Access to water in developing countries: four options for provision and regulation in the water sector

Raymond Saner*, Lichia Yiu, Mario Filadoro and Victoria Khusainova

Centre for Socio-Eco-Nomic Development (CSEND),
PO. Box 1498, Mont Blanc CH – 1211 Geneva 1, Switzerland

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Water plays a central role in the life of society. However, factors such as population growth, pollution and poor allotment and distribution mechanisms place severe pressures on adequate and equitable water supply. The principle of universal and consistent access to clean water is a key part of the Millennium Development Goals and a major component of the post-2015 Sustainable Development Goals. Provision of water has to be efficient, sustainable, accessible and affordable for all – especially in developing countries. The water issue arises from the capacity of governments to expand water networks and maintain or improve infrastructure in order to supply water to their citizens and particularly to their most marginalised populations. In response, the discussion here contributes to the debate about whether and how water should and can be provided by governments only or with private and social sector participation. Four options are addressed, with a significant conclusion being that private sector participation in water provision necessitates rigorous public regulation to enforce standards and ensure adequate and affordable access to water resources.

Keywords: water provision; water regulation; water management; access to water; public provision; privatisation; public-private partnerships; cooperatives; developing countries

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*Email: saner@csend.org

Introduction

Water plays a central role in the life of society. However, factors such as population growth, pollution, and poor allotment and distribution mechanisms place severe pressures on adequate and equitable water supply. It is necessary for the provision of water to be efficient, sustainable and accessible for all. The principle of universal and consistent access to clean water – necessary not only for overall health but also for disease prevention – has led to one of the most consequential UN Millennium Development Goals (2015) on the global agenda: specifically, MDG target 7.C, which aims to "halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation."

The water problem arises from difficulties many developing countries face when trying to expand water networks and maintain or improve the water infrastructure in order to supply water to their citizens and to their most marginalised populations. Between 1990 and 2012, 2.3 billion people gained access to improved safe drinking water sources, and more than half the world's population now enjoys the highest level of water access: a piped water connection at their homes.

While there have been significant gains in the availability of fresh water, access to this resource remains a major problem in many parts of the world. Access has been defined by Schaffer (1985) as a key component of the policy process. The politics of access to bureaucratically distributed goods are meshed with the politics of social institutions and material interests, and the boundary between state and society becomes blurred.

In the developing world, access to clean sources of water can mean the difference between life and death, since unfiltered or unpurified water can be a vector for diseases such as cholera, or poorly maintained water provision systems can contribute to the spread, for example, of malaria, E. coli, dysentery, legionellosis, and dengue fever. Industrial use of water increases with country income, going from 10% for low- and middle- income countries to 59% for high-income countries. In high income industrial countries, the industrial sector consumes around 60% of water, while in poorer developing countries around 10%. Globally, agriculture and industrial use of water represent more than 90%, with domestic use being around 8%. Water use poses challenges in access and sustainability of the resource for domestic use (WBCSD, 2015a).

Competing uses of water continue to make access to affordable drinking water a struggle for low-income households. For this reason, some countries have reprioritised the importance for water allocation, thus giving greater weight to the water sector which also reflects the growing trend toward the treatment of water as a human right. Changing environmental circumstances around the world – especially desertification and groundwater salinisation – are creating an urgent need for efficient water management and water sharing practices. Any effort to implement new water provision techniques, whether through PPPs or the public sector alone, must ensure through regulation and specialised policy frameworks that other major users of water, namely industry and agriculture, are employing sustainable practices in their consumption of water

resources. It must also ensure that clean and affordable drinking water is made available to the poorest segment of the population.

Another pressing question is what exactly constitutes access to constant water supply. This may range from water connections directly in the home to outdoor wells and to public "standposts on the street corner" to itinerant vendors. In this sense, "water supply is not a single, well-defined intervention, but can be provided at various levels of service with varying benefits and differing costs" (Jamison, et. al., 2006).

The argument supporting private sector participation (PSP) points to the private sector's ability to provide additional investments and to relieve financial constraints at the government level related to the construction, operation and upkeep of infrastructure used for supplying water. This advantage is magnified in developing countries, whose governments are often overburdened with economic constraints of all types which stand as one of the most prominent reasons why international organisations such as the IMF and World Bank champion intervention by the private sector in cases of shortage of adequate water supply. Some policy advisers believe that the private sector increases the efficiency of water provision by following the guidance of market principles. However, despite such private sector intervention, a large proportion of the population remains without access to safe drinking water.

