

However, for the low-income populations in many of the urban centres, piped-water schemes provided through PPP arrangements – in the absence of the government's ability to meet this need – hold the prospect of lower cost water compared with the alternative of purchasing water from water vendors, kiosks and the like. The poor who are dependent on water vendors and kiosks pay on average 12 times as much for water as people who obtain water from a private connection (World Commission on Water for the 21<sup>st</sup> Century).

25. The tariff structure, however, may not always incorporate mechanisms, such as increasing block tariffs or cross-subsidies, which increase the affordability of services for low-income households. The tariffs are also unlikely to incorporate any environmental costs incurred in service provision. This means that much depends on the negotiations about the nature of the PPP and the profitability trade-offs provided to private operators. Similar to the case of expanding service coverage, the contract and regulatory framework needs to be designed so as to ensure that low-income households can afford such tariffs. The UNICEF-WWF study attempts to assess the trends in tariffs in pre- and post-PPP situations, and compares them with the cost of alternatives available to the poor.

26. *Quality of Service to Low-income Communities:* The first priority that many private utilities have when they take over the provision of water supply and sanitation services is to improve the quality of the services, in the first instance, for existing customers. The reason for this, quite obviously, is that the well off are likely to be able to pay resulting bills. The issue then becomes whether the state's responsibility for, and obligation to, universal access to these services becomes diminished and that the poor and marginalized groups are again left waiting, this time for the private sector to provide services?

27. The improvement of services is largely a result of the strong customer-orientation of private utilities and the improvement of the condition of the network made to realize efficiency gains. In realizing efficiency gains, for example by reducing unaccounted-for-water, the services supplied to low-income communities are

likely to be of higher quality. In Nairobi, for example, the low-income groups are likely to be a major target group for the sale of the huge quantities of water that the private operator will obtain from the reduction of water losses. In addition, the level of service quality can be stipulated in the PPP contracts. The UNICEF-WWF study will explore the significance of this aspect of PPP in more detail.

## Privatization/PPP and the Environment

28. *Over-exploitation of Water Resources:* The increase in demand for water, partly because of population growth, but also on account of improvements in the quality of life and increases in effective demand, in conjunction with the limited availability of fresh water, has placed significant stress on the available water resources and their supporting ecosystems. It may also hold the prospect of large-scale water transfers from rural to urban areas, with consequent environmental impacts. A variety of supply and demand management measures can be taken to reduce this stress. The question to be asked is what results, such as reducing the level of evaporation from reservoirs and water channels and reducing leaks from water conveyors, have PPP arrangements made on the supply-side? And, equally, what demand measures have been taken under PPP to improve leak detection and reduction, to encourage consumers to invest in appliances and technologies that reduce water input, and to establish education and information programmes for water conservation and protection? By addressing these issues, the UNICEF-WWF study will explore whether PPP is relieving stresses on existing fresh water resources and ecosystems, or simply adding to them.

29. *Collection of Sewerage and Treatment of Wastewater:* The high costs involved in expanding sewerage coverage and wastewater treatment, the difficulty involved in disconnecting non-paying customers, and the primary importance given to expanding coverage of water supply, has meant that expanding sewerage coverage is not a first priority of private utilities in the early years of their PPP contracts. Improved levels of water supply services, often meaning increased levels of consumption, without concomitant improvements in

wastewater management and sanitation, can result in increased public health problems and damage to the environment. Unless private sector participation is greatly enhanced with increased private capital investment and management in sewerage and wastewater treatment, it is likely that PPP will result in the private sector focusing first on the more profitable water supply end of the market. It is unlikely to invest in the huge capital investment needed for sewerage and wastewater treatment. What, therefore, can be done to encourage private investment and management in sewerage and wastewater treatment?

30. Despite not being high on the priority list for private utilities, stipulating sewerage coverage targets and wastewater treatment targets in PPP contract puts pressure on private utilities to achieve these targets. Although enforcement clauses in PPP contracts may yield some results, it is questionable if they can overcome the main obstacle to expanding sewerage coverage and wastewater treatment, namely the huge investment costs required. These issues, too, will be addressed in the UNICEF-WWF study.

### **Possible Scenarios**

31. The nature and magnitude of PPP arrangements will likely evolve over time. There may be no blueprints to follow. The issue is what combination of possible scenarios in water supply provisioning will be seen in the future:

- will it end up being managed efficiently by the private sector, but at the expense of people and nature?
- will it be managed efficiently and benefit people, while the ecosystem degrades and quantity and quality pressures increase?
- will it be managed efficiently and people and nature benefit – the win-win scenario? or
- will there be no significant change and privatization and PPP arrangements fail to become significant factors in most countries?

The outcome will vary from country to country and will likely be a combination of the above scenarios. However, it is important to examine the scope and potential of PPP, identify the issues that need to be addressed and determine how the arrangements can lead to win-win situations, if they are steered in the appropriate directions.

