

Network for Cooperation in Integrated Water Resource Management for Sustainable Development in Latin America and the Caribbean



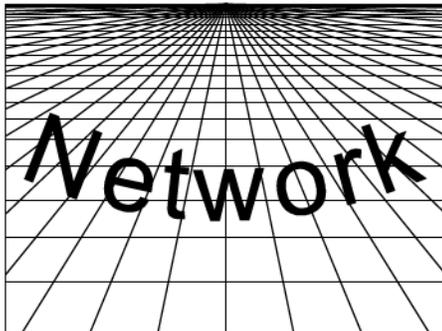
United Nations Economic Commission for Latin America and the Caribbean (ECLAC)

N° 39

December 2013

CIRCULAR N° 39

With rare exceptions, Latin American and Caribbean countries began to regulate drinking water supply and sewerage utilities in the early 1990s, as many governments became interested in promoting private sector participation in the provision of these services. This initiative was carried out in the context of the structural changes that were set in motion after the fiscal and production crisis that afflicted the region in the 1980s. The participation of private operators was therefore facilitated and encouraged in the hope that they would contribute funding, management and technology to address the shortcomings that existed in the sector.



As part of the reforms of the 1990s, regulatory authorities emerged in many of the region's countries, and were originally intended to oversee and monitor the conduct of potential private service providers. However, for various reasons private sector participation never reached the expected levels, while the withdrawal of a number of international operators in the 2000s meant that various services had to be renationalized. Legal frameworks initially designed to regulate the conduct of private utilities therefore ended up being applied to public sector operators, thus highlighting the need for a discussion on the regulation of state-owned and municipal service providers.

This situation raises a number of questions. Is regulation and oversight necessary for state-owned and municipal utilities? Which criteria should be considered in designing a regulatory system for these companies? Do these criteria differ from those applied in the

institutional structure created to control and monitor the performance of private utilities? Which essential requirements make it possible to separate the functions relating to the formulation and implementation of public policies, programmes and measures on the one hand, and regulation and oversight on the other? What is specific about the regulation of state-owned and municipal utilities, and how does this differ from the regulation of private companies? There is also an issue over whether regulatory models applicable to state-owned and municipal utilities are indifferent to the multiple objectives that can have State management, and to the varied forms that its involvement might take. How are regulatory models affected by this diversity?

There are also a number of practical questions that have limited the effectiveness of regulating state-owned and municipal utilities in many of the region's countries. What should be done when service providers, or their institutional owners, are reluctant to adjust tariffs towards self-financing levels because of political considerations; or can simply ignore regulatory mandates thanks to their negotiating power or the backing of the executive branch; or when they cannot comply with these directives because they operate with scant resources whose allocation depends on the finance authorities rather than regulator's decisions? What kind of penalty system might incentivize efficiency among such service providers?

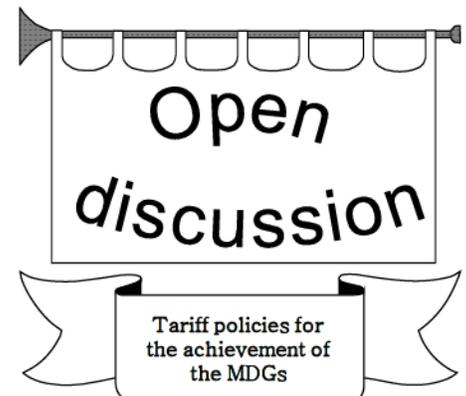
All of this requires that the nature of public utility regulation be reviewed and adapted to the incentives and the political economy of the sector. However, the regulation of state-owned and municipal utilities is unquestionably a subject that is relatively absent from economic literature. In fact, the most orthodox definitions of the concept exclude the control of such companies by regulators in accordance with specific legal frameworks, creating a vacuum in the theory of regulation that must be approached from new perspectives. There is a pressing need to enhance the capacity of the region's countries in this area. The Natural Resources and

Infrastructure Division is already engaged in this task, organizing a meeting of experts, which we report on in this issue (see "*Meetings*"), publishing Sanford Berg's study (see "*Publications*"), and conducting ongoing and soon-to-be-published research on the regulation of state-owned and municipal service providers, by Patricio Rozas Balbontin and José Luis Bonifaz.

Patricio Rozas Balbontin

CONTENTS

- Editorial remarks.
- Open discussion:
 - Tariff policies for the achievement of MDGs.
 - Natural resources within UNASUR.
 - The human right to water and sanitation.
- Meetings:
 - Tariff and Regulatory Policies.
 - Transboundary Water Cooperation.
 - Latinosan III.
- News of the Network:
 - National Water Resources Strategy.
 - Hydroelectric Development in Chile.
- Internet and WWW News.
- Recent ECLAC publications on water-related issues in Latin America and the Caribbean.



The study entitled "*Políticas tarifarias para el logro de los Objetivos de Desarrollo del Milenio (ODM): situación actual y tendencias regionales recientes*" (*Tariff policies for achieving the Millennium Development Goals (MDGs): current situation and recent regional trends*) (Project

Document Series, LC/W.519, January 2013) by Gustavo Ferro and Emilio Lentini (see Circular N° 38) was presented at the Meeting of Experts on Tariff and Regulatory Policies (see “*Meetings*”). Its conclusions are set out below.

