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# Water for Food Security and Well-Being in Latin America and the Caribbean

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## Chapter 11

Reforming water governance structures

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# REFORMING WATER GOVERNANCE STRUCTURES

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## Highlights

- Achieving long-lasting water and food security needs to be based on a solid foundation, represented by governance institutions that are able to ensure a fair framework for development. During the past three decades Latin America and Caribbean (LAC) has undergone significant institutional water reforms triggered by a number of factors, among which are the demands from civil society for more inclusive, sustainable, efficient and effective water governance, as well as the influence of international organizations promoting the introduction of Integrated Water Resources (IWRM) and other paradigms in LAC water governance structures.
- Some common trends in those reforms include: a shift towards decentralization, often complemented with the creation of coordination and supervising bodies at a higher level; the formulation of new water laws and policies that include a number of IWRM principles (environmental sustainability, integration, participation, accountability, transparency, cost recovery, etc.); the legal support of the right to water and sanitation; and the creation of water use levies and tariffs for cost recovery.
- In some countries the focus is now on adjusting and implementing those reforms, while others are still in the process of debating and formulating them. The main challenges for the implementation of ongoing reforms are related to the lack of integrated planning of water use, the poor coordination of the main stakeholders (both governmental and non-governmental), and the need for management instruments that may fit local conditions better.
- In its search for improved water security, LAC has pioneered the recognition of the access to safe water and sanitation as a human right. The countries' attention is now on the implementation of that right. The inclusion of the right to water and sanitation in most of the constitutional texts or laws is a first important step, which, however, has to be followed by clear financial and regulatory efforts.
- During the past three decades, private and public domestic operators have participated in the provision of water and sanitation. The analysis of past experiences suggests that the focus of reforms should be on creating favourable conditions for a quality and equitable service, which can be achieved only through ensuring strong governance, in general and specific for water.

- Funding of the water sector remains a challenge; governments struggle and usually fail to meet financial requirements. Despite the gradual introduction of tariffs and charges, revenues from the water sector are still insufficient to cover its financial needs. International public and private investors play a key role in filling that gap, with a clear emphasis on the development of infrastructure for domestic supply provision.

## 11.1 Introduction

A constant challenge worldwide is set by the need to count on adaptive institutions that strengthen democracy and promote growth and social development. In Latin American and Caribbean (LAC) countries there is a clear need to improve access to water, guarantee the quality of water for all uses, and enhance ecosystem services (Akhmouch, 2012). This makes the challenge of improved water governance particularly present and pressing in LAC countries, which often lack adequate institutional water systems (Cruse and Gandhi, 2009; Akhmouch, 2012; Jiménez-Cisneros & Galizia-Tundisi, 2012). This chapter focuses on ‘blue’ water governance, which is a key instrument to achieving water security, while it does not deal *explicitly* with food security. Indeed, although well-performing water institutions do contribute to water security and therefore to food security (Chapter 1), the governance structures framing food security lie outside the water sector. As for green water, in other chapters it is pointed out that key inputs to agriculture and food production are water (blue and green) and land, whose use and management are strongly intertwined in practice but normally managed by different institutions. While this chapter focuses on the governance of the blue part of the land-water system, the institutional framework dealing with land and ecosystem management is discussed in Chapter 14.

Water governance can be defined as a system that makes water management more effective, accountable and participatory, thus strengthening the role of multiple stakeholders in institutional capacity building, improving coordination, broadening participation and consolidating partnerships (Jacobi, 2009). Water governance structures in some LAC have undergone reforms that implied not only re-orientation of policy priorities and approaches, but also the restructuring of institutional frameworks. This has led to the need for new intermediate institutions that enable a negotiated approach to water governance. Two issues hamper the capacity of institutions to improve and adjust to constantly changing conditions: the lack of proper evaluation of the quality of policies – often a consequence of lack of transparency and accountability that may favour some actors and their private interests over others; and the lack of adequate control over bureaucratic systems. Institutional reforms involved changes in the ‘rules of the game’, expressed by the coexistence of formal laws, informal norms and practices, and organizational structures, as well as strengthening institutional capacity.

The analysis of institutional experiences in the past two decades indicates a wide range of water governance approaches in LAC, which is telling that water management is a social and political issue as well as a technical one. The need to reform institutions has been mainly driven by the fact that the State had to respond to growing demands from civil society and, in particular, from economic sectors to improve its actions. Institutions are also reformed in order to respond to the need to improve their transparency, stimulate social capital, strengthen accountability, promote public interest, reduce institutional obstacles, and improve policy implementation and performance of the public and private sectors.

This chapter deals with water governance and its institutional reaches in LAC, with a special focus on Brazil, Chile, Costa Rica, Mexico and Peru. It first revisits the circumstances that triggered reforms undertaken in the different countries, and presents some reflections about their implementation currently and in the future. Then, the chapter analyses some of the elements that characterize institutional changes promoted by those reforms, while it leaves to other chapters of this book the in-depth description of other aspects (e.g. participation, transparency and accountability, economic instruments, etc.). With that perspective in mind, the role and characteristics of the legal systems for water use that frame and enable water governance, the recognition of the right to water and sanitation as a human right and the conditions needed to ensure its implementation are analysed. Finally, the chapter deals with the challenge of funding reforms and with how countries tap into national and international sources in order to address this issue.

## 11.2 Institutional setup: past, present, future

In this section, the main characteristics and challenges of reforming water governance structures are considered. The legal and organizational systems presented here constitute the framework within which four different types of actors operate: the state (public) institutions; market (private sector) institutions; activist (NGO) institutions; and civil society in a broad sense (Allan, 2013). Most of the water is used by the private sector (farmers, agribusiness, mining companies, etc.) as one input to their production activity. For these actors the market is the main driver determining production choices and the associated water uses (*ibid.*). One of the main tasks of the water institutional setup presented in this chapter is framing the use of water as a production input and ensuring that it is compatible with long-term water security.

### 11.2.1 Water reforms in LAC: triggers and trends

Since the 1980s, virtually all countries in the LAC region underwent institutional reforms of their water sector (Jacobi et al., 2009; Hernández et al., 2012) or at least have engaged in a lively debate on how to adjust their water institutions to new challenges posed by the need to address water and food security both as a country and at the scale of urban and rural communities. These reforming processes have been triggered by a number of factors. First, countries need to adjust to new and unseen socio-economic dynamics and the alteration environmental processes brought about by globalization and a strong economic

development largely based on the exploitation of natural resources (see Chapters 3 and 4). For instance, in Peru water policy reform was driven by the need to update the 1969 General Water Law, which presented limited cohesion between water quantity, water quality and environmental considerations and did not recognize the economic value of the resource (MINAG, 2009). Second, processes of democratization have spurred demands from society for more inclusive, effective and environmentally sustainable water governance, which had to be reflected in an upgrade of water institutions. Thus, in Brazil the main driver for reforms was the need to approach water management from a regional standpoint and the need to consider the multiple uses of water, as well as the effects of their interrelations (Jacobi et al, 2009). Third, in some cases, major political changes have triggered water reforms. For instance, in Chile the major Water Code reform was driven by the shift towards a more decentralized political context. Economic liberalization enacted during the military regime of 1973–1989 included the 1981 National Water Code, which established transferable water use rights and facilitated water markets (Hearne and Donoso, 2005). Last but not the least, multilateral players – mainly the World Bank and the Inter-American Development Bank – and different international cooperation agencies are often perceived as important drivers of reform and as providers of comprehensive technical and financial support, as well as pro-reform decision-makers (Castro, 2007; Wilder, 2010).

Reforms have taken place mainly through the modification of the legal system and often with the approval of a new Water Act (see Section 11.3); the definition of water resources policies and guiding principles for water management; and in some cases even through bottom-up, informal reforms that have tried to anticipate or adjust top-down mandates to the local contexts (Kauffman, 2011). As a result, LAC countries exhibit coexistence of different approaches to the right to water and water services (as a human right, as a commodity, as a public service); coexistence of a set of formal and informal rules and standards that define different institutional models of water management; and coexistence of multiple state, private and social actors involved in decision-making processes (Hernández et al., 2012). Indeed, different political systems, political-administrative structures and institutional arrangements for water governance define the dynamics of public, private and public capacities for management with different performance results, according to the history and background of each country.

Being aware of the difficulties of generalizing when considering a diverse region such as LAC, it is useful to point out some features of the institutional setting that can be observed in some of the countries. Several LAC countries have decentralized at least some water functions (Table 11.1). In those decentralized models, domestic water supply and sanitation is usually transferred to the local level, while higher-level sub-national governments are responsible for water resources management (Akhmouch, 2012). The decentralization process often has gone hand in hand with the definition of the river basin as a water management unit (see Chapter 2), and in Peru specifically the 2009 Water Act reinforces the need to decentralize water management (participation of users, national regional and local government in the decisions process). In Colombia, the reform of the constitution in

1991 and the subsequent approval of the 1994 water legislation aimed to strengthen private water management institutions, increase private participation in the operation and redefine the role of government in providing public services. In that context, the state’s main role is to regulate, support, plan and control the provision of these services, thus driving a process of decentralization and privatization in water management, transferring the operation of water services to the private sector (Hernández et al., 2012).

