



28th WEDC Conference

Kolkata (Calcutta), India, 2002

SUSTAINABLE ENVIRONMENTAL SANITATION AND WATER SERVICES

Similar challenges, similar solutions?

Paula Silvs-Ochoa and Klaas Schwartz, Mexico

OVER THE PAST decade(s), private sector participation (PSP), both in the irrigation and water supply and sanitation (watsan) sectors, has increasingly been considered as a possible alternative to mitigate the many problems facing the delivery of water services. PSP was introduced in Mexico in the irrigation and watsan sector in the 1990s. The nature of PSP in these sectors, however, shows considerable divergence. In addition, or perhaps as a result of the different nature of PSP, the impact of PSP seems to be much more beneficial in the irrigation sector than in the watsan sector. The progress achieved in the irrigation sector, by way of irrigation management transfer, stands in sharp contrast with the difficulties experienced with increased involvement of the private sector in the delivery of watsan services.

These differences between the two sectors seem surprising as both sectors are quite comparable, have undergone similar developments over the past decades and seem to be facing the same challenges. This would lead one to assume that a possible solution (increased PSP) to the current challenges would also be similar. In this paper we undertake a general comparison between PSP in the irrigation and watsan sectors in Mexico in order to gain a better understanding of the reasons why the nature of private sector participation in these sectors diverge so strongly. Moreover, we try to assess under what conditions, solutions facing these two sectors would be similar.

Similar developments and challenges

The characteristics of the services provided by irrigation and watsan organizations show strong similarities¹. Both are subject to high levels of excludability and subtractability of services², and both services require substantial 'sunk' capital costs³. Developments in both sectors are also comparable. In the 1970s there was a strong focus on hardware-oriented solutions to the problems facing the sectors. Over the past two decades, however, much more attention has been focussed on the management (including participatory approaches, etc.) of the existing systems, and to tailor these systems to the demands of the users.

If the challenges facing many watsan companies are examined in comparison to the challenges of many organizations in the irrigation sector again the similarities dominate. Organizations in both sectors struggle with ineffective operation and management practices of many water systems, high unaccounted-for-water levels (or inefficient conveyance and distribution), low pricing for water services, and polluted water sources (Saade 1997).

PSP in service provision in the Mexican water sector

Reforms were introduced in the Mexican water sector in the 1980s in the aftermath of a severe economic crisis. The reforms, which were part of a larger economic liberalization package, were introduced with the aim of reducing government subsidies to the water sector (Johnson 1997, Pablos 1999). In the irrigation sector reforms took the form of irrigation management transfer which can be defined as the relocation of responsibility and authority for irrigation management from government agencies to non-governmental organizations, such as water users' associations (Vermillion and Sagardoy, 1999). In water supply and sanitation, reforms consisted of a decentralization of service provision responsibilities to the municipal level⁴. With a few exceptions where State Law⁵ does not permit the awarding of concessions for public services, municipalities are free to opt for private sector involvement for the delivery of watsan services.

Irrigation and management transfer

Understanding the need for reform in the water sector, the Mexican government created the National Water Commission (CNA) in 1989. The CNA was given the explicit mandate to define a new policy for the management of the waters in Mexico (Johnson 1997). This led to the National Program for Decentralization of the Irrigation Districts (the Irrigation Management Transfer Programme) which derived from the National Development Plan (1989-1994). The National Program for Decentralization of the Irrigation Districts took shape in the form of a massive transfer of public irrigation systems to user groups. In 1996, close to 3 million hectares, representing 87% of the area under major and medium irrigation and 46% of the total area under all irrigation, was transferred to 386 water user organizations (WUO) divided over 80 irrigation districts (Saleth and Dinar 1999).

In the transferred irrigation districts, the National Water Commission provides bulk water to the WUOs, and operates and maintains headworks for which the WUOs must pay. The WUOs became responsible for operation, maintenance and management of the secondary irrigation and drainage systems.

In general, the results of the transfer scheme have been positive. O&M costs have been reduced due to better use of equipment and machinery and a personnel reduction of more than 50%. 80% of farmers surveyed in 4 irrigation

districts stated that the management transfer had improved water management and allowed for “timely and adequate delivery and maintenance of the irrigation systems” (Rogers 2002). On average, the irrigation districts have gone from a financial self-sufficiency rate of 37% in 1991 to a self-sufficiency rate of 80% in 1994⁶. The key ingredients of the Mexican transfer program were strong government commitment and policy support, favorable macroeconomic conditions, establishment of strong legal and institutional frameworks, substantial increase in farmer contribution to O&M and on-farm capital improvements, and training and communication programs (Gorriz et al., 1995).