The main link between the Millennium Development Goals (MDGs) and tariff structures resides in closing the gaps in drinking water and sanitation coverage and service quality, while maintaining these achievements over time. Tariff structures send signals on the (economic and environmental) sustainability of services, the efficiency with which they are provided, and the fairness with which their benefits are distributed in society.

Sustainability, efficiency and equity are all desirable in tariff design. These attributes imply that revenue is enough to maintain the service in conditions that are at least stable, that marginal costs are recovered through tariffs, and that average costs are minimal, do not discriminate between customers, and take into account deprivation among the most vulnerable users. Simplicity and transparency requirements that favour public acceptance and help users understand their bills are additional positive aspects.

Tariff structures may comprise fixed and/or volumetric charges, with linear or increasing or decreasing block rates. They may also permit Ramsey pricing (price mark-up inverse to the price elasticity of demand of different groups of consumers) and include seasonal tariffs (prices that differ where supply or demand conditions vary significantly between times of year). Indexation preserves the real value of the tariffs over time, and it is more or less automatic, depending on the country.

Subsidies can be allocated to the supply (service providers) or the demand (customers). On the demand side, subsidies could be applied to access or consumption. All subsidies have objectives, advantages and disadvantages. Supply-side subsidies may be needed to expand the network and achieve universal service. Demand-side subsidies may help poor customers to connect and after that to pay their regular bills. Expanding coverage and then keeping people connected to the network, using water and paying for the service, yields a clear benefit for the health of the population. Subsidies may be universal in their scope or focused on specific target groups. Lastly, they may be designed as direct or cross subsidies. To structure tariffs in categories and to grant subsidies, it is necessary to consider the cost of service per customer, as well as elasticities; in other words, the effect of price changes on consumption (and therefore on revenue).

To examine trends in the region’s water tariffs, given the diversity of the sector and

the levels of development of both services and socioeconomic conditions, a sample was taken representing a large group of countries, of all sizes and development levels in the region.

Service provision differs between countries depending on the level of centralization or decentralization (national versus regional or municipal), the form of ownership, the coverage of the target population (by social groups, geographical regions, or urban and rural areas), the proportion of inhabitants with sewerage services (almost always smaller than the proportion with access to drinking water supply), the volume of treated wastewater (normally only a fraction is treated), the service quality level (highly variable between countries and regions in terms of supply continuity, pressure, potability, commercial management, etc.), cost recovery through tariffs, and the providers’ ability to produce (consume) net financial surpluses that may allow expanded levels of provision, closing gaps in coverage, responding to natural population growth and maintaining the network.

Tariff systems vary considerably in the region, although most of the selected utilities operate increasing block tariff structures, differentiated by user category. Exceptions include Chile (linear two-part tariffs, with no distinction between user categories and subject to seasonal adjustments), Argentina (predominantly non-metered clients, charged according to dwelling size using a formula that includes cross subsidies) and Uruguay (where an increasing block structure is used for residential customers, while commercial and industrial customers pay tariffs that decrease as consumption rises).

The sample includes 15 companies that provide drinking water to approximately 26 million clients (more than 100 million people) and sewerage services to 20 million clients. The average values of certain indicators are of interest in comparing the relative performance of individual service providers. Average water use per client in the sample is 22 cubic metres per month, with physical losses accounting for 38% of production. The average water bill stands at US\$ 28 per month, at a cost of US\$ 1.65 per cubic metre. 83% of customers are metered, with sales revenues covering 132% of the operational costs, 111% of the above with the depreciation, and 108% if interests are also considered.

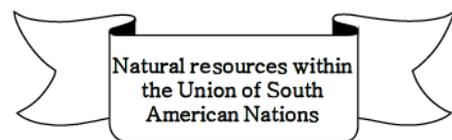
Companies from Brazil, Chile, Colombia and Peru’s SEDAPAL recorded the highest tariffs in dollars, and those from Argentina and Panama have the lowest. It might therefore be concluded that with the exception of utilities in the latter two countries, there is a tendency in the region to cover operating costs with tariff revenues: Chilean utilities had the highest cost recovery, followed by the

Brazilian service providers and SEDAPAL, and, on a lower level, those of Colombia, Costa Rica, Ecuador, Paraguay and Uruguay.

A common feature among the companies with greater financial coverage is that billing is based on micro-metering, and they have some of the lowest consumption rates. Water use per inhabitant has seen a downward trend for more than a decade, particularly in Chile and Colombia.

These trends are also corroborated by correlations between variables that help characterize the service providers. For example, the simple correlation between monthly water use and average tariff is -0.64 (consistent with a negative and relatively low elasticity); and the correlation between the proportion of micro-metering and water consumption is -0.65 (consistent with the fact that the metering helps control consumption, especially as metering has a positive correlation of 0.69 with the average tariff; in other words, those who are metered pay a higher tariff). The correlation between losses and metering is -0.31 (meters help control losses); and that between cost coverage and the average bill is 0.79 excluding depreciation, 0.85 including depreciation and 0.91 if interests are also considered (higher tariffs contribute to sustainability).

There are also interesting correlations, of 0.61, 0.59 and 0.66 respectively, between drinking water coverage and the three financial sufficiency indicators presented in the paper. In other words, service providers with better cost coverage supply drinking water to a greater proportion of the population. From this it may be inferred that the companies use their greater financial capacity to invest in the expansion of services.