**Table 11.1 Allocation of responsibilities in water governance at sub-national level and the role of the central government in selected LAC countries**

| COUNTRY     | ROLE OF CENTRAL GOVERNMENT<br>(dominant actor or joint role with sub-national governments) | ALLOCATION OF ROLES AND RESPONSIBILITIES IN WATER POLICY DESIGN AND IMPLEMENTATION                  |
|-------------|--|---|
| ARGENTINA   | Joint  | Municipalities, inter-municipal bodies, Provinces, River basin organizations                        |
| BRAZIL      | Joint  | Municipalities, Waters-specific bodies, States  |
| CHILE       | Dominant   | Municipalities  |
| COSTA RICA  | Dominant   | Municipalities, Inter-municipal bodies, Regions, River basin organizations                          |
| MEXICO      | Dominant   | Municipalities, Regions, Waters-specific bodies, River basin organizations                          |
| CUBA        | Dominant   | Regions, Municipalities, River basin organizations  |
| DOMINICAN R | Dominant   | River basin organizations   |
| EL SALVADOR | Dominant   | Municipalities, Inter-municipal bodies, Waters-specific bodies, River basin organizations           |
| GUATEMALA   | Joint  | River basin organizations, Municipalities.  |
| HONDURAS    | Joint  | Municipalities, Inter-municipal bodies, Waters-specific bodies                                      |
| NICARAGUA   | Joint  | Regions, Municipalities, Inter-municipal bodies, Waters-specific bodies, River basin organizations. |
| PANAMA      | Dominant   | Municipalities, others (water committees)   |
| PERU        | Joint  | Regions, Municipalities, Waters-specific bodies, River basin organizations                          |

Source: own elaboration based on Akhmouch (2012).

A second feature common to several LAC countries is the increase of participation of stakeholders in decision-making processes (see Chapter 12), with special emphasis on the role of water users, which in some cases have acquired large control over water use through their associations. For instance, in Mexico the 1992 National Water Law, modified in 2004, created watershed councils to promote and facilitate – at least on paper – the participation of civil society organizations in planning, decision-making, implementation and monitoring of the national water policy at a basin level (Wilder, 2010). In the new institutional design, however, the federal water management agency CONAGUA assumed a policy making and overseeing role and retained key strategic functions (*ibid.*). In Chile, the 1981 Water Code significantly reduced the State’s intervention in water resources management to a minimum and increased the management powers of water

use right holders, organized into water user associations (Hearne and Donoso, 2005). However, multiple central authorities (ministries, departments, public agencies) continue to be involved in water policy making and regulation at central government level (Donoso, 2014).

While decentralization of water management and participation of water user organizations have been common features in some countries (e.g. Brazil, Chile, Mexico, Peru and Costa Rica), differences arise when taking these guidelines into practice. Brazil and Mexico, for example, implemented decentralized management and established the watershed as the management unit. In Chile, users and water users associations play a central role in the administration of water rights and there have been only timid attempts to establish river basin master plans (Hearne and Donoso, 2005). In Peru, the institutional landscape is characterized by partial decentralization to manage water at a basin level and the establishment of the National Water Authority in charge of managing water resources by basin (Kuroiwa et al., 2014).

The strong demands for democratization and for well-functioning institutions – both in general and in the water sector – has caused vigorous claims for increased accountability of all those involved in determining, influencing or implementing public policies. This has promoted important advances, at least on paper, in terms of transparency and accountability in the LAC region. These advances have often originated from outside the water sector but undoubtedly their effects can be perceived also within it (see Chapter 12).

Another feature common to several LAC countries is the definition of national or regional water policies and strategies that recall principles of IWRM such as policy integration, coordination and cooperation, integrated management of different water sources, environmental sustainability, public participation, planning at a watershed level (Regional Process of the Americas, 2012). Brazil represents a good example of this. During the 1980s, the degradation of Brazil's water resources in areas of large urban-industrial concentration led to pressure from civil society in favour of the improvement of water sources. Thereby, consensus was reached around the need for: the creation of a national water resources system considering multiple water uses, the adoption of references for regional management, decentralized and participatory management, a national water resources information system and technological and capacity development in the area (ANA, 2002; Jacobi et al., 2009). The Water Law came into force in 1997 and consisted of the basic legal text that created the Water Resources National Policy and the National Management System of Water Resources. The resulting policy is based upon four basic principles: a) adoption of the water basin as the management unit; b) the consideration of multiple uses; c) water as an economic good, with an economic value, encouraging its rational use; and d) participatory and decentralized management, providing opportunities to users and the organized civil society to participate in decision-making processes (Barth, 1999; Pagnoccheschi, 2003; Jacobi, 2004). In a similar way, Costa Rican water policy establishes among its goals the achievement of a balance between the use of water resources for human development and the sustainability of ecosystems. The guiding principles for accomplishing this are: integrated water resources



management, establishing the human right of access to drinking water and basic sanitation, considering water a public-domain good, using a comprehensive ecosystem approach, encouraging the participation of all stakeholders, and the polluter pays principle.

Other common features that can be identified in the evolution of water institutions in the region are discussed in other sections of this chapter: the legal recognition of the right to water and sanitation and its implications in terms of implementation (Section 11.4) and the early stages of the reinforcement of water tariffs and charges as a means to increase revenues for the water sector and to improve water use efficiency (Section 11.5).

### **11.2.2 Implementing water reforms: the way forward**

In the LAC countries there are both external and internal variables that cause water institutions to operate below par despite the formulation of water reforms. External factors are related to the overall trends in governance and levels of economic and human development already analysed in other parts of this book (Chapters 4 and 6), which constitute crucial enabling conditions for the success of any substantial improvement of water governance. When looking specifically at the water sector, the as yet limited citizen participation, the mismatch between hydrological and administrative boundaries and the insufficient capacity of local and regional governments in relation to their responsibilities have been identified among the most important challenges when designing water policy in several LAC countries (Akhmouch, 2012; Table 11.2).

Moreover, the lack of coordination across administrative levels and sectors creates a duplication of some functions and activities, inefficiencies in the allocation of resources, insufficient and partial performance of certain functions, overlap between institutions, and conflicts of power between them. In this context, institutional problems have led to excessive delays in processing and management decisions; technical shortfalls in the implementation of tasks; and lack of the necessary financial and human resources to carry out the assigned functions (Hernández et al., 2012).

Mexico and Brazil represent two of the most advanced and modern water governance systems in Latin America due to the legislation and institutional reforms focused on watershed management and societal participation, but the implementation of their institutional reform is still under way. For instance, in Brazil there are significant differences between states and also between Water Basin Committees in relation to the consolidation of the current decentralized institutional model (Bechara Elabra and Magrini, 2013), which points to the complexity of the ongoing institutional restructuring. To complete institutional reforms, this restructuring needs to be fully implemented and the National Water Plan be approved. In addition to the modification of the territorial model, major changes are linked to an increased process of privatization of services through public–private partnerships so as to ensure investments that governments are not able to afford. Meanwhile in Mexico there is a need to coordinate the decision-making process and improve communication between different sectors, so as to reach agreement and allow for different stakeholders to participate in decisions. According to Serrano (2007), the consolidation of the reform is incomplete, and the lack of regulations is causing a bottleneck situation within the process.

**Table 11.2 Main challenges in water policy making and their relative importance in selected LAC countries**

| MAIN CHALLENGES IN WATER POLICY MAKING                      | VERY IMPORTANT   | SOMEHOW IMPORTANT  | NOT IMPORTANT                               |
|---|--|--|---|
| Limited citizen participation                               | Argentina, Chile, Costa Rica, Guatemala, Mexico, Nicaragua, Panama             | Brazil, Dominican Republic, Honduras, Peru                       |   |
| Horizontal coordination across ministries                   | Argentina, Brazil, Costa Rica, Dominican Republic, Honduras, Nicaragua, Panama | Chile, Guatemala, Mexico, Peru                                   |   |
| Mismatch between hydrological and administrative boundaries | Brazil, Costa Rica, Dominican Republic, Guatemala, Nicaragua, Panama, Peru     |  | Argentina, Honduras                         |
| Local and regional government capacity                      | Chile, Guatemala, Honduras, Mexico, Nicaragua, Panama                          | Argentina, Brazil, Costa Rica, Peru                              |   |
| Vertical coordination between levels of government          | Brazil, Dominican Republic, Guatemala, Honduras, Panama                        | Argentina, Chile, Mexico, Nicaragua, Peru                        |   |
| Economic regulation   | Chile, Guatemala, Mexico, Panama, Peru   | Argentina, Costa Rica, Dominican Republic, Honduras, Nicaragua   |   |
| Managing geographically specific areas                      | Argentina, Chile, Costa Rica, Panama   | Honduras, Nicaragua  | Brazil, Dominican Republic, Guatemala, Peru |
| Allocation of water resources                               | Guatemala, Mexico, Nicaragua, Panama   | Chile, Dominican Republic, Honduras                              | Argentina, Brazil, Costa Rica               |
| Horizontal coordination among sub-national actors           | Costa Rica, Honduras, Panama, Peru   | Brazil, Chile, Dominican Republic, Mexico, Nicaragua             | Guatemala                                   |
| Managing the specificities of rural areas                   | Chile, Costa Rica, Panama  | Argentina, Dominican Republic, Honduras, Mexico, Nicaragua, Peru | Guatemala                                   |
| Managing the specificities of urban/metropolitan areas      | Argentina, Chile, Panama   | Brazil, Costa Rica, Honduras, Mexico, Nicaragua, Peru            | Dominican Republic, Guatemala               |
| Enforcement of environmental norms                          | Costa Rica, Mexico, Panama   | Chile, Dominican Republic, Honduras, Nicaragua, Peru             | Argentina, Brazil, Guatemala                |

Source: own elaboration based on Akhmouch (2012).