The privatisation of water has been compared to the privatisation by other utility industries such as electricity and telecommunications, but scholars consider the case of water to be different due to its nature as an essential human need. Here, the proponents of government provision of water argue that access to water is a human right and that water resources should be treated as a common good that cannot be commodified. In either case, the socio-political issues associated with provision of a scarce resource like water must be taken into consideration. Such issues include transparency, accountability and affordability (Naren, 2007, p. 219).

Water provision: moving from Millennium Development Goals to Sustainable Development Goals

Water provision is a key element of the international development framework. The UN places water at the core of sustainable development. A platform was developed to address water issues. UN-Water is a coordination mechanism which provides a platform to address the cross-cutting nature of water and maximises system-wide coordinated action and policy coherence. UN-Water (2015) "promotes coherence in, and coordination of, UN system actions aimed at the implementation of the agenda defined by the Millennium Declaration and the World Summit on Sustainable Development as it relates to its scope of work."

In June 2012, the Rio+20 conference on sustainable development in Rio de Janeiro, Brazil, was a major step forward in defining pathways to a safer, more equitable, cleaner, greener and more prosperous world for all. The outcome document of the "Rio+20 –The Future We Want" (UN, 2015a) states:

> We further recognize the importance and utility of a set of sustainable development goals . . . The goals should address and incorporate in a balanced way all three dimensions of sustainable development and their interlinkages. They should be coherent with and integrated into the United Nations development agenda beyond 2015 . . . The development of these goals should not divert focus or effort from the achievement of the Millennium Development Goals.

In line with this statement, the proposed SDGs also include water as a critical element for sustainable development. Water access and the provision of water are included in the SDG Zero Draft (2015) under goals 6 and 14. The Zero Draft of Addis Ababa Accord on "Finance for Development" (UN, 2015b, pp. 3, 13) includes specific references to water. This document provides a framework for the financing of sustainable development in order to deliver the means of implementation for the development agenda. The references to water include:

> Ensuring productive and healthy lives, delivering equitable education, reducing inequality, ensuring access to water, sanitation and sustainable energy, and finishing the unfinished business of the Millennium Development Goals (MDGs) - will rely primarily on domestic public resources, supported by international cooperation and partnerships.
>
> We call for a new initiative to ensure sufficient investment in sustainable and resilient infrastructure, including transport, communication, water and sanitation and energy, in all countries. Working with on-going initiatives, we will identify gaps and constraints, help ensure that projects are environmentally, socially and economically sustainable, share knowledge and experiences, bring together different stakeholders and help mobilize financing from all sources.
>
> We acknowledge the critical importance of biodiversity in poverty reduction and social and economic development, and recognize that investments in marine, freshwater and terrestrial ecosystems are part of the solutions to financial crises, food crises, water crises and natural disasters.

The four international policy documents referred to above – the MDGs, the Rio+20 "The Future We Want" outcome document, the 2014 SDG Zero Draft, and the 2015 Zero Draft of Addis Ababa Accord on the Finance for Development – highlight the importance of improved

access to water as a critical element for sustainable development. Accordingly, water management needs to be further strengthened in order to ensure universal access to water.

Options for water provision and regulation

Overview

Miranda, et. al. (2011) distinguish four different conceptions of the water sector. First, water (drainage, sanitation, recycling and reuse) as an economic good or a commodity also includes an integrated water resource management focus. Second, water (and sanitation) is considered as a human right and a social good. Third, water (drainage and ecological sanitation) is seen as a socio-ecological good, as a human right, and as the right of other living beings and ecosystems, emphasising that water is a finite and vulnerable resource. Fourth, water is seen as a sector, as an economic good and a renewable natural resource. The approach conceiving water as a resource sector is the one which promotes stakeholder dialogue and participation. In the last decades, there has been a general shift from an emphasis on state provision (public service delivery) to private provision based on market principles and, more recently, to a multi-stakeholder approach. (Miranda, et. al., 2011, pp. 7, 9).