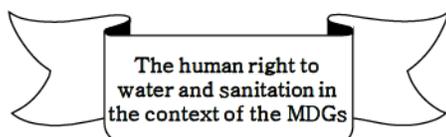


The study “*Natural resources within the Union of South American Nations: Status and trends for a regional development agenda*” (LC/L.3627, May 2013) by Hugo Altomonte, Jean Acquatella, Andrés Arroyo, Andrei Jouravlev, Jeannette Lardé and René Salgado (see Circular N° 38), was presented at the Conference of the Union of South American Nations (UNASUR) on Natural Resources and Integral Development in the Region (Caracas, Venezuela, 27 to 30 May 2013). The document analyzes natural resources governance in the mining sector, hydrocarbons, hydroelectricity and drinking water supply and sanitation. Set out below are the main conclusions and implications for public policies that are proposed in it for the sustainable development of the drinking water supply and sanitation services.

- **Prioritizing** the drinking water and sanitation sector, in terms of both funding and efficiency-oriented public policies, could translate into major social benefits for the UNASUR countries, not only because of its decisive influence on public health, and child health in particular, but also in the struggle against poverty and indigence, efforts to foster inclusion and social peace, the promotion of economic development (especially with new opportunities for export-oriented agroindustries and tourism) and environmental protection.
- Regarding **investment**, the fact that large-scale funding is needed to attain universal coverage and improve service quality, particularly for the most vulnerable groups, means that the UNASUR countries need to make an effective, long-term commitment to both financing and the development of strong, stable institutions. Accepting this responsibility will not only bring about the hoped-for universalization of services but will also constitute an important tool for invigorating the countries' economies and combating poverty and indigence.
- With a large volume of public money committed to drinking water and sanitation projects, particular attention must be paid to supervision and **oversight of budget allocations**, as the infrastructure sector suffers from a high level of corruption throughout the world. Furthermore, transaction costs are high, particularly in procurement and contracting processes.
- The economic value of water needs to become a larger factor in consumer decisions, as there is a need to generate awareness of how scarce and essential this resource is. An effective mechanism for preventing waste is to charge the full economic and financial cost of water. Thus, public policy in the UNASUR countries should aim to make its provision **self-financing** by moving towards tariffs that increasingly internalize the cost of services.
- Given that some population groups will be unable to afford water supply services at self-financing tariffs, States need to devise mechanisms for direct or cross-**subsidies** to enable these users to meet their basic needs. If this is done, subsidies will become a vehicle for positive advancement in fulfilling the human right to water. Recognition of this right entails limits on cost recovery, so that the most vulnerable are not deprived of access. However, it is not to be an indiscriminate benefit whereby water is provided free of charge to all sectors of society, as this would seriously conspire against the equality and sustainability of the system.
- As regards **institutions**, the UNASUR countries should work towards an institutional structure of the sector in which responsibilities are clearly demarcated, in addition to designing effective incentives for all actors in pursuit of an affordable, high-quality universal service. This can be achieved by separating out service provision, regulation and public policymaking into three different and independent spheres. Practice shows that this type of institutional arrangement makes it possible to establish the formalities that are needed to create incentives for service providers.
- As regards the **public model of service provision**, the regulatory agencies overseeing state-owned and municipal service providers should initiate an evaluation process to determine the effectiveness of their incentive instruments (fines, publicity or personal sanctions, for example). For their part, public-sector providers need to become more independent of other public bodies that control them financially and politically. However, it is also advisable to advance towards the modernization of regulatory and management practices, what has been called the "open state-owned corporation" (see Circular N° 34), an approach that is designed to prevent distortions in the operation of the business and abusive behaviour by the authorities through measures to bolster the independence, democratization and knowledge of regulation and oversight bodies and, in particular, through user participation in the internal management of service providers and in the external functions of planning, regulation and oversight.
- **User participation** ought to be expanded at all levels and in all roles at both the regulator and the provider when the latter is a public enterprise. Promoting bodies that represent drinking water supply and sanitation users is a good initiative, as it enables them to convey their concerns and uphold their rights and interests more effectively vis-à-vis institutions.
- The human right to water and sanitation implies recognition of sectoral efficiency (both economic and social) as a correlate of the duty to devote the maximum of available resources to guaranteeing this right. Consequently, as far as **economic regulation** is concerned, the UNASUR countries should enshrine in their general legal frameworks (and not just in contracts, which have serious shortcomings as a means of oversight and regulation) the general principles of fair and reasonable rate of return, good faith, due diligence, the obligation of efficiency and the transfer of efficiency gains to consumers. Likewise, there is a need for systems of regulatory accounting that enable regulators to obtain consistent, comparable and reliable information on technical and operational performance, asset management, business management and the quality of economic and financial decision-making in the regulated concern, as these aspects are not covered by the financial information provided by conventional accounting.
- It should also be noted that the scale of service providers is important in lowering costs, with the ultimate outcome of lower tariffs for consumers. There is ample empirical evidence that major economies of scale can be obtained by medium-sized and small service providers, while among those serving between 100,000 and 1 million inhabitants (and in some cases up to 4 million) there is a tendency for economies of scale to remain constant. Furthermore, creating a more consolidated industry structure in this sector provides a great many other benefits in terms of financial sustainability, social cohesion, watershed management, reductions in transaction costs and improvements in regulation and oversight. This assertion runs counter to many of the decentralization initiatives that have been undertaken in the UNASUR countries. However, given the soundness and abundance of the evidence supporting it, the recommendation is to **promote aggregation and consolidation in the industrial structure of the sector**.
- Similarly, emphasis should be laid on the urgent need for **complete, accurate, comparable, consistent, relevant and timely information**. Information is essential for political and regulatory decision-making. It shows what is working and what is not so that the performance of the actors involved in the sector can be evaluated. Without information, there is only intuition to go by, and that is not a good guide in this area. Information regarding not only drinking water supply and sanitation services but water resources in general is in short supply in the UNASUR countries. It is urgent for these countries to have accurate and reliable water information, and accordingly resources need to be made available for this at the national level. Information is of no use unless it is transparent, however, and the same is true of public policymaking and the decision-making of regulatory agencies. The region has already made progress in this direction, but all remaining areas of opacity and non-disclosure need to be dealt with as a matter of urgency.
- In particular, the UNASUR drinking water supply and sanitation sector needs to adopt