Although operational principles (e.g. accountability, transparency, equity) are established, there are still complications related to the definition of responsibilities and functions.

In Chile, among the internal problems, the principal one is quite possibly the lack of a superior public authority that effectively coordinates all functions performed by public and private institutions in relation to water, supported by the enforcement of water user organizations (Hearne and Donoso, 2005).

In Costa Rica the approach to water resources management has been expressed through a Water Policy and a National Plan of Integrated Water Resources Management. However, these policy instruments are still not fully effective in changing water management practices, since administrative, operational and regulatory roles between government agencies and other water users have not yet been well defined (Astorga, 2010).

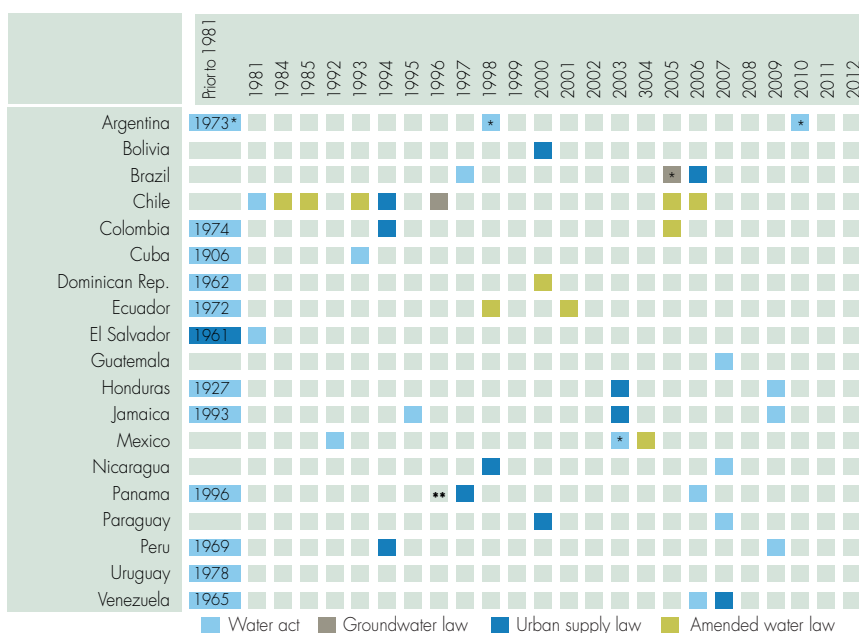
## 11.3 Legal nature of water and water rights

Whereas the general organizational setting and overall principles define the actual (or target) framework for water governance, the legal nature of water (who owns it, who can use it and how) represents the basic ‘bricks’ or, more precisely, the ‘foundations’ of the ‘institutional building’ in each country. Any change in the organizational system and any attempt to change the water policy orientation will have to take into account the water rights system and decide whether to adjust to it, make little amendments or engage in a far-reaching (and far more challenging) reform of those legal foundations.

When talking about water rights in a given country, as a starting point one ought to consider whether it has a Water Act or not. Most of the LAC countries do have one, which for the most part was passed or amended during the past decade. In many cases, the Water Act is complemented with legislation specific for domestic supply and in other cases there is only domestic water supply legislation (Figure 11.1). Having a Water Law, however, does not necessarily imply that this includes all the elements that are widely accepted to be considered good water management principles, especially in the case of Water Acts prior to the 1990s. Additionally, even in the most modern Water Acts, where these issues are included, their formulation or degree of implementation is often lacking (e.g. see Chapter 12 for public participation provisions; Chapter 15 for management at a river basin level).

### 11.3.1 Ownership of water resources

Unique features distinguish water from other natural resources: mobility, variability and uncertainty in supply, bulkiness, indivisibility, diversity of social, cultural and environmental functions, sequential and multiple use, interdependency among uses and users within a given river basin system, and conflicting cultural and social values. These characteristics can lead to multiple market failures, such as vulnerability to monopoly control and natural monopolies, imperfect competition, externalities, sub-optimal allocation of public-good attributes, risk, uncertainty, imperfect information, and potential for social and environmental inefficiencies and inequity. Institutions must address these failures in order to ensure efficient resource use and allocation. Thus, water is different from an ordinary commodity, although it can be traded using due caution. It is a free access and sometimes a common good, which, in absence of regulation is characterized by non-exclusion and rivalry and thus is prone to free riders. The characteristics of water have important consequences concerning its ownership, water rights systems, management institutions,



**Figure 11.1** Timeline of the approval of the Water Act, domestic supply legislation and specific groundwater law in selected LAC countries. One asterisk indicates laws that apply only to part of the country’s territory (province or state). Two asterisks: it is a law on natural resources with a specific section on water. Source: own elaboration based on data from WaterLex and FAO Legal Office WaterLex.

and conflict-solving mechanisms (Hanemann, 2006). Thus most regulatory schemes consider the establishment of exclusive access through the definitions of water use rights.

In most legal systems, water belongs to the public domain of the State. The principle of public ownership and control is a feature of both Western and Eastern water law (Bonfante, 1929; Wohlwend, 1975; Caponera, 1992; Ke, 1993). In general, legislation in the LAC region defines water as a ‘public domain’, ‘national waters’, ‘national goods of public domain’, ‘property of the Nation’ etc. Public ownership of water resources is the principle in force e.g. in Argentina, Brazil, Chile, Ecuador and Mexico, along with other LAC countries (see Table 11.3). However, similar terms do not mean the same thing in different countries. For example, the concept of public property in Chile has little to do with the features found in other countries.

### 11.3.2 Water rights

Although water belongs to the public domain, water use rights granted to economic agents are protected as private property. A system of secure and stable water rights is an incentive for investments in the development and conservation of water resources, and prevents the social unrest that would result from ignoring existing uses at times of change

**Table 11.3 Ownership of water in selected LAC countries**

| COUNTRY        | OWNERSHIP OF WATER <sup>1</sup>  |
|----------------|--|
| ARGENTINA      | The provinces have the original dominion over the natural resources existing in their territory.   |
| BRAZIL         | Ownership of water resources rests with the Union and, in some cases, with the states.   |
| CHILE          | With few exceptions, water is national property.   |
| CUBA           | Ownership of water resources is vested originally in the State.  |
| DOMINICAN REP. | All waters in the country, without any exception, are the property of the State.   |
| ECUADOR        | Surface and underground water resources [...], including those which were previously privately owned, are deemed to be national property and for public use.   |
| GUYANA         | The State is the owner of all waters of the country and its rights of use.   |
| MEXICO         | The ownership of land and waters within the boundaries of the national territory corresponds to the Nation.  |
| PANAMA         | All waters within the national territory are public domain goods belonging to the State and belong to it.  |
| PARAGUAY       | Surface and ground waters are public domain property of the State.   |
| PERU           | Natural resources, renewable and non renewable, are patrimony of the Nation.   |
| URUGUAY        | Surface waters as well as subterranean waters, except for rainwater, integrated into the hydrological cycle constitute a unitary resource of public interest, which, as the public hydraulic domain, constitutes part of the public domain of the State. |
| VENEZUELA      | All the waters are goods of public domain belonging to the Nation.   |

Source: own elaboration based on data from FAO Legal Office *WaterLex*, *WaterLex Legal Database on the Human Right to Water and Sanitation*, [www.senado.gov.ar](http://www.senado.gov.ar), [www.congreso.gob.pe](http://www.congreso.gob.pe), and [www.tsj.gov.ve](http://www.tsj.gov.ve).

in water legislation (Conac, 1991). A water right is usually a right to use (i.e. withdraw water or dispose polluting effluents). Ownership normally means a usufructuary power, and not ownership of the body of water itself (Getches, 1990; Tarlock et al., 2002). However, property rights to water use are conditioned.