Private sector participation in the water supply and sanitation sector in the 1990s

In the early 1990s, PSP was promoted in the Mexican watsan sector primarily as a means of acquiring much-needed capital investment and ensuring improved management practices and higher efficiency (Idelovitch & Ringskog 1995). As such, the PSP experiments that took place in Mexico frequently took the shape of more ‘far-reaching’ forms of PSP with numerous Build-Operate-Transfer (BOT) contracts and concession contracts being awarded in addition to a number of service contracts. These first PSP initiatives, especially those involving relatively strong private sector involvement were not very successful. The experienced problems strongly relate to the Mexican peso crisis of 1994/1995. Of the 50 BOT contracts awarded in the early 1990s only 11 are currently operating. In the other 39 cases, either the contract was cancelled or the plants have yet to be constructed due to a lack of financial funds. During the peso crisis of 1994/1995, when interest rates rose to over 100%, it was virtually impossible to raise the funds for the required investment. The experiences with concession contracts in Mexico show a similar poor performance. Of the eight concessions contracts that were prepared only two are currently operational and these suffered major problems in their first years. The experienced problems by the two operational contracts were related to political intervention and a government takeover of the water company. These interventions occurred after newly elected politicians insisted on altering the original agreement because of steep tariff increases following the financial crisis in 1994/1995.

In contrast to the difficulties experienced with the BOT and concession contracts less far-reaching service contracts, incorporating no private investment, have proven to be more successful. Of the 12 service contracts that were awarded, 8 were actually operational⁷.

Although the early experiments with private sector involvement appear to have been unsuccessful, the problems facing the watsan sector in Mexico continue to make private sector involvement an appealing option for many municipalities⁸.

Potential for private sector participation and the relation with poverty alleviation

Although in actual functioning the two sectors are highly similar, a fundamental difference reveals itself when examining the possibilities of charging cost-recovering tariffs for service provision. It appears that charging cost-recovering tariffs in the irrigation sector is virtually impossible due to the fact that most irrigation services are provided with the aim of alleviating poverty⁹. Although the provision of both watsan services as well as irrigation services can have a strong poverty alleviation component, the nature of that poverty alleviation component differs between the two sectors.

In the case of the irrigation sector, provision of services is directly geared towards generating income for a large number of farmers by supplying an essential resource in the agricultural production process. The poverty-alleviation function of service provision in the irrigation sector has a number of important consequences for the nature of privatization in the sector. First of all, it more or less excludes the possibility of full cost recovery because if these farmers would have to pay commercial (i.e. non-subsidized) tariffs for the water they use for irrigation, many would not be able to earn a sufficient income. This means that the government will have to continue to provide considerable subsidies to ensure service provision. A consequence of the continued government subsidies is that, in the irrigation sector, privatization became a process where service delivery was privatized to water user associations instead of (foreign) multinationals¹⁰.

In the watsan sector, more potential exists for charging cost-recovering tariffs¹¹. The consumers’ willingness to pay cost-recovering tariffs for potable water leads to greater opportunities for government to attract the private sector for service provision. In the case of Mexico these opportunities were utilized to access much-needed investment capital from the private sector. This meant that the forms of private sector participation that became prevalent in the watsan sector were BOT contracts and concession contracts. However, the Mexican political and economic context in the 1990s (with frequent political changes and economic instability), was not very conducive for the far-reaching forms of privatization, which included private sector investment.

Conclusion

In the previous section we have argued that the main factor explaining the different development of private sector involvement in the irrigation and watsan sectors was the diverging potential for charging cost-recovering tariffs.

We would expect that in conditions where the potential for charging cost-recovering tariffs is similar for both sectors, the development of private sector participation would also be similar. This means that in parts of Mexico where cost-recovering tariffs are not possible any develop-

ment towards PSP will likely follow the lines of management transfer as witnessed in the irrigation sector. Similarly, in cases where irrigation services are provided for high value crops, the potential for PSP to incorporate a degree of private sector investment increases.