management indicators to measure the performance of service providers with a view to evaluating their efficiency and detecting best (and worst) practices. If possible, a region- or nation wide *performance comparison (benchmarking) exercise* should be carried out, both within utilities over time and with other providers. According to a report of the Working Group on Benchmarking of the Association of Regulatory Agencies for Water Supply and Sanitation Services in the Americas (ADERASA), “Historical comparison within a utility allows the ongoing service impact of management decisions to be visualized, while comparison with other providers replicates the conditions of a competitive marketplace and makes it possible to identify areas in which management can be improved and, potentially, to identify and analyse best practices so that they can be implemented for the purpose of improving services, subject to whatever adaptation is required by the circumstances of each particular case”.

- Likewise, the UNASUR countries need to be called upon urgently to *link the management of water resources to mechanisms for the economic regulation of drinking water supply and sanitation services*. In the region, the function of sustainable water management (involving, for example, the protection of ecosystems and management of forests and surface water bodies) is usually dissociated from that of economic regulation of drinking water supply and sanitation service providers. It is also dispersed across a multitude of agencies, that often operate with little or no coordination. This separation has to disappear as soon as possible. Service users should begin to internalize the cost of water production in ecosystems, since otherwise they will find themselves in a situation of scarcity sooner rather than later, and not because of service management problems.
- Lastly, another concern is the sector’s ability to adapt to *climate change and rising energy costs*.



The study entitled “*El derecho humano al agua y al saneamiento frente a los Objetivos de Desarrollo del Milenio (ODM)*” (*The human right to water and sanitation in the context of the Millennium Development Goals (MDG)*) (Project Document Series, LC/W.536, March 2013) by Juan Bautista Justo (see Circular N° 38), was presented at the Meeting of Experts (see “*Meetings*”). It

examines current perspectives on the human right to water and sanitation in the region and attempts to determine the implications of standards protecting this right, both for the drinking water supply and sanitation sector and for the fulfilment of the MDGs. The study offers the following recommendations.

Owing to their essential role, and because they can only perform their function when assured always and for everyone, human rights are recognized as having universal, inalienable, non-derogable and indivisible status. Including water and sanitation within this category of rights involves subjecting service provision to the entire legislative framework designed to guarantee this status.

What is the post-2015 aspiration?

The content of the new sectoral target should take into account the components of the human right to water and sanitation in terms of accessibility, quality, affordability and acceptability, complemented by core and progressive obligations and combined with mandates derived from international human rights instruments. All of this leads to the setting of universal access to quality services as the new post-2015 goal. In order to reduce regional and social disparities, this objective should ideally tend to be broken down by country, and perhaps by geographical areas (for example, urban and rural) or social groups, rather than being limited to overall global targets.

As an intermediate stage, the target should include a commitment from countries to ensure minimum universal thresholds for drinking water supply and sanitation coverage within five years, guaranteeing that individuals are supplied with at least 20 litres of drinking water per day and that nobody is forced to practise open defecation or use facilities that are out of service, for example by providing portable units or by building and maintaining shared toilets.

In short, post-2015 sectoral development goals should include targets that meet the two typical obligations of the human right to water and sanitation: (i) the immediate implementation of mechanisms that will allow universal access to minimum levels of drinking water supply and sanitation in the near future (intermediate target); and (ii) the adoption of concrete and deliberate measures in order to gradually achieve—in the medium term—universal access to services that comply with all components of the human right to water and sanitation (final target).

Monitoring, information-gathering and measuring mechanisms should aim for even development both within and between countries, including the international cooperation set forth under the International

Covenant on Economic, Social and Cultural Rights (ICESCR) as a variable.

How can the new target be met?

The means of meeting the new target must include the following factors:

- genuine participation mechanisms and effective remedies as laid down in ICESCR;
- direct domestic enforcement of the human right to water and sanitation by national authorities—with emphasis on efficient tariff and subsidy policies and on building solid and stable regulatory institutions—, complemented by the role of international human rights protection bodies;
- rules of transparency and organization set out in the United Nations Convention against Corruption (UNCAC); and,
- good practices expected of the public and private sectors, in accordance with the Guiding Principles on Business and Human Rights for implementing the United Nations “Protect, Respect and Remedy” framework.