### 11.3.3 Conditions on water rights

In most countries water rights are complemented by a requirement of effective and beneficial use. In virtually all jurisdictions, the allocation and permanency of water rights are contingent upon allocating them to a socially recognized beneficial use (CEPAL, 1995). When water rights are not utilized they are lost under the forfeiture and abandonment provisions of water legislation. Other conditionalities on water rights include provisions concerning no harm to third parties and the environment. Furthermore, in some countries water rights have been adjusted as new knowledge developed or conditions change, since the government has a permanent duty to monitor the use of water, under public trust obligations. Rights not subject to conditionalities of effective and beneficial use facilitate monopolization and have other negative features in cases of water trade: they can be traded according to their nominal entitlements, and not on the basis of effectively consumed

<sup>1</sup> Non-official translations.

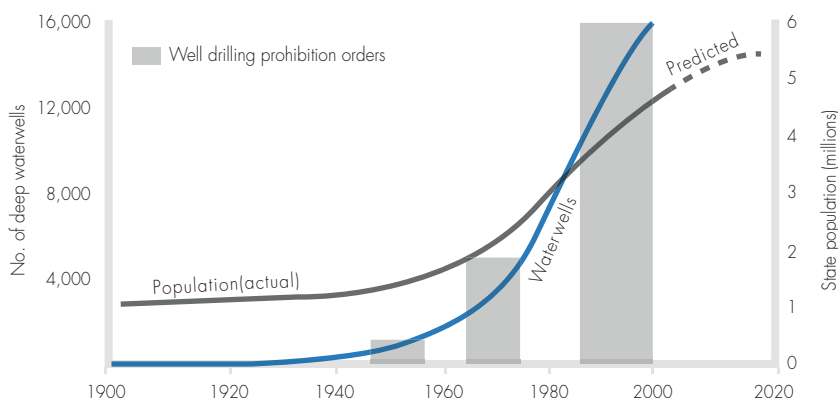
water. Chile allows the trading of nominal water entitlements, just as Australia does. As a result, trade deprives the environment and users of export areas of water, available so far. Negative externalities to the environment and third parties are thus difficult to control (Young, 2010, 2011, 2012; Donoso, 2011).

### 11.3.4 Theory versus practice

It is worth mentioning the difference between written water law and its implementation in practice. It is possible to find Water Acts that are very elaborated and complete, but this does not necessarily mean that they are fully implemented and enforced on the ground. Shortcomings in this sense can be observed in the management of water resources by river basin, the limited role of water tariffs, the difficulties associated with the protection of water and water ecosystems or the achievement of true public participation. Pitfalls in the design and reliability of water rights registers are also common even in countries with a well-developed legal water system as is the case of Chile. This is particularly important in the case of groundwater, where the establishment and continuous updating of registers of water use rights is considered to be crucial in laying the foundations of groundwater management (GEF, 2012).

Even if in Argentina, Brazil, Colombia or Mexico the situation is notably better than in the remainder of the region, LAC still faces challenges in terms of designing and enforcing more advanced legal water systems. For instance, the poor application of environmental laws to protect water quality is a clear shortcoming in the region, where mining, industry and even urban areas can be non-compliant with the law without serious legal or economic consequences (see for instance Chapter 9). This also applies to the non-compliance in other sectors, as is the case of the Madre de Dios river (Peru). Here there is illegal exploitation of gold following intense deforestation and large amounts of mercury are used to separate gold from the metal ore. There is no control of the effluents, which are left untreated and cause severe water pollution (Kuroiwa et al., 2014). This suggests that water protection cannot be achieved only with water-related laws and that, in any case, their effectiveness is linked to a global improvement of the rule of law, poverty reduction and the building capacity of the local population.

Another notable gap – which is not unique to the region (De Stefano & Lopez-Gunn, 2012) – is the enforcement of groundwater water rights (GEF, 2012). Groundwater is a classic example of common pool resource and for this reason it is prone to overuse in the absence of sound management practices. An example of poor enforcement of legal regulation can be found in the Guanajuato State, where the economy and a fast-growing population have led to the drilling of around 17,000 wells since the early 1970s. Those wells ten years ago were abstracting approximately 4,000 Million m<sup>3</sup>/yr (about 1,200 Million m<sup>3</sup>/yr more than the renewable resource). Aquifer depletion was occurring at rates of 2–3m/yr, and had important effects on water security in the area (Foster et al., 2004).



**Figure 11.2 Growth of population and water well drilling in Guanajuato State, even during well drilling prohibition orders.** Source: Foster et al. (2004)

In the 1990s the Mexican federal government made major efforts to register and control groundwater abstraction, including the issuing of three well-drilling bans, but the number of deep wells experienced a sharp increase despite the bans (Figure 11.2). Thus, the lack of capacity for field implementation and the clash of interests between the law and socio-economic trends favoured by groundwater use caused lack of consistent enforcement of the bans and pointed to the need for finding solutions to aquifer depletion not only based on command-and-control approaches (Foster et al., 2004).

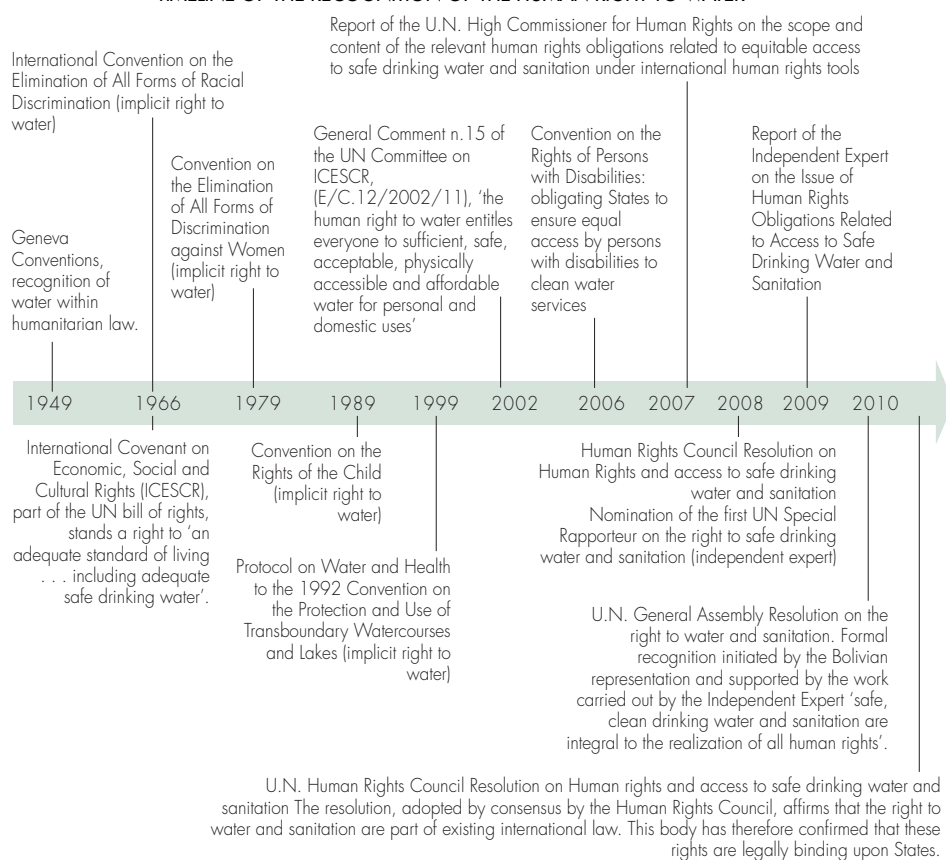
## 11.4 The recognition of the human right to water and sanitation and the MDGs

In LAC the access to adequate water and sanitation is still a major challenge, both in terms of the share of population served and in terms of the need to address large spatial and social disparities in the service coverage (Chapter 6). There is no doubt that addressing this challenge is not just a matter of building water infrastructure but also a matter of counting on institutions that are able to create favourable conditions (regulatory, financial, social) that allow infrastructures to meet the goal they were designed for. For instance, if institutions fail in preserving the ecosystems that actually provide water, it will be increasingly more difficult (and expensive) to actually supply the pipeline network with good quality water. If institutions fail in setting up a sound and long-lasting system to finance the operation and maintenance of existing water distribution and sanitation systems, the quality and equity of the service will inevitably suffer. Thus, the broad recognition in LAC of the right to safe and clean drinking water and sanitation as a human right could act as a starter or a catalyst for institutional reforms.

In July 2010, the United Nations General Assembly (UNGA) formally recognized the right to water and sanitation as a human right (HRWS), essential for the full enjoyment of life and all human rights (UNGA 64/292). The human right to water and sanitation entitles everyone to sufficient, safe, acceptable, accessible, and affordable water and

sanitation services for personal and domestic uses, which are delivered in a participatory, accountable and non-discriminatory manner (WASH, 2012). Two months later the Human Rights Council affirmed by consensus that access to water and sanitation was a legally binding human right (HRC 15/9)<sup>2</sup> (Figure 11.3). During the last decades, claims and international pressure mounted for the recognition of the HRWS, with a parallel claim, particularly rooted and strong in LAC, of a series of environmental rights (Chapter 14). The UNGA resolution has now shifted attention towards the implementation of the human right to water, towards adequate financing, ‘capacity building’ and technology transfer, as well as adequately allocating responsibilities at international and national levels.