Notes

- ¹ This goes specifically for irrigation schemes with a flow control system able to give a similar level of service as a water supply company, i. e. on demand or on semi-demand water supply. Also, a water source out of the end user control, i. e. large-scale irrigation schemes.
- ² Subtractability refers to the impact that consumption by incremental users has on consumption opportunities of all users. Low subtractability - consumption by one user does not impede availability to other users. Excludability refers to the feasibility of controlling access to a good. High excludability means it is relatively easy (non-costly) to prevent users from using it. High sunk costs imply low contestability (Kessides 1993).
- ³ Capital costs are 'sunk' to the extent that they cannot be recovered for other uses (Kessides 1993).
- ⁴ Article 115 of the Mexican Constitution
- ⁵ Mexico is a Federation counting 31 states and 1 Federal District. 25 of the 31 States allow for the awarding of concessions for public services in their administrative laws.
- ⁶ In most of the irrigation districts, water fees have increased after the management transfer. The percent increase for 1992-1994 period ranges from 45% to even 180% (CNA, 1994)
- ⁷ It must be noted, however, that the impact on utility performance of these contracts was also very limited because service contracts only involve outsourcing part of the tasks undertaken for service provision (often not core-tasks).
- ⁸ With required investments estimated at US\$ 5.8 billion over the next 8 years by the National Water Commission, many municipalities will be looking towards the private sector for funds.
- ⁹ Although the poverty alleviation objective is often not explicit, it is implied by the fact that more than 50% of the irrigated land appear to be low-productive agriculture. The low productiveness of agriculture is partly due to the cropping pattern, which is strongly oriented to cereals (35%) and forage (25%). Moreover, 85% of Mexican farms contribute only 15% of agricultural products (FAO 2002).
- ¹⁰ This has made the privatization process less controversial in comparison with privatization in the watsan sector. Part of the controversy surrounding privatization in the watsan sector revolves around the dominance of huge (foreign) multinational corporations in the market. Two French multinationals (Vivendi and Ondeo) dominate the market by owning or having interests in water projects in more than 120 countries and each serving ca. 100 million people (Gleick et al. 2002).

¹¹ In light of the fact that consumers of water delivered by informal vendors on average pay 12 times more per m³ of water as consumers with house connections, the most important issue with regard to poverty alleviation in the watsan sector is increasing service coverage to populations currently unserved rather than the price of service provision.

References

- Commission Nacional del Agua (1994), *Programa de Traferencia de Distritos de Riego 1990-1994*, Avance al 31 de julio de 1994, Mexico City: Commission Nacional Agua.
- Food and Agriculture Organization (2002), *United States of Mexico*, <http://www.ciesin.org/decentralization/English/CaseStudies/mexico.html>.
- Gleick, P., Wolff, G., Chalecki, E. and Reyes, R. (2002), *The New Economy of Water: The Risks and Benefits of Globalization and Privatization of Fresh Water*, Oakland: Pacific Institute.
- Gorritz, C., Subramanian, A. and Simas, J. (1995), *Irrigation Management Transfer in Mexico: Progress and Progress*, World Bank Technical Paper 292, Washington D.C.: World Bank.
- Idelovitch, E. and Ringskog, K. (1995), *Private Sector Participation in Water Supply and Sanitation in Latin America*, Washington D.C.: World Bank.
- Johnson, S. (1997), *Irrigation Management Transfer in Mexico: A Strategy to Achieve Irrigation District Sustainability*, Research Report 16, Colombo: International Irrigation Management Institute.
- Kessides, C. (1993), *Institutional Options for the Provision of Infrastructure*, World Bank Discussion Paper 212, Washington D.C.: World Bank. Pablos, N. (1999), *Urban Water Policy in Mexico: Municipalization and Privatization of Water Services*, Austin: University of Texas.
- Rogers, P. (2002), *Water Governance in Latin America and the Caribbean*, Washington D.C.: Inter American Development Bank.
- Saade, L. (1997), 'Toward More Efficient Urban Water Management in Mexico', *Water International* Vol. 22 No. 3, International Water Resources Association.
- Saleth, R. and Dinar, A. (1999), *Water Challenge and Institutional Response (A Cross-Country Perspective)*, Policy Research Working Paper 2045, Washington D.C.: World Bank.
- Vermillion, D. and Sagardoy, J. (1999), *Transfer of irrigation management services, guidelines*, FAO Irrigation and Drainage Paper No.58, Rome.: Food and Agriculture Organization of the United Nations, FAO/ International Water Management Institute, IWMI/ Deutsche Gesellschaft Fur Technische Zusammenarbeit, GTZ..

PAULA SILVA-OCHOA, Mexico.

KLAAS SCHWARTZ, Mexico.