### **Steering PPP to Benefit the Poor and the Environment**

32. Planning a public-private partnership in the water sector is not simply a matter of choosing the type of PPP arrangement and the area it will cover. The “effectiveness and consequences of a private sector arrangement depend on the regulatory mechanisms used to influence private sector decision-making and how they are implemented” (World Bank, 1997). This means that the success of a PPP arrangement will, to a large degree, depend on the roles played by public (regulatory) authorities, the communities concerned, and non-governmental organizations (NGOs) during the various stages of the privatization process and thereafter.

33. Before embarking on PPP arrangements, developing countries need to build their capacity to develop and implement effective regulatory mechanisms. These mechanisms are critical to protection consumers – particularly the poor – to ensure that there is an increase in access and improvement of services, and to provide private operators with a level-playing field and a reliable environment. It can work to the benefit of both the consumer and provider of the services. Unfortunately, many developing countries may lack the capacity – expertise and bargaining power – to negotiate with the usually foreign private sector companies, which may be in an oligopolistic situation.

34. *Exerting Influence on Stakeholders:* Every PPP arrangement operates within a legislative framework that regulates the water sector. Environmental and social standards can be anchored in this framework. Pressing legislators and governments to include social and environmental concerns in this framework will set the stage for incorporating and formalizing these issues in the framework that will, to a large degree, regulate future PPP arrangements. Setting this agenda in initial arrangements should accelerate the adoption of social and environmental criteria in subsequent concession agreements.

35. By promoting social responsibility among private operators, they can be stimulated to incorporate social and environmental concerns in their daily functioning. Pressing for corporate



mission statements or corporate philosophies on social and environmental issues can help to firmly root these issues in the staff and the day-to-day operations of these companies. By promoting and achieving socially responsible investment and management among the larger private operators, a standard can be set that will have to be followed by the smaller operators. The private sector must either see the long-term financial benefits of environmentally and socially responsible approaches in the water sector, or be induced to incorporate the costs in the price of water.

**36. *Steering the Initial Reform Process:*** A period of sector reform is likely to precede the process of privatization. After initial discussions about the need for reform and its direction, reforms are stipulated in a legislative framework. Contributing to the initial discussions and ensuring that the plight of children in low-income communities and the environment is not neglected is a challenge that needs to be integral to the PPP process.

**37. *Influencing the Legislative and Regulatory Framework of Reform:*** After initial discussions about the need and nature of reform, the reforms must be formalized in a legislative framework. Such a framework will have substantial influence on the eventual public-private partnerships by influencing the regulation that is going to control PPP operations. The regulation will decide the standards of performance and the parameters and values that the private operators will be bound by. It is essential that the legislators responsible for establishing this framework incorporate environmental standards and social concerns within it. This means a changing role for the government, from provider to legislator and regulator. Will governments in countries where the public sector has been unable to provide improved levels of service due to poor governance be able to perform this new role? In an era of globalization and liberalization, what would be the consequences for the poor and the environment if governments could not design and implement effective legislation and regulation of water utilities?

**38. *Public Involvement in PPP:*** Despite limited experience with PPP, it is striking that those projects that show early successes all have had

significant elements of public involvement. Instead of a bilateral relationship between private water companies and governments, successful arrangements seem to be characterized by a relationship that incorporates private operators, government and civil society. The way public involvement is included in PPP may be due to legal requirements, as in the United Kingdom, or due to an operator seeing the advantage of working with local stakeholders to improve service take-up, as happened in Argentina.

**39. *Monitoring the PPP Contract:*** Once the regulatory framework is in place and individual contracts designed and awarded, the role of monitoring and evaluating the impact of specific PPP contracts on low-income communities and the environment needs to be taken up by regulatory, or other independent, bodies. International agencies and NGOs may have an independent monitoring and 'honest broker' role to play rather than in providing support for service provision.

**40. *Combination of Action and Advocacy:*** Through supporting a combination of actions and advocating for improved and environmentally and ecologically sustainable water and sanitation services for all, UNICEF and WWF aim to influence privatization and PPP arrangements emerging in the water sector to achieve a win-win scenario. If these arrangements are selective in their outreach and do not live up to the needs of the poor and nature, then continued advocacy with governments and other partners to secure increased resources to fulfil the government's obligations to all children and the environment, and to improve the pace and efficiency of investments, should be encouraged.

## REFERENCES

- Global Water Partnership, *Framework for Action: Achieving the Vision: Introducing the Framework: A Preview for Consultation*, Stockholm, 1999.
- Water and Wastewater International, 1999.
- World Bank, *Water and Sanitation Toolkits*, International Bank for Reconstruction and Development, Washington, D.C., 1997.
- World Bank, *PPI Project Database*, Washington D.C., 1999.