### TIMELINE OF THE RECOGNITION OF THE HUMAN RIGHT TO WATER

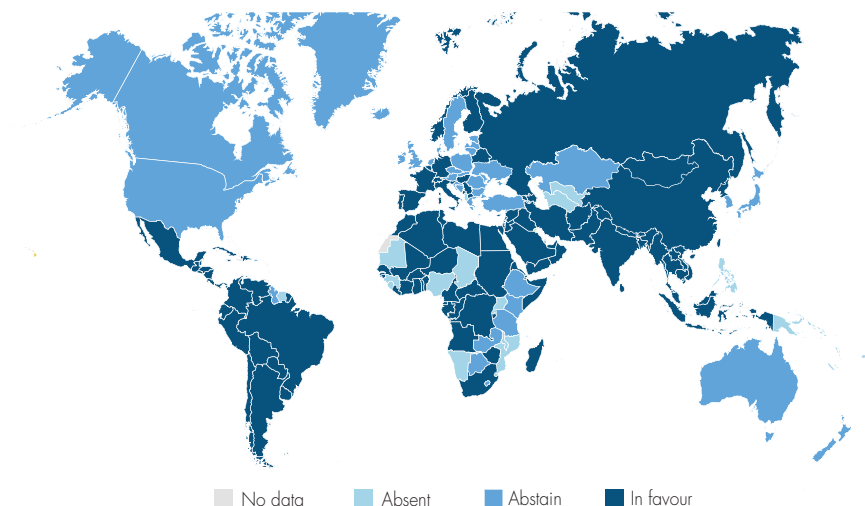


**Figure 11.3 Timeline: international legal and political recognition of the human right to safe water and sanitation.** *Source: modified and updated from Maganda (2011).*

<sup>2</sup> The Human Rights Council confirmed that the human right to water and sanitation is derived from Articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights and is therefore legally binding on the 160 countries which have ratified the Treaty (status as of 18-02-2013).



The large majority of LAC countries voted in favour of the above-mentioned UN General Assembly resolution (Figure 11.4), reinforcing a new generation of solidarity and collective rights such as the right to environment. However, as often happens, the main stumbling block is in their implementation. At the interim evaluation of the Millennium Development Goals (MDGs) presented at Rio+20 in June 2012, statistics looked promising. According to the Joint Monitoring Programme<sup>3</sup> (WHO-UNICEF, 2012), 94% of the population have secure water access and 80% have access to sanitation, although these measures have been questioned by newer indicators (Flores et al., 2013). However, statistics hide great interregional disparity, differences between urban and rural, a marked diversity in the quality, sustainability and efficiency of water services, as well as notable differences between wealthy and poor areas in the same country (Chapters 4 and 6). As LAC is a region characterized by great income distribution inequality, it is essential to look beyond national coverage rates to understand the challenges ahead.



**Figure 11.4 Map on voting for UN General Assembly resolution recognizing the human right to safe drinking water and sanitation.** *Source: own elaboration*

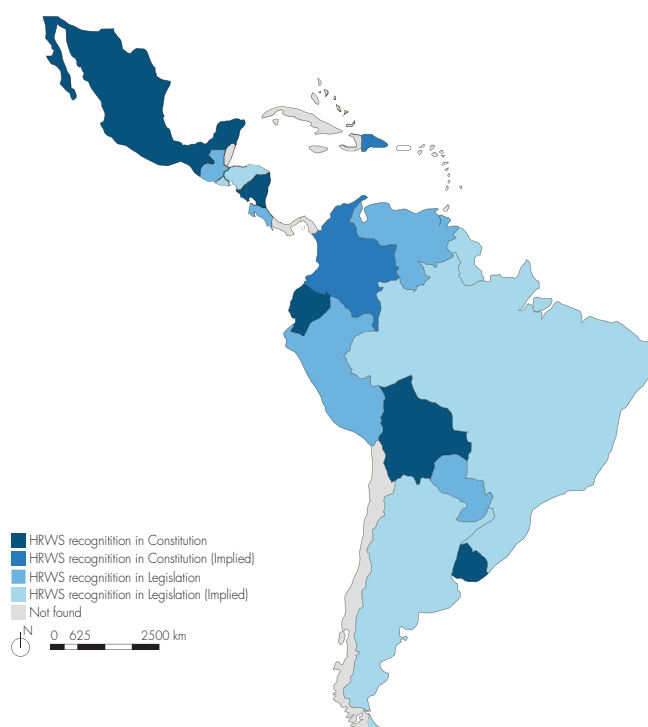
States' international human rights obligations require them to go well beyond the targets set in the MDGs (for a methodological discussion see: Easterly, 2007; Albuquerque, 2012), whose indicators do not include or account for basic components of the human

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<sup>3</sup> The Joint Monitoring Programme of World Health Organization (WHO) and UNICEF measures the progress in meeting the MDG targets on water and sanitation to 'halve, by 2015, the proportion of people without sustainable access to safe drinking-water and basic sanitation'. It establishes categories of what are 'improved' and 'unimproved' sources of drinking water and sanitation facilities (WHO-UNICEF, 2012, p. 33), based in estimations about types of facilities used.

right to water and sanitation.<sup>4</sup> Thus, the right to water and sanitation must inform a state's design and implementation of its MDG policies (see Albuquerque, 2012) including the need to go beyond averages towards targeting groups that face discrimination and systemic exclusion.

Legal and institutional frameworks for water and sanitation often support the sustainability of interventions by creating a legal reference point for actors seeking to hold states accountable for their efforts (*ibid.*). Since the late 1960s and early 1970s, a series of pioneer LAC countries like Bolivia, Costa Rica, Uruguay and Venezuela started to include in their constitutional frameworks the implicit or explicit right to water. In the 1990s and early 2000s, more countries had enshrined this right into their constitution (Table 11.4, Figure 11.5), and HRWS now is present in the legislation of fifteen countries covering more than 75% of the population in LAC (Maganda, 2011; Waterlex, 2013).



**Figure 11.5 Map on inclusion of Human Right to safe drinking water and sanitation (HRWS) in constitutions.** Source: own elaboration

4 Availability, quality, acceptability, accessibility, affordability, non-discrimination, access to information and participation, accountability and sustainability.

**Table 11.4 Table summarizing State recognition of the human right to safe drinking water and sanitation (HRWS) in national constitutions, laws and policies in selected LAC countries.**

Sentences by the Constitutional Courts, which can represent very relevant advances in the field, are not included in this table.

| COUNTRIES    | HRWS recognition          | SUMMARY <sup>[5]</sup>  |
|--------------|---------------------------|---|
| ARGENTINA    | In Legislation (Implied)  | Every person may make use of public water free of charge (...) to satisfy domestic needs of drinking and hygiene (...) It is prohibited, however, to contaminate the environment. Art.25. Water Code of the Province of Buenos Aires, Law 12.257 of 9 December 1998.  |
| BOLIVIA      | In Constitution           | 1. Everyone has the right to water and food. Art. 16. New Constitution of Bolivia, 2009.  |
| BRAZIL       | In Legislation (Implied)  | [Basic] public sanitation services shall be delivered in accordance with the following fundamental principles: Universal access [...]. Art. 2. Law on Basic Sanitation, 2007.   |
| CHILE        | In Legislation (Implied)  | Not in constitution but included in the legislation   |
| COLOMBIA     | In Constitution (Implied) | It will be a fundamental objective of state activity to address the unmet needs regarding health, education, environmental sanitation and drinking water [...]. Art. 366. Constitution of Colombia, 1991, as last amended April 1, 2005.  |
| COSTA RICA   | In Legislation            | Access to drinking water is an inalienable human right and must be guaranteed constitutionally. Art. 1.1. Executive Decree No. 30480/MINAE of 5 June 2002.  |
| DOMINICAN R. | In Constitution (Implied) | The state shall ensure the improvement of nutrition, sanitation services and hygienic conditions, [...]. Art. 8. Constitution of the Dominican Republic, 2002.  |
| ECUADOR      | In Constitution           | The human right to water is essential and cannot be waived. Art. 12. Constitution of the Republic of Ecuador, 2008.   |
| EL SALVADOR  | In Legislation (Implied)  | The cities and urban populations shall be provided with services for the supply of drinking water (...). Art. 61. Health Code, Decree No. 955 of 1988, as last amended 2008.  |
| GUATEMALA    | In Legislation            | a) Principle of Equality: Access to water for satisfaction of the vital and essential needs of the population and the improvement of these is a fundamental biological and social right of every human being. Article 2: Principles. General Water Law, Law No. 3702 of 26 September 2007.  |
| GUYANA       | In Legislation (Implied)  | Subject to subsection (2), every public utility (...) shall make every reasonable effort to provide service to the public in all respects safe, adequate, efficient, reasonable and non-discriminatory. Section 25: Duty to provide adequate service. Public Utilities Commission Act, Act No. 10 of 1999.  |
| HONDURAS     | In Legislation (Implied)  | The present law establishes the norms applicable to drinking water and sanitation services (...) as a basic instrument for the promotion of the quality of life of the population and for securing of sustainable development as an intergenerational legacy. Art 1. Decree No. 118-2003, Framework Law for the Drinking Water and Sanitation Sector. |
| MEXICO       | In Constitution           | Every person has the right to access, safe disposal and sanitation of water for personal and domestic use in sufficient quantity and quality. Article 4. Constitution of the United States of Mexico (1917, as last amended in 2011).   |
| NICARAGUA    | In Constitution           | It is the obligation of the state to promote, facilitate and regulate the provision of (...), water, (...) and the population has an inalienable right to have access to these services. Art. 105. Constitution of the Rep. of Nicaragua. 1987, as of Sept. 2010.   |
| PARAGUAY     | In Legislation            | b) Access to water for the satisfaction of basic needs is a human right and shall be guaranteed by the state in adequate quantity and quality. Art 3. Law on Water Resources, Law 3239 of 10 July 2007.   |
| PERU         | In Legislation            | Access to water for the satisfaction of the primary needs of the human person has priority, even in times of scarcity, because it is a fundamental human right. Article III: Principles. Water Resources Act, June 2009.  |
| URUGUAY      | In Constitution           | Access to drinking water and access to sanitation constitute basic human rights. Art. 47. Constitution of the Republic of Uruguay, 1967, as last amended 31 October 2004.   |
| VENEZUELA    | In Legislation            | The principles governing the integrated management of water resources (...) are the following: Access to water is a fundamental human right. [...]. Art. 5. Water Law, 2 January 2007.  |