For this goal to be feasible, something fundamental must change in the post-2015 phase: this time, sectoral development goals must be established in a participatory manner and respecting the mandates referring to the maximum of available resources and to international cooperation, as a result of which they should be substantially more ambitious than the current MDGs. The community of countries must analyse and establish a commitment to efficiently allocate enough resources so that they can deliver full access to improved facilities within a reasonable time period. Such a commitment must be legally binding and subject to accountability under ICESCR.

The very shaping of the post-2015 sectoral development goals and their indicators should rest on the premise of genuine participation. The human-rights-based development approach means questioning the design of “top-down” programmes, a feature present in the composition of the current MDGs. This participation will be useful in order to include references to equity and to coordinate the target with investment needs in spheres such as health or housing, in the knowledge that the drinking water supply and sanitation sector has a strong chance of taking precedence in public spending.

It should be remembered that the allocation of funding to achieve sectoral goals does not depend solely on political priorities, but is contingent on the ability of national economies to grow and generate—through salaries and taxes—sufficient resources to finance the development of services. This depends in turn on healthy macroeconomic

policies and on the general performance of the economy.

The efficiency of service provision is essential in satisfying the human right to water and sanitation, since lower costs increase and improve the availability of services. Conversely, inefficient service provision drives up costs and has an adverse effect on this human right. The most common inefficiencies are losses of economies of scale and scope, overstaffing, blanket subsidies, artificially low tariffs, contracts under undue influence, transfer pricing, capture and corruption, excessive debts and high transaction costs. In this sector, efficiency depends fundamentally on the regulatory framework, the oversight and control institutions, political will, and the country's economic, social and cultural conditions. The importance that governments attribute to the human right to water and sanitation is therefore reflected in the seriousness and the detail with which they approach regulation and regulatory institutions.

Finally, in order to achieve minimum thresholds of coverage, the shaping of new targets must include the provision of effective remedies so that interested parties can obtain coverage through rules, court judgments or administrative decisions issued by the national authorities that recognize and protect the human right to water and sanitation.

In short, the human right to water and sanitation can contribute expansion and performance indicators and standards, aimed at gradually achieving universal access and intermediate minimum coverage, to the process of building new sectoral development goals. All of this is implemented through political and budgetary commitments in keeping with the idea of allocating the maximum of available resources, strategies for overcoming structural disparities and institutional systems that ensure efficiency in the meeting of targets and the accountability of governments and service providers.

Paradigm shift in the sector

Conceiving the provision of drinking water and sanitation services as a human right with legally binding obligations on countries makes it possible to promote significant changes in how the sector is understood. Failings in sectoral governance must be overcome if the human right to water and sanitation is to be fulfilled. This means two things: (i) placing and keeping the sector on national agendas as a political priority, for which purpose ICESCR gives precedence to investment in drinking water supply and sanitation and to efficiency as key aspects of compliance with the rule on the maximum of available resources; and, (ii) strengthening national public institutions, in which both

citizen involvement and the fight against capture and corruption are strategic elements.

The continuity of public policies irrespective of changes in administration or the passage of time is another factor relating to governance. To enjoy continued importance, the prioritization of the water and sanitation sector must be understood as an international mandate that is binding on the State, and not as a decision that can be altered by an incoming administration.

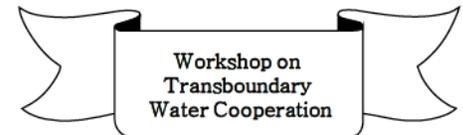
All of the above shows that governments currently have a detailed and specific body of guidance with which to make progress on sectoral policies that enable fairer access to drinking water and sanitation services. This legal framework attributes clear capacities and obligations to said governments.

Situations in which the human right to water and sanitation is unprotected can be changed, first of all by beginning to take this human right "seriously", specifically by including it in the courses of action followed by public officials and private actors on a daily basis. Enshrining this right at supranational level has a decisive function: it ensures that the interests of the community's most vulnerable individuals and groups are incorporated into the agenda and the prevailing institutional discourse. As a result, deprived persons are given greater visibility and their voices are included in government decision-making. There is no doubt that when the rules governing the drinking water supply and sanitation sector include the protection and participation of these individuals as enforceable requirements rather than merely options, then significant and promising changes will be just around the corner.



The *Meeting of Experts on Tariff and Regulatory Policies in the framework of the Millennium Development Goals (MDGs) and the Human Right to Water and Sanitation* was held at ECLAC headquarters in Santiago, Chile on 8 July 2013. The event was organized by the Natural Resources and Infrastructure Division and supported by the Ministry of Foreign Affairs of France. The debates focused on the following issues:

- The region's progress towards the MDGs.
- The challenges of regulating and controlling state-owned and municipal service providers.
- Good practices and regional trends relating to tariff policies, self-financing, subsidies and other pro-poor policies.
- The implications of recognizing the human right to water and sanitation, both for sector policies and for post-2015 targets.
- National experiences of regulation, oversight and control.
- New and emerging subject areas (energy efficiency and water conservation, adapting to climate change, consumer protection, environmental sustainability of services, watershed management, and others.).