In many developed and developing countries, water is provided by a government authority using public infrastructure. In some cases, this system is successful in reaching most households; but in others, corruption prevails and infrastructure deteriorates as funding to this sector diminishes. Where public provision is judged inadequate, municipalities often turn to private sector participation, which can be divided into two main categories: full privatisation and public-private partnerships, with the latter, which can be further split into different varieties of partnerships, being the most common form of privatisation. Another option is cooperative ownership and management of water. Table 1 compares the basic conceptions, advantages and disadvantages of the four main approaches to the organisation and management of water.

Table 1. Four options for the management of the water sector.

	Public	**Private**	**Private-public partnership**	**Cooperative**
Conception of water management	A human right and a social good	An economic good or a commodity	An economic good and a renewable natural resource	A socio-ecological good, an economic good and a renewable natural resource
Advantages	Protection against customers' exploitation Equitable distribution of services	Access to unserved areas High level of competition	Increased competition during tendering stage Inflow of private capital Private sector knowledge, technology and capacity	Voluntary and open membership Education, training and information Concern for the community
Disadvantages	Lack of political will to charge cost-recovering tariffs Inefficient operation Exposed to cross-subsidisation to other government services	More expensive than network water Environmental concerns Price fixing could occur	Private monopoly can erode public power Inequitable supply Lack of transparency with regulator Little voice for consumers	Lack of awareness of their business potential among governments and the general public Lack access to loan finance to help them expand their business Lack of technical knowledge and access to new technology

The debate between proponents of these options for provision of water remains so tense that some countries have passed laws banning privatisation (including countries both in the developing world, such as Nicaragua and Uruguay; and in developed countries like the

Netherlands). Yet, the choice between supplying water publicly or privately does not need to be definite; instead, it can be subject to change depending on circumstances and often occurs in cycles of privatisation and de-privatisation over long periods of time" (Pérard, 2009, p. 214).

Fully public

The public sector supplies water to approximately 90% of the world's population (Gunatilake & Carangal–San Jose, 2008, p. 2). The goal is not to generate a profit, but rather to deliver a common good to the public. In many countries, this responsibility falls under the jurisdiction of individual municipalities, which typically manage water services through a particular department or a distinct water board.

Unfortunately, municipal providers in middle- and low-income countries constantly suffer from financial, legal and institutional constraints, as well as political interference that often leads to low labour productivity and over-staffing, all of which pose a challenge for providing high-quality service (MIT, 2015). The meddling of politics with public service, especially in the area of personnel management, can lead to a digression of focus from poor neighborhoods that need services the most in favour of more politically-influential ones. In addition, collective pressure to maintain low prices can trap a municipality into a position in which not only does it fail to extend water networks to un-served areas, but it can also barely afford even to maintain its existing water infrastructure. Overall, such challenges interfere with water accessibility for low-income households, ultimately invoking the question of whether public provision actually has the ethical pursuit of the common good in mind.

One of the main advantages of government provision in the water sector remains the vast opportunities to exploit the economies of scale of this option in the long run, thus reducing the cost per unit of supplying the utility. Also, municipal providers can foster cooperation between different departments on various water-related activities, and can thus bring together specialists from diverse fields to work on improving the efficiency of water provision (MIT, 2015). The sense of social responsibility present in effective municipal water utilities can boost their public image (Gunatilake & Carangal–San Jose, 2008, p. 6).

Against the possible wide-range of benefits, public providers can experience non-market failures which occur when governments intervene in supplying water and, thus, might allocate resources more inefficiently than a private company operating under market conditions. This can occur due to the lack of competition, such that "pressures on the water utilities to increase efficiency and to pass the gains on to consumers [are] very weak or [nonexistent]" (Gunatilake & Carangal–San Jose, 2008, p. 7). Such circumstances often explain the poor performance for which the government sector is usually criticised in the water industry.

Market failures invite government action in terms of policy interventions or public provision of goods and services. However, governments sometimes are not able to intervene and correct market failures due to an inability to organise efficient and effective regulatory governance mechanisms. Government failures occur with more severity in developing and low-income countries "where they could barely cover operational costs, [thus] leaving no surplus available to finance the expansion of water networks." Often in developing countries, the ubiquitous nature of government failures creates a downward spiral characterised by "weak performance incentives, low willingness of customers to pay, insufficient tariffs to recover costs, and lack of funding for maintenance, ultimately leading to a deterioration of assets and squandering of financial resources" (Gunatilake & Carangal–San Jose, 2008, pp. 2-3).