Source: own elaboration based on information from WaterLex Legal Database on the Human Right to Water and Sanitation ([www.waterlex.org/waterlex-legal-database/index.php](http://www.waterlex.org/waterlex-legal-database/index.php)).

5 Non-official translations. Direct access to official documents through the WaterLex Legal Database.

### 11.4.1 Initiatives for implementation

The recognition of the HRWS and its consideration at a constitutional level is undoubtedly a milestone in the movement for universal access to these basic services. The HRWS framework applies to all stakeholders regardless of their nature: from states and citizens to public and private operators, who are involved in realizing its implementation and operationalization (Regional Process of the Americas, 2012), though the responsibilities differ among all stakeholders.

In Brazil, as of 2011 the federal government has put in place the programme 'Water for All', focused on the provision of water for poor rural communities of the semi-arid region of Brazil, and the main actors have been community organizations, NGOs and national and state governments in partnership with municipalities (see Figure 11.6). The provision of water cisterns has been promoted by a coalition of NGOs with the collaboration of households of all municipalities involved in the programme (Agua para Todos, 2013).

Similarly, in Chile, the national programme for public water supply in rural areas ('Programa Nacional de Agua Potable Rural') has been in place since 1994 and has increased water coverage in concentrated and semi-concentrated rural localities by over 95%. In this regard Uruguay can be taken as a model for extending the access to water, now with 100% coverage throughout the country. In addition, many countries are receiving support from the Spanish Fund for Water and Sanitation in Latin America initiated in 2007, which, with an estimated budget of US\$1,500 million, aims to support the achievement of the human right to water in nineteen countries of the region.

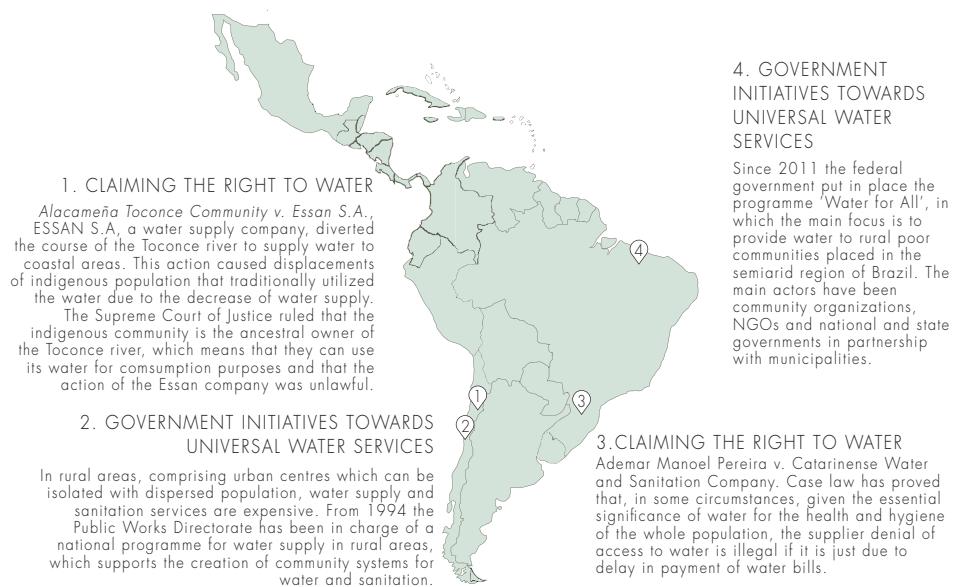
In a region with a long history of inequality there are important citizen initiatives and social movements that contribute to monitoring governmental actions, and ultimately contribute to the achievement of the right to water. As an example, in 1998 the Central American Water Tribunal (CAWT) was set up for conflicts related to water ecosystems in Central America, creating a public space for democratic participation in water debates. In 2000 the CAWT became the Latin American Water Tribunal (LAWT) in order to increase the impact of this body throughout the region (Ávila, 2010). Similarly, rural water committees of the different regions have created associations at different levels (national, regional and continental) to share their concerns and raise the political profile of rural water in their countries (e.g. Confederación Latinoamericana de Organizaciones Comunitarias de Servicios de Agua y Saneamiento).

### 11.4.2 Public and private domestic supply service

The discussion about the recognition and adoption of the HRWS often goes hand in hand with the debate about the pros and cons of the privatization of the supply of domestic water service.<sup>6</sup> In this context, LAC represents a formidable 'laboratory' of

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<sup>6</sup> The term 'privatization' is used to describe different types of participation by private or government companies, with a range of contracts in which the government can transfer responsibilities related to a series of aspects such as water services, maintenance, investment, expansion, etc. (Budde and McGranahan, 2003).



**Figure 11.6** Map with examples of the implementation of the Human Right to Water and Sanitation. *Source: own elaboration.*

different approaches to water services provision. As a matter of fact, during the past three decades LAC governments have explored (and moved back and forth between) different paths to address the pressing challenge of providing adequate water and sanitation to their citizens.

Institutional reforms aimed at diminishing the role of the State in the provision of various services – including water – have been the key for many LAC countries since the 1980s (ECLAC, 2012a). These processes have included the privatization of water services and sanitation in many cities, due to what were considered favourable conditions for privatization, namely: cities with a relatively large middle class, poor financial conditions of public operators, and the momentum of neoliberal policies pushed by international organizations such as the World Bank or the International Monetary Fund (Budds and McGranahan, 2003). However, the reality was that many privatization processes did not always flourish. While concession contracts in Argentina and Bolivia were not successful (see Chapter 13), in others like Mexico these contracts have now taken root. The main aspect linked to failures in the implementation of water management programmes is related to weak or absent regulatory frameworks. This has led to problems such as unjustified asset and income transfers, and failure to ensure efficiency and new investment after privatization (Hanitke-Domas and Jouravlev, 2011). Among the causes of this failure Castro (2007) points to corruption, lack of adequate or strong government regulation, lack of private investment, inadequate consideration of inclusive policies designed to

reduce inequality, and as a result, resistance movements by civil society. However, the analysis of experiences worldwide and in the region suggests that the debate should not be focused on the 'dilemma' private vs. public service but rather on creating a legal and financial framework suitable to ensure an adequate service provision.

The analysis of water and sanitation service provision shows that the macro-economic context and the value of water as a key element in the economy, as well as sound governance (both of context and sectoral variables) are critical to the sustainable development of water services. Moreover, the design of the industrial structure of water supply and sanitation impinges on the ability to deliver services to the population. Assets are long-lived, allowing investments to be delayed and quasi-rents to be captured once initial investments have been made (Massarutto, 2007; Guasch et al., 2008). Fragmented services lose economies of scale, increase transaction costs, make services more expensive and may facilitate the capture by vested interests (Foster, 2005; ADB, 2009). Water supply and sanitation services have decreasing average costs (Krause, 2009). Therefore, both efficiency and equity are achieved by selecting optimal size in terms of economies of scale. At the same time, they require important investments, especially when new sectors of the population have to be served. This entails having guarantees of continuity of ownership in order to recover investments through tariffs. Adequate regulation of a natural monopoly, strategic planning of public policies, prioritization of water in public budgets and decisions with adequate subsidies for lower-income citizens are requisites for the institutional design of water and sanitation systems.