The Natural Resources and Infrastructure Division collaborated with the Economic Commission for Europe (ECE) to organize the *Workshop on Transboundary Water Cooperation "Latin American and Pan-European Regions: Sharing Experiences and Learning from Each Other"*, which was held in Buenos Aires, Argentina, from 11 to 12 June 2013 (see Circular N° 38). One of the event's objectives related to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, which was originally adopted in Helsinki on 17 March 1992, and entered into force on 6 October 1996. At that time, the Convention was only open to ECE member countries, but it was amended on 28 November 2003 to allow accession by all United Nations Member States. The amendments entered into force on 6 February 2013.

The fundamental goal of the Convention is to strengthen local, national and regional measures aimed at protecting and ensuring the quantity, quality and sustainable use of transboundary water resources. The Convention takes a holistic approach based on the understanding that water resources play an integral part in ecosystems as well as in human societies and economies. Its commitment to comprehensive water resources management replaces an earlier focus on localized sources of pollution and management of separate components of the ecosystem.

The Convention requires that its signatories meet the following obligations: (i) prevent, control and reduce transboundary impacts that have adverse effects on the environment, human health and socioeconomic conditions; (ii) ensure that transboundary waters are managed in a reasonable and equitable way, using an ecosystems approach and guided by the

precautionary principle and the polluter-pays principle; (iii) conserve and restore ecosystems; and (iv) carry out environmental impact assessments, develop contingency planning, set water-quality objectives and minimize the risk of accidental pollution.

The Convention requires that the countries sign specific bilateral or multilateral agreements and create institutions —joint bodies such as river and lake commissions— in order to discharge their responsibilities.

The text of the Convention is available at <http://www.unece.org>.

Third Latin American Sanitation Conference

The Natural Resources and Infrastructure Division cooperated in the *Third Latin American Sanitation Conference* (Latinosan III) (Panama City, 29 to 31 May 2013), at which the “Panama Declaration” was adopted. In this declaration, it was agreed:

- To reiterate the political commitment and will to universalize the human right to water and sanitation in the region, favouring the development of Latin America’s peoples and prioritizing rural areas and vulnerable populations.
- To strengthen intergovernmental cooperation through a Regional Meeting of Sanitation Ministers (REMISA), to be held every two years in the framework of the Latin American Sanitation Conference. This meeting will examine the advances made by countries, define regional sanitation policies and commitments, and review aspects of institutions, planning, investments, capacity-building in the sector and coordination between countries.
- To give a fresh impetus to comprehensive sanitation efforts, by institutionalizing the Latinosan regional initiative through the establishment of the Latinosan Pro Tempore Secretariat. The secretariat will promote effective intersectoral coordination between the agencies that implement policies on water resources, the environment, public health, rural and urban management, and other areas, whose actions have a direct impact on strategies for decent basic sanitation.
- To establish the Latin American and Caribbean Observatory on Sanitation, intended to systematically monitor the progress of the countries that have signed up to the Latinosan initiative.
- To implement risk-management and prevention policies in the event of disasters and emergencies in the basic sanitation

sector, through measures to reduce vulnerability and increase the resilience and reliability of facilities, considering the effects of climate variability.

Further information about the conference, as well as conference materials and reports, are available at <http://latinosanpanama2013.com>.



National Water Resources Strategy

Chile has launched its *National Water Resources Strategy*, which has five key components (<http://www.mop.cl>):

- **Efficient and sustainable management.** Efficient management should tend to prevent negative externalities that may arise as a result of inappropriate water use. Similarly, sustainable management should consider harnessing existing resources to meet demand, ensuring that the water resource can be accessed by the population and that requirements of all other uses are met. In this scenario, comprehensive water-resource and river basin management are crucial, on the understanding that each river basin is a unique and specific territory. Water users’ associations are vitally important in this context. This component also includes the protection of water quality, reducing the pollution of water resources to a minimum, by implementing instruments to control pollution, as for example, developing secondary standards on environmental quality, and associated prevention and decontamination plans. Preventing the diffuse pollution of surface water and groundwater is a priority objective. The strategy aims to protect water availability, increasing the efficiency of water use by encouraging private investment in modern irrigation techniques, and directing these water savings to the recovery of environmental flows.
- **Improving the institutional framework.** Defining a new institutional framework for water resources management is an area to which the administration has attached great importance, since the current water-resources situation requires an institutional

structure capable of streamlining and coordinating the multiple competencies of State agencies that coexist in the sector. Such a structure must ensure that water-resource planning, allocation, protection, oversight and conflict resolution are carried out using technical means, balancing the exercise of water rights with the public interest associated with the use of this important resource.

- **Addressing scarcity.** Different parts of the country have suffered from droughts in recent years. Although water shortages are seasonal by nature, records indicate that the problem is becoming more frequent, making it important to take measures that not only resolve the difficulty in the short term, but which also address water scarcity on a more permanent basis. Building dams is an important part of this, but is not a complete solution. The government will move towards artificial aquifer recharge, exploring non-traditional alternatives such as desalination, and evaluating of non-conventional water sources.
- **Social equity.** The real challenge facing the government in this area is the need to provide drinking water to semi-concentrated rural communities.
- **Informed citizenry.** This component aims to foster a culture of water conservation through various means, such as developing communication campaigns, school programmes and community events, among others. Efforts have focused not just on the public sphere, but have also generated a private consensus in order to raise the population’s awareness that everyone is responsible for looking after water.