In order to minimise the risk of government failures, several operational aspects of the public water utility could be improved. Gunatilake and Carangal-San Jose (2008, p. 4) argue that internal and external accountability can be increased by holding all managers and employees involved in supplying water responsible for maintaining the utility's "effectiveness (the degree to which the utility realises its goals) and efficiency (the cost-effectiveness of resources used to produce water).". The internal accountability can be supplemented by earmarking more budget resources for staff training and development to ensure the employment of best practices in the workplace and to promote a thorough understanding of the importance of providing these services. The external accountability can be strengthened by increasing the representation of stakeholders who could provide a counterbalance to the short-term objectives of intervening politicians, as well as including participation by customer organisations and non-governmental organisations. In the process, public providers can help prevent non-market failures by becoming more customer oriented and regularly seeking customer feedback on services. This means increasing "strong oversight capabilities, routine customer satisfaction surveys, and a flexible partnering approach between those who monitor and the operator" (Gunatilake & Carangal–San Jose, 2008, p. 5).

All of these approaches can contribute to assessing customer needs more effectively and to improving service quality accordingly. In developing countries, however, populations that are scattered and are primarily rural create technical challenges for such advances due to their fragmentation and resulting inaccessibility. In such cases, small scale independent providers often take up the water provision role, operating individually at kiosks or delivering water on bicycles. These service providers, while generally quite reliable since they "invest their own resources in the business," can increase the cost of water for the poor populations they serve, who end up paying much more for water access than wealthier households with a regular water connection (MIT, 2015).

A reduction in market failures through both internal and external accountability measures and customer feedback could benefit the low income, isolated families. Also, because the public sector accounts for the vast majority of worldwide water provision, these improvements can

potentially make a tremendous difference in the lives of those who currently have little or no access to water.

Full privatisation

Historically, "private initiatives were instrumental in establishing modern water supply systems, which led to privately owned or operated systems" (Prasad, 2007, p. 219). In fact, private provision was the dominant method used in most European countries and in the United States from the mid-1800s, until the public sector took over the businesses due to complaints of inefficiency, high costs and corruption.

In the case of full privatisation, government assets related to water supply are permanently sold to private investors. Because of the extreme and long-lasting nature of such a decision, this type of privatisation is largely non-existent. It is limited to particular contexts, including the United Kingdom, Chile and parts of the United States.

There is often a strong bias towards privatisation from a neoliberal economic policy standpoint, commonly based on the arguments or assumptions of increased efficiency and improved service quality that would result from handing water supply services over to the private sector. In reality, this is not always the case, but many countries – especially developing countries – have turned to private sector participation in water provision as a consequence of "increasing debt burden, fiscal and macroeconomic burdens, public health crisis and ideological shifts" (Prasad, 2007, p. 226).

When a commodity such as water is placed in the private sector, price and quantity determination are left up to the interplay of market forces – thus, in theory, generating supply and demand equilibrium and leading to an optimal allocation of resources and increased efficiency. However, this is based on an assumption of perfect competition in the marketplace, which is not the case for this particular resource. The water industry is, in essence, a natural monopoly (Foldvary, 2006), such that creating the infrastructure necessary to fulfill the related services becomes a costly barrier to entry for competing firms and results in the first or largest company maintaining its cost advantage over others, while simultaneously increasing its economies of scale. On achieving monopoly status, the supplier can lose incentive to produce more. This can potentially cause a market failure when prices are higher than the marginal cost for the firm (leading to allocative inefficiency and disequilibrium), with a social welfare loss being generated by its raising prices and restricting output (Gunatilake & Carangal–San Jose, 2008, p. 2). In response, to prevent utility companies from exploiting their monopolies in such a way, the water industry must be strictly regulated by the government either setting a price that

the firm can charge for its services, or fixing a percentage of profit above cost that it can retain (Foldvary, 2006).

Despite these shortcomings, from 1990 to 2005, "55 countries (representing 383 projects) . . . introduced some form or other of PSP in the water sector" (Prasad, 2007, p. 227). This was especially "after the collapse of the USSR, [when] the privatization of state industries became important for the countries that were formerly centrally planned and where most industry was state owned" (Dore, Kushner & Zumer, 2004, p. 41).