While each contract will have its own singularities, countries will need to consider the contractual and regulatory duties of contractors. In terms of implementing regulation, there are differences between, on the one hand, contracts and, on the other hand, comprehensive general regulation, franchizing and concessions. Almost 90% of water supply and sanitation privatizations in LAC during the 1990s were concessions, i.e. contracts (Estache et al., 2003). After a first wave of privatization of water supply and sanitation in the 1980–1990s mainly by international operators, during the 2000s there has been a radical reduction of their presence. Ducci (2007) identifies four main reasons for this decrease: a change in the overall strategy of the operator, e.g. in search of new business opportunities in other regions; re-orientation of the national policy in relation to water supply and sanitation; collapse of the financial and economic balance of existing water provision contracts; and social and political conflicts. As a consequence, it is clear that state-owned water companies will continue being the backbone of water supply and sanitation in Latin America (*ibid.*). Nonetheless, it should be noted that, for the characteristics of the service provided, there are incentives for members of the public sector (politicians, managers and employees of the utility itself) to capture quasi-rents (Wallsten and Kosec, 2008). It seems therefore important to identify alternatives for their control and regulation in order to ensure their accountability, e.g. through the establishment of clear service standards (in terms of quality, service reliability, tariffs affordability, etc.) and their strict enforcement by an independent supervising body.

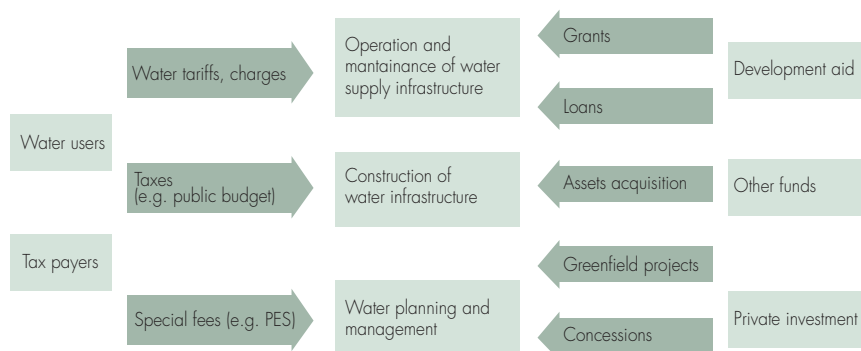
## 11.5 Financing of the water sector

No institutional or legislative reforms can take place without solid financial backing. Thus there is little doubt that each country must address the permanent challenge of ensuring sufficient funds to sustain and further develop its water sector and the institutions that enable its functioning.

### 11.5.1 What needs to be financed?

Financing needs for water policy are contingent upon economic development levels. Some of the countries in LAC are currently going through a very incipient stage of water resource exploitation; and water policy within that context is very much a question of building canals to take runoff resources to where they are needed or, alternatively, boreholes to withdraw groundwater, where available. In these countries (or at a given stage for almost every country), water policy has focused on fostering irrigation and urban development, requiring substantial financing for capital investment (OECD, 2009). In some of the countries in the region, however, more and more often society's demands for participation, equity and environmental protection add new layers to water policy and create new funding needs.

Essentially, there are three major items to be financed (Figure 11.7): water resource management, including water use (both withdrawal and wastewater disposal) through charges or fees, plus forfeiture for non-use of water use rights; water service provision through public works (infrastructures), via water tariffs; and where a sui-generis or effective IWRM approach is in place, river basin management (i.e. joint water and land use management), conceivably through the use of payment for environmental services schemes or compensatory measures or levies.



**Figure 11.7 Water-related expenditures that need to be financed and sources of incomes in LAC countries.** *Source: own elaboration*

Some of the countries in the region have faced severe foreign exchange shortages in the past due to sub-optimal saving rates or current account deficits. Over time, this has led to high levels of indebtedness (Adler and Iakova, 2013) or even a debt crisis (Reinhart and Rogoff, 2011). That debt burden for decades represented a significant restriction for

economic development (Rodrik, 2011). It greatly hindered any possibility to harness the necessary resources in order to finance water policies, which in turn has a twofold impact: on the one hand, the financing gap impedes water policy as such; on the other hand, the need to repay an ever-increasing foreign debt led some countries to turn to their comparative advantage in terms of natural capital endowment, both increasing their exports of natural resources – including water-intensive goods – and also enduring lower levels of environmental quality overall (ECLAC, 2012a; OECD/UN-ECLAC, 2013).

## 11.5.2 Where and how to lever funds?

### 11.5.2.1 National financing

Not many countries in the region rely on their own (national) resources to finance water policy and, if they can, it is usually just for some water services (i.e. Chile and its sanitation service). Their funding gap (which is mainly a fiscal one, in those countries with no public budget surplus) refers to insufficient or unstable revenues to implement water policies at different levels of government (Hernández et al., 2012). However, a sustained growth pattern over the past few years in some countries (namely Brazil, Colombia, Chile, Peru, and Uruguay, amongst others, or Paraguay and Panamá very recently) should lead to improved financial self-sufficiency<sup>7</sup> (ECLAC, 2012a).

In this context, each country has to take its own decision on how to finance its water needs. The advantage of water tariffs is that they lighten the burden over national budget, which allows the diversion of revenues to sectors that are more difficult to finance on the basis of direct charges. These tariffs generate incentives for higher water use efficiency in business (control of revenues and costs), through the consolidation of a direct relationship between revenues and services provided (served clients and supplied volumes, recollected and treated). In addition, a clear signal is provided to consumers of the real cost of services, therefore fostering a more rational use. Further, tariffs make service provision less vulnerable to macro-economic fluctuations.

To date, the use of tariffs levied on the use of natural resources is not widespread in the region (see Chapter 13) but in those countries where tariff schemes have been implemented, this has meant a sort of self-funding source as well as a partial cost-recovery mechanism. As with taxes and charges, they tend to feed into the public budget at different government levels. Revenues from these taxes and charges are very unlikely earmarked for water policy purposes. However, as social efforts, be they user contributions or public investment, are often if not always insufficient, credit or private investment may also be required, either from domestic or foreign sources.

While multilateral development banks have been a traditional and important source of financial resources for the water sector in LAC (see over), private banks have not represented

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<sup>7</sup> For the decade 2000–2010, per capita GDP in the LAC region grew by an average of 1.9% per annum, as compared with 0.3% for 1980 to 2000, and 3.3% for 1960–1980.



such a reliable funding source: any water project has the potential to generate sufficient cash-flow to pay for the loan; though there are some risks associated with exchange rate fluctuations (this led to the failure of different Build, Operate and Transfer projects in Mexico in 1995). Capital markets, in turn, are well developed in countries such as Brazil or Chile, but have not played a major role elsewhere.

In LAC, despite funding flows from international sources, governments struggle and usually fail to meet financial requirements. This has led, amongst other things, to an increasing interest in water use charges or fees (both for water abstraction and wastewater disposal; see Chapter 13 for specific examples). This interest has a number of common features in the region:

- There is a search for new approaches since traditional ones, due to the lack of operational capability, have not been effective in most cases (see Easter and Liu, 2005, for cost recovery in irrigation and drainage projects; Ferro and Lentini, 2013, for water and sanitation).
- Many of the approaches to water use charging are deemed on the basis of ideology (rather than technology). Furthermore, there are double-dividend aspirations (Fullerton et al., 2008) and, occasionally, rent-seeking behaviour (Delacámara and Solanes, 2012).
- Within a context of increasing water scarcity, the public sector's attention shifts away from supply to combined supply and demand management, thus requiring further use of financial and economic policy instruments.

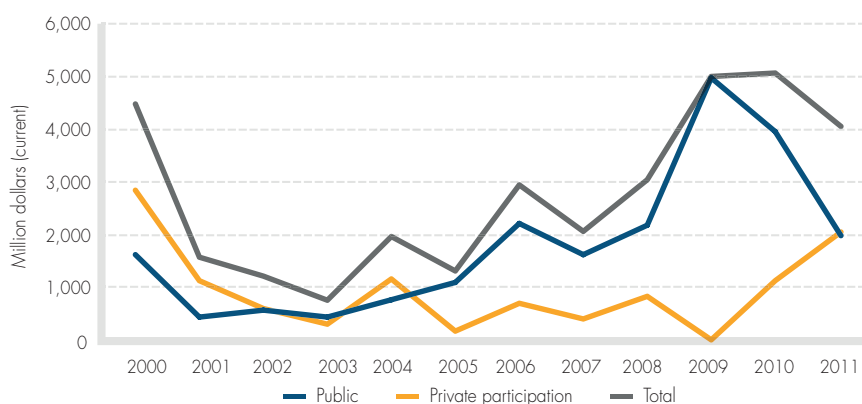
Despite the existence of such charges or fees, in almost all cases levies are not actually paid, but are paid just by a minority or are negligible for water users. However, this does not mean that water use charging is an easy endeavour. There are major obstacles: the lack of proper definitions of water use rights, including a pre-condition of payment for right purchase and holding; the level of information required (who uses water, how, how much, where, what actual revenue might be actually obtained, etc.); the weakness of procedures for the operational effectiveness of charging schemes; and the social and political acceptability of these levies, among others.