Fifty years of hydroelectric development in Chile

An article by the former director of our division, Michael Nelson, was published in the journal *Water Alternatives* (<http://www.water-alternatives.org>) under the title “*Fifty years of hydroelectric development in Chile: a history of unlearned lessons*”.

The development of hydroelectricity in Chile illustrates a situation where water resources can be both well and badly managed when a private or public utility company is powerful enough to operate largely outside standard policy and bureaucratic processes. The company successfully increased hydroelectric capacity more than fourfold over three decades characterised by periods of significant political instability. This was done without noticeable conflict due to its recognised efficiency and absence of environmental concerns in Chilean policy

until the late 1980s. Since that time there has been increasing pressure from international agencies and nongovernmental organizations to place more emphasis on environmental dimensions in development. The interplay among the diversity of agendas and tactics adopted by the interest groups attempting to influence decision on hydroelectric projects has, in some cases, been counterproductive. The company chose to withhold information and modify environmental impact assessment procedures as tactics to reduce costs. The single-minded dedication of nongovernmental organizations to preclusion of dam proposals tended to distort public debate. The government, presumably due to risk aversion, proved unwilling to take a proactive stance by not specifying and implementing requirements for approval of a dam projects, providing a comprehensive policy framework for debate or facilitating dialogue on the issues.



Some websites worth visiting for information on water-related issues are listed below:

- *Sistema de Información de Agua y Saneamiento Rural (Rural Water and Sanitation Information System, SIASAR)*, a joint initiative between Panama, Honduras and Nicaragua, is a platform for the management, planning and monitoring of the drinking water and sanitation sector in rural areas. It includes a mobile application with data collection functionalities and a system of indicators, reports and classification matrices for the monitoring and analysis of three key dimensions of water supply and sanitation services: coverage, service quality and sustainability (<http://siasar.org>).
- The *Ministry of Environment and Water (MMAYA)* (<http://www.mmaya.gob.bo>) of Bolivia develops and implements public policies, standards, plans, programmes and projects to conserve, adapt and harness environmental resources in a sustainable manner. It also develops irrigation and basic sanitation through comprehensive watershed management, preserving the environment so that water for life is a priority, while respecting uses and customs to ensure well-being.
- According to a recent study led by Japan's Tottori University and the United Nations University's Canadian based Institute for

Water, Environment and Health (UNU-INWEH), in Latin America, complete information on *wastewater generation, treatment, and use* is available from only 9 of 32 countries. Even this information is relatively old as the data pertain largely to 1996-2002. Ten other countries have partial data available. Only about 20% of generated wastewater undergoes treatment in the countries for which pertinent data are available. Rapid urbanization without sanitation facilities has caused major downstream pollution problems in this region. Water scarcity is not the main driver of wastewater use in most of Latin America. Rather, farmers engage in wastewater use because it provides a low-cost source of plant nutrients (<http://inweh.unu.edu>).

- In Chile, the *Rural Drinking Water Programme* of the Directorate General for Hydraulic Works, part of the Ministry of Public Works, aims to supply drinking water to rural locations, contributing to the country's economic development and social integration. The Directorate's website (<http://www.doh.gov.cl>) provides a number of materials about its activities, along with interesting studies, as for example, "*Participación y Género en los Comités y Cooperativas de Agua Potable Rural*" (*Participation and gender in rural drinking water committees and cooperatives*).
- The *World We Want* is a platform created by the United Nations and civil society to amplify people's voices in the process of building a global agenda for sustainable development. It will gather the priorities of people from every corner of the world and help build a collective vision that will be used directly by the United Nations and world leaders to plan a new development agenda launching in 2015, one that is based on the aspirations of all citizens (<http://www.worldwewant2015.org>).
- The mission of Ecuador's *National Water Secretariat* (<http://www.agua.gob.ec>) is to effectively administer the use of national water resources in an integrated and comprehensive manner, through policies, standards, control and decentralized management.
- The Inter-American Development Bank (IDB), in cooperation with the International Water Association (IWA), is developing *AquaRating*, a rating system that assesses the performance of drinking water supply and sanitation service providers in a comprehensive way (<http://www.aquarating.org>). Apart from an overall rating of the utility, the system offers detailed assessments of its various rating areas (access to service, quality of

service, operating efficiency, planning and investment execution efficiency, business management efficiency, financial sustainability, environmental sustainability, and corporate governance), an assessment of the reliability of the information provided by the utility, as well as guidance to improve management practices.

- Issue 41 of *Revista Hydria* (<http://hydria.com.ar>) includes several articles about water and mining, for example, "*Demanda de agua en la actividad minera*" (*Water demand in the mining industry*), "*La minería moderna y el uso sustentable del agua*" (*Modern mining and sustainable water use*) and "*Ambiente y minería en América Latina: ¿problema, dilema u oportunidad?*" (*The environment and mining in Latin America: problem, dilemma or opportunity?*).
- The *Water Centre for Latin America and the Caribbean* was created to develop capacities and to generate and disseminate knowledge for the management and use of water resources in the region through three specific objectives: (i) to establish research programmes in areas related to water management and use; (ii) to establish formal and informal training programmes that correspond to the water needs of the region; and (iii) to create a platform to integrate regional information on water resources (<http://www.centrodelaagua.org>).
- Chile's *Electronic Water Market* seeks to enhance the efficiency and transparency of the water market through a secure and informed online trading system oriented at lease and option contracts. Its objective is to reduce buyers' and sellers' search costs, since users will simultaneously interact with many other sellers and buyers (www.mercadoelectronicodelagua.cl).
- Several interesting studies are available on the website of the project "*Citizenship, collaborative technologies and regulation*", coordinated by Consumers International, as for example, "*Recomendaciones para aumentar la participación ciudadana en políticas sobre la regulación de los servicios públicos*" (*Recommendations to increase citizen participation in policies on utility regulation*) and "*Buenas prácticas de transparencia y participación ciudadana en la regulación de servicios públicos domiciliarios en América Latina*" (*Good practices of transparency and citizen participation in the regulation of residential public services in Latin America*) (<http://www.empodere.se>).
- The *Flatlands Hydrology Institute* (IHLLA) conducts hydrological research in the plains of Buenos Aires province,