Whether or not a government decides to privatise water on a small or large scale should depend on its assessment of an efficiency advantage. This economic concept is a useful measuring tool for ascertaining the benefit or disadvantage of private provision over public supply. It stipulates that in order for a private firm to have an absolute efficiency advantage, the following are required to attain the highest possible consumer surplus: "(a) its product is superior in terms of quality, (b) it can supply the good at a lower unit price, and (c) the production does not entail any negative externalities" (Dore, Kushner & Zumer, 2004, p. 42).

Public-private partnerships

Public-private partnerships (PPPs) currently represent the most common form of private sector participation in the water sector. Under a PPP, governments work with private companies, delegating to them certain functions of supply while maintaining public ownership of the assets, thereby combining the strengths of both public and private supply systems to enhance the resulting benefits.

PPPs characteristically involve long-term provisions of service and come in a wide array of different forms, thus allowing for significant flexibility in choosing the right option for a particular region. The spectrum of PPPs revolves mainly around the allocation of risks and responsibilities to different degrees between the public and private partners, and divides into two encompassing categories: joint ventures which entail shared responsibilities, and contractual PPPs (UNECE, 2008).

A particular type of contractual PPP – the concession model – remains the most common form in the water sector, "bringing private sector management, private funding and private sector know-how" together to provide a service financed by user fees (United Nations Economic Commission for Europe, 2008, p. 1). There are models where public authorities rather than individual users pay for the service that is provided by the private partner, and many types of contracts with varying management and lease arrangements generally for shorter periods of time than concessions (IRCIWSC, 2012).

PPPs in water provision are often a means to lower cost, heighten levels of service, and reduce the risk experienced by the public sector. This type of cooperation can bring forth innovation from the private sector (eg., in delivery infrastructure) and can increase the probability of completing projects both on time and on budget. Besides improving service quality and increasing efficiency, PPPs offer crucial new financing tools to help overcome infrastructure deficits that arise when a government's tax base alone can no longer adequately fund the infrastructure required for providing water to its constituents (UNECE, 2008, pp. 5-6).

PPPs are distinct from full privatisation in that the public sector remains accountable for the delivery of services to its customers, and no complete transfer of utility ownership to the private sector occurs. Establishing PPPs for water, as with virtually any other industry previously controlled by the public sector, requires multiple steps, and thus cannot be completed overnight. This helps to explain why the PPP programmes initiated by many countries are not yet fully developed.

Despite the advantages that PPPs offer in the field of water provision, most countries are still only in the first phase of PPP development, with few actual projects underway. The primary reason behind this slow progress is a combination of the need to establish new institutions and functional procedures, and the need to gather a type of public expertise that will push such projects forward successfully and track their progress over time. Among the many factors that influence the success of PPPs, the most critical are good governance and a "clear [national] framework of law and regulation", with fewer but better laws put into place (UNECE, 2008, pp. 29-30).

One of the central concerns of private sector participation in water supply is the tendency of subsequent tariff increases to isolate economically and socially disadvantaged populations. In PPPs, since the government remains actively involved, it is thus vital that it places safeguards on water supply to "ensure ongoing public access" to the service and protect those who would be most affected by elevated prices (UNECE, 2008, p. 62). Accordingly, PPPs hold considerable potential for successfully providing water services, but currently remain an under-used model whose implementation will likely grow over time as countries realise its benefits and work to accommodate such a system.

Cooperatives

Cooperatives increasingly facilitate access to clean water services by providing alternative ways for urban communities to get clean water. Water cooperatives set up water delivery systems in neighbourhoods that otherwise would have no access to water services. For example, SAGUAPAC in the Bolivian city of Santa Cruz is the largest urban water cooperative in the

world, with 183,000 water connections serving 1.2 million people (being three quarters of the city's population) with one of the purest water quality measures in Latin America (ICA, 2012). In Africa, cooperatives in Ghana, Ethiopia and South Africa have used fair trade rebates to drill boreholes and establish local groups for maintenance. In the US, cooperatives formed to provide safe, reliable and sustainable water services at reasonable cost are the most common organisational form of water provision in small suburban and rural communities. There are 3,300 water cooperatives in the US, providing water for drinking, fire protection and landscaping irrigation, and often wastewater services (UWCC, 2013).