### 11.5.2.2 International financing

In LAC, national funds needed for developing and operating the water sector are complemented by public and private international sources. According to two major public databases of OECD and the World Bank,<sup>8</sup> during the period 2000–2011 the international

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8 The contribution of international sources to the financing of part of water-related investments can be assessed through two major public databases: the Creditor Reporting System (CRS) of the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) for public funds ([/stats.oecd.org/index.aspx?DataSetCode=CRS](http://stats.oecd.org/index.aspx?DataSetCode=CRS)) and the Private Participation in Infrastructure Database (PPI) of the World Bank (<http://ppi.worldbank.org>). From these databases it is possible to extract data about water and sanitation projects, hydropower and irrigation projects. Data correspond to investments committed on an annual basis and expressed in current US dollars. In CRS, the analysis presented in this chapter considers sectors with codes 14000, 23065 and 31140; in PPI infrastructure associated with water domestic supply and sanitation is considered.



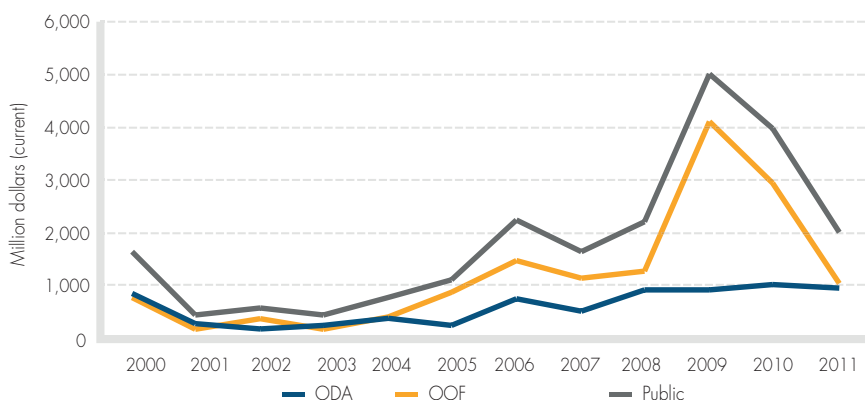
**Figure 11.8 Evolution of international public and private funding to the Latin American water sector over the period 2001–2011** *Source: own elaboration based on data from CRS (2013) and PPI (2013).*

overall (public and private) investment commitment in LAC amounted to 33,238 million current US\$, being the public investment about 66% of the total amount (21,877 million US\$) (Figure 11.8).

Public grants and loans include both the Official Development Aid (ODA)<sup>9</sup> and Other Official Flows (OOF) that cannot be included in the ODA category. Between 2000 and 2011 the OOF to LAC amounted to over US\$14,701 million, more than twice ODA flows in the region, which were US\$7,170 million. Almost all of the OOF (99%) were loans, while ODA consisted of loans and grants in similar shares (50% and 48%, respectively) (CRS, 2013). Overall, since 2001 there is a clear positive trend in public investment, reaching its maximum in 2009 (US\$4,972 million), which marked a tipping point towards a decline (Figure 11.9). The peak during the period 2008–2011 is due to the activation of Spain’s cooperation fund for water and sanitation in the LAC region (US\$1,500 million over a four-year period), whose investment commitments amount to 53% of the ODA of the period 2001–2011 and made Spain the main donor to the region in 2008 and 2009.

Over the 2000–2011 period, Japan was the main contributor to the ODA (35.24%), followed by Spain (24.07%) and Germany (11.93%). The main recipients were Peru (16.38%), Brazil (13.24%) and Bolivia (10.01%). As for the OOF, most of the funds were allocated to Brazil (30.05%), Argentina (17.09%) and Colombia (13.62%), while the main funding providers were the Inter-American Development Bank (54.1% of the OOF)

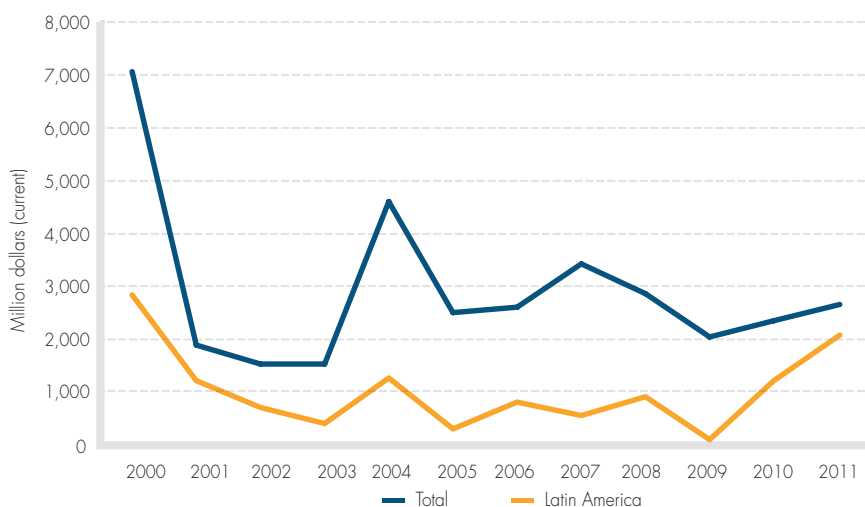
<sup>9</sup> ODA is defined as ‘flows of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective, and which are concessional in character with a grant element of at least 25 percent (using a fixed 10 percent discount rate). By convention, ODA flows comprise contributions of donor government agencies, at all levels, to developing countries (bilateral ODA) and to multilateral institutions. ODA receipts comprise disbursements by bilateral donors and multilateral institutions. Lending by export credit agencies with the pure purpose of export promotion is excluded’ (IMF, 2003)



**Figure 11.9 Evolution of international public investment during the period 2001–2011.**  
Source: own elaboration based on data from CRS (2013).

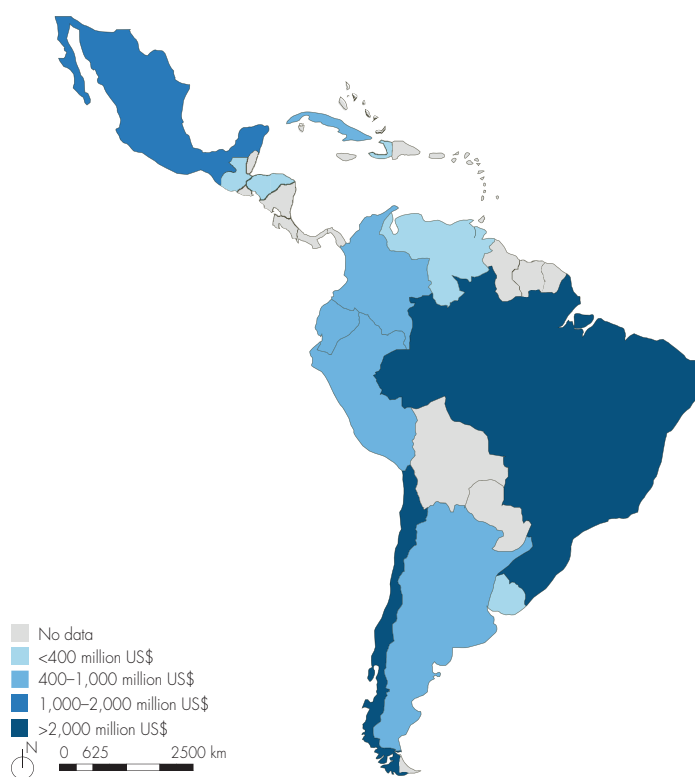
and the World Bank (45.01%). Projects associated to large urban water supply and sanitation received 44% of the ODA, while small systems (rural and peri-urban), hydropower and agriculture received 28%, 10% and 3%, respectively (CRS, 2013).

In terms of private participation in investments in the water sector, during 2000–2011 LAC received 32% of the world’s investment in the above-mentioned water-related sectors with private participation (Figure 11.10) being especially significant in 2001 (60% of the global investments) and in 2011 (78%) (PPI, 2013).



**Figure 11.10 Global and regional private investment in the water sector.** Source: own elaboration based on data from PPI (2013).

Between 2001 and 2011 almost 70% of private investment occurred in Chile, Brazil and Mexico (Figure 11.11), principally due to the support of big companies. The participation of private operators was noticed in the agricultural, industrial and sanitation sectors, characterized by the concessions of important systems, which represented 53% of the overall investment. By far, water supply and sanitation was the main recipient of private funds: about 77% of the total investments, mainly through contract for the construction or the rehabilitation of water supply systems, operation and transfer. Water purification and wastewater treatment plants received only 21% of the total investment, mainly through Build-Operate-Transfer (BOT) projects (PPI, 2013).



**Figure 11.11 Geographical distribution of investments with private participation in the water sector during the period 2001–2011.** *Source: own elaboration based on data from PPI (2013).*

From these figures it can be concluded that during the past decade international investors and organizations have played a significant role in funding the water sector, with special emphasis – for both public and private funds – in the development of infrastructure to provide water and sanitation to the population of the LAC region.

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