Argentina. Having already put forward the assessment and the methodological adjustment to the particular features of flatland hydrology, IHLLA has now set about creating technological tools that can be transferred to regional water resource managers (<http://www.ihlla.org.ar>).

- The *Sustainable Development and Human Settlements Division* of ECLAC (<http://www.cepal.org>) has published several studies on the impact of climate change on water resources, such as “*Análisis de la vulnerabilidad del sector hidroeléctrico frente a escenarios futuros de cambio climático en Chile*” (*Vulnerability analysis of the hydroelectric sector in the context of future climate change scenarios in Chile*).
- The *Great Rivers Partnership*, a global priority programme of The Nature Conservancy (TNC), brings together diverse partners and best science to expand options for achieving the sustainable management and development of the world’s great rivers (the large, iconic rivers that sustain entire nations with food, water, energy and more) and their basins (<http://www.greatriverspartnership.org>)
- *Aguaclara* (<http://www.aguaclara.org>) is a foundation dedicated to improving quality of life through environmental education, community participation and integration with other groups and organizations.

• “*Best practices in regulating State-owned and municipal water utilities*” (*Project Document Series, LC/W.542, May 2013*) by Sanford V. Berg (available in English only). The fundamental lesson that emerges from this survey of regulating state-owned and municipal water utilities in developing countries is that sector regulation has to be embedded in an adequate and consistent institutional framework in order to have a positive impact on performance. Sector regulation, by itself, is no guarantee of performance improvements in the drinking water supply and sanitation sector. Case studies and empirical analyses suggest that without significant changes in the supporting institutions, the standard tools of regulation will not be effective. This conclusion is disturbing, especially for developing countries, since it means that the establishment of a regulatory agency might raise hopes, but ultimately, the agency’s rules are unlikely to improve performance without additional, politically difficult initiatives. An industry observer said “to have effective regulation, you must have utilities that can, in fact, be regulated”. The problem boils down to getting a broader set of institutions to support regulatory and managerial actions that promote good sector performance. This means getting the governance structures right (rules of the game) and the substantive actions right (play of the game). Conflicts usually arise in the politically-sensitive drinking water supply and sanitation sector, so the regulator also needs to develop tools for conflict resolution. Thus, the conclusion that the institutional environment matters also provides a rationale for establishing a comprehensive set of governance reforms. These reforms may go beyond the jurisdiction or immediate responsibility of the regulatory agency itself. Nevertheless, an autonomous regulator can (in many cases) facilitate reforms that lead to lower costs, improved service quality, and greater network coverage. On the other hand, when both operations and oversight are

part of the same organization (whether a ministry or municipality), pressure for strong performance is unlikely since reforms would represent a public admission that past procedures were inadequate (at best) or corrupt (at worst). This study identifies best practice in regulatory governance and corporate governance of state-owned and municipal water utilities. The regulatory system goes beyond the regulatory agency and the water utility to include stakeholders that are in a position to support, block, or blunt reforms that would improve performance. In particular, this study documents how domestic politics can limit the effectiveness of regulatory institutions. Greater transparency (for example, via benchmarking and accountability) and citizen participation (via public hearings, public consultation processes, workshops, and consumer advisory boards) represent two ways the regulator can gain leverage against those benefiting from current dysfunctional arrangements. Without broad institutional support, even a technically competent regulatory commission will find itself marginalized by political forces that are far stronger. If the local “regulator” is the municipal commission, lack of professional skills and political cronyism usually exacerbate the problem. Ultimately, a sound regulatory system requires coherence, creativity, real-time communication, collaboration, consultation, and credibility.

The publications of the Natural Resources and Infrastructure Division are available in two formats: (i) *electronic files* (PDF), which can be downloaded from <http://www.eclac.org/dmi> or requested from Caridad.CANALES@cepal.org; and (ii) *printed (hard) copies*, which should be requested from the ECLAC Distribution Unit, either by e-mail to publications@cepal.org, by fax to (56-2) 2 210-20-69, or by mail to ECLAC Publications, Casilla 179-D, Santiago, Chile.

Publications



Recent publications of the Natural Resources and Infrastructure Division on water resources management and provision of drinking water supply and sanitation services:

UNITED NATIONS

NACIONES UNIDAS  NATIONS UNIES

Economic Commission for Latin America and the Caribbean
Natural Resources and Infrastructure Division
Casilla 179-D
Santiago
Chile

**PRINTED MATTER
AIR MAIL**