Utility cooperatives, according to the World Bank (2006, p. 2), were "initially created to provide utility services, mainly in rural areas, where investor-owned utilities would not expand due to insufficient profitability." Their services are usually provided at at-cost prices. The main advantages of this approach are the voluntary and open membership of cooperatives, with the possibility of directly providing water-related education, training and information of concern to communities. On the other hand, cooperatives face many challenges such as the lack of awareness of their business potential among governments and the general public, the lack of access to loan finance to help them expand their business, and the lack of technical knowledge and access to new technology (ILOICA, 2013).

The cooperative model depends on whether the external conditions provide an enabling environment for cooperative principles to be put effectively into practice. According to the World Bank (2006, p. 24), in such an environment the cooperative model

> could be introduced either by transformation of an existing utility or by start up of a greenfield utility cooperative. In both cases, the design and practices of the cooperative are critically important. The cooperative model is not an end in itself and does not guarantee success . . . [C]areful consideration [is necessary] of whether and how the cooperative model can be adjusted in its design and practices to suit the particular circumstances of a given city and country.

Views of international organisations concerning water provision

The high costs of financing and maintaining water supply networks in low-income countries – about 0.70-6.30% of GDP (Prasad, 2007, p. 229) – are largely because initial infrastructure is either lacking or insufficient. In response, international financial institutions and development banks have generally been proponents of privatisation as a means of promoting investment and capital flow into the water sector of these countries. Since the 1990s, the World Bank has adopted a strong position in favour of privatised water.

International donors, including but not limited to the IMF and the World Bank, wield high degrees of influence when it comes to the internal financial policies of recipient countries. In this regard, privatisation of water management has often been considered as the recipe for solving the safe drinking water provision problem for large portions of the population in developing countries. Though, in recent years, the World Bank has come to realise the difficulties involved in attracting and maintaining large capital investments in developing countries (especially through experiences with failed privatisation efforts), and that affordability and the profitable operation of a water service rarely go hand-in-hand (Prasad, 2007, pp. 229-230)

The UN, the OECD and other international organisations and NGOs also exert significant influence over states in terms of negotiations for acceptable standards and suggest practices for sustainable development. For instance, the UN's Dublin Statement of 1992, which declares water as containing an economic value and therefore asserts the need to recognise it as an economic good, has been "used to justify the commercialization of water supply," even though it implies the principle of full cost recovery, thus contradicting access to water as a fundamental human right regardless of ability to pay (Prasad, 2007, p. 231).

The UN's view of water privatisation has become abstruse after it declared access to water a human right, turned the expansion of access to water into one of its Millennium Development Goals, and issued a statement suggesting that several factors (political, institutional, cultural and social) contribute to the success and/or usefulness of private sector participation in a country's water sector (Prasad, 2007, p. 231). Like the World Bank, the UN has also recognised the problems in attracting private investment and implementing PPPs in the water sector, particularly since it was discovered that "the private sector [was] not interested in going to countries (or zones) where it [was] most needed, especially to poorer countries" (Prasad, 2007, 231).

The United Nations Environment Programme (UNEP) has proposed a new water governance and management paradigm which is encapsulated in the integrated water resources management (IWRM) concept. IWRM has been defined as "a process which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems" (GWP, 2015). Collaborative action is fostered to reverse the present trends of overconsumption, pollution and rising threats from drought and floods.

The water governance facility (WGF) of the UN Development Programme (UNDP) provides strategic water governance support to developing countries to advance socially equitable, environmentally sustainable and economically efficient management of water resources and services to improve the livelihood of poor people. The WGF (2015) works with water governance in multiple thematic areas such as integrated water resources management and

development, transboundary waters, water supply and sanitation, climate change adaptation, gender and water, and water integrity.

Private sector participation (PSP) in water provision has been analysed by the United Nations Research Institute for Social Development (UNRISD). Research by UNRISD shows that PSP in water resources has had mixed results and that the private sector is not more efficient than the public sector. It also shows that, in most cases, PSP has not delivered as expected. Despite growing failures and increasing public pressure, the PSP debate is still open (Prasad, 2006).

The OECD supports inclusive water governance. The results of a survey indicate that 34 water regulators show a strong culture of consultation (OECD, 2015a). Consistent with this, a recent report (OECD, 2015b) highlights

> the increasing importance of stakeholder engagement in the water sector as a principle of good governance and the need for better understanding of the pressing and emerging issues related to stakeholder engagement. These include: the shift of power across stakeholders; the arrival of new entrants that ought to be considered; the external and internal drivers that have triggered engagement processes; innovative tools that have emerged to manage the interface between multiple players; and types of costs and benefits incurred by engagement at policy and project levels.

Other organisations such as the World Economic Forum (WEF) and the World Business Council for Sustainable Development (WBCSD) are also interested in water management. The WEF Global Agenda Council on Water aims at building on the wealth of existing knowledge and studies on the topic, and at developing a workable access model in a way that combines the key elements of water access and sanitation (WEF, 2014). The World Business Council for Sustainable Development (WBCSD, 2015) recognises water as a critical sustainable development challenge, particularly in terms of availability, quality and security. It highlights the importance of water as a necessary input in the manufacture, delivery and use of virtually all products and services.

At the regional level, organisations such as the Asian Development Bank have assessed private sector participation in water services. According to a recent report (Gunatilake & Carangal–San Jose, 2008, p. 1):

> the limited success of private sector participation is due to prevalence of strong demand and willingness to pay, effective regulation, good governance and contract enforcement and innovative measures to create competition . . . Experience also showed that public water utilities can work well when anchored on reforms with ingrained internal and external accountability, customer orientation, and autonomy.

Donor countries include water management and resources in their sustainable development strategies. For example, Switzerland is campaigning for the sustainable use of water resources. At the World Water Forum in the South Korean city of Gyeongbuk, participating countries adopted a declaration defining political priorities for the efficient use of water, a resource that is in short supply. Switzerland, which has adopted the declaration and was heavily involved in drafting it, will be lobbying during the World Water Forum to get the responsible use of water resources included on the post-2015 agenda (SFA, 2015).

Conclusion

Water has been labeled a human right for good reasons. Lack of safe drinking water contributes to numerous health issues and concerns. It is estimated that globally 622,000 children under the age of five die each year from diarrheal disease (WHO, 2012), which is the 4th leading cause of child deaths, with a majority being water-related. The lack of safe water has also had secondary and tertiary health and economic consequences.

Expanding public access to safe water has been high on the political and development agenda. To this end, the challenge has not been necessarily one of scarcity of resources, but one of governance. Although MDG target 7.C has arguably been achieved on a global level, many individual country targets remain unmet. Nearly 80% of the world population currently without access to safe drinking water reside in rural areas, making the issue of extending coverage all the more difficult, often because the initial infrastructure for water utility connection is non-existent in these areas. Also, when considering the overall goal of extending the reach of safe drinking water provision, it is important to keep in mind that the cost or affordability of this resource poses a challenge in that increasing availability does not always mean increasing access for the poor.

Responses to the issues of safe water scarcity, unequitable accessibility and uneven coverage require innovative financing modalities to make the necessary infrastructure investment possible. Such investment requires not only major financial resources, but also higher risk tolerance, especially in remote, mountainous and desert territories.

Financial responses need to be accompanied by appropriate regulation. This consists of setting quality standards and ensuring transparency, public consultation and acceptable but also sustainable prices.

Overall, it is important to address water management in the context of development and, more directly, of the emerging post-2015 agenda SDGs (Yiu & Saner, 2014). There is no single, universal solution to worldwide water provision. Rather, the decision on what type of provision system to adopt must be made by each country independently, taking into consideration individual national circumstances and possibilities, as well as consultation with civil society and the private sector. The processes leading to such decisions should be supplemented by research and support from NGOs, other civil society organisations and, to some extent, international organisations – so long as political influence from these sources remains at a minimum level or is eliminated altogether. Also, international organisations, especially those concerned with financing development matters, such as the World Bank, Inter-American Development Bank (IADB) and IMF, instead of placing a contingency on their aid disbursement upon acceptance and implementation of a narrow set of water provision system requirements, should invest in unique plans for water provision devised by each developing country that will be the most economically, environmentally and socially sustainable in the long run. Only then can sustainable development in the water sector be achieved, access to all marginalised populations encompassed, efficient practices established, human health improved, and water security enhanced for current and future generations.

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