

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

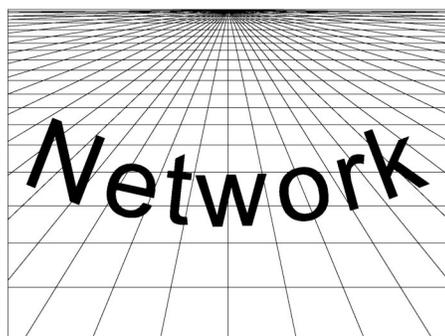


United Nations Economic Commission for Latin America and the Caribbean (ECLAC)

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One of the issues currently raising concern in water resources management is what is known as “governability”, a concept that is related to the ability to make decisions in a participatory manner and to implement them. In order to make appropriate decisions, with a view to achieving integrated water resources management goals, it is necessary to reconcile the interests and dynamics of the local population with the conditions and the particular dynamics of the environment in which they live, especially with regard to river



basins and the hydrological cycle. This means that decisions taken should incorporate understanding of human behaviour with the characteristics of the environment in which they are implemented. This necessary linkage of the knowledge provided by the so-called “soft sciences” (such as sociology, anthropology, law, economics and politics) with the so-called “hard sciences” (physics, chemistry, biology, ecology and engineering) rarely occurs in practice.

The lack of coordination mechanisms for combining the contributions of both groups of disciplines and sciences is one of the reasons for ungovernability in integrated water resources management. Decisions are usually made in a simplistic and piecemeal fashion, using paradigms established beforehand, and in most cases the decision-makers are unaware of the natural environment in which such decisions are implemented. Though proposals normally take social and physical factors into consideration, they fail to integrate these perspectives. In the social arena, for example, many initiatives advance

the view that, in order to make better informed decisions, there is a need to construct a water culture, to build a level of awareness and to formulate a policy on the importance of the resource, so that the public makes “rational” decisions concerning water use. In light of these ideas, the assumption seems to be that there exists no culture, no policy, nor any degree of awareness of water resources management at the time the proposal is formulated, and that one needs only to establish a policy, a culture and a level of awareness for progress to be made.

Culture is the way in which people express themselves in their social and spiritual relationships and with their environment. Culture is the way in which humans relate to the world and make decisions in order to improve their quality of life. This relationship requires a long learning and adaptation process linked to the territories people occupy or use at a distance. Culture, therefore, is linked to the accumulation of knowledge. At this point, however, it is important to shatter the first myth: traditionally “culture” associated with the accumulation of knowledge is viewed as an asset for human development. Acquired knowledge, including that represented by cultural characteristics, may however serve to impede adaptation to new situations. Societies and individuals are reluctant to change their attitudes; hence, with globalization intensifying changes and cultural shocks, we are witnessing increasingly contentious situations between the new inhabitants, long-standing inhabitants adopting new customs and the environment they live in.

As good intentions would have it, decisions must be “rational”, though no explanation is given as to what that actually means. A rational being may be defined as one who makes balanced decisions consistent both with knowledge of the environment in which decisions are to be applied and with his or her ability to carry them out. Therefore, rational thinking associated with a particular culture requires knowledge and time for adaptation. In the past 50 years, the cultural

shocks engendered by migration and exchanges between inhabitants of territories, including within the same country, have become ever more intense. These migrations—of people as well as knowledge and technologies—alter the rational basis of decisions, since the processes of transculturation and globalization outstrip the societies’ ability to adapt to the new environment in which they intervene. In addition, their impact is being increasingly widely felt due to the use of technologies of greater power. Society’s inability to avoid conflicts over water use and to deal with the effects occasioned by the unpredictable nature of the resource is one result of this situation.

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If we accept that action should be taken to gear cultural attitudes to the new environment that they find themselves in, three questions arise: first, what “kind of culture” is it hoped to develop when programmes are launched to that end?; secondly, how much is known about the environment to be modified?; and thirdly, how should both aspects be linked? One of the problems observed is that the majority of so-called processes of “culturization” and “awareness-raising” as regards water are associated with piecemeal approaches or ones established earlier in other places and under different conditions. Thus, for example, attempts are made to educate the

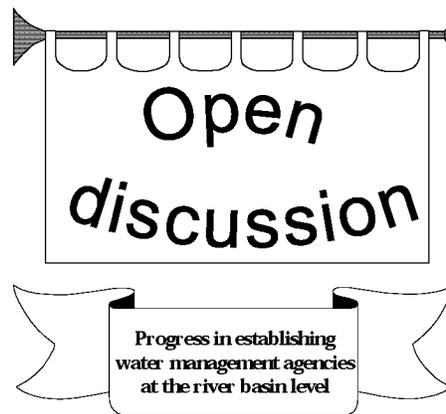
public about economic matters, so that they make decisions on water resources management based exclusively on market prices and so that they respond to “economic instruments”. This approach is certainly useful, though within certain contexts. It is not necessarily more “educated” to think solely in terms of economic values while ignoring social and environmental aspects. Reducing human reasoning to economic reasoning is not a particularly suitable culturization process for relating to the world.

Niels Röling, a well-known Dutch sociologist, believes that the instrumental and economic solutions that have brought human beings into conflict with the environment and led them to plunder it will not by any means be the only solutions to overcome this dilemma. In fact, says Röling, it is these solutions which created the problems. Technology and economics may help build a sustainable society only if they are put to use within a framework of thinking and collective action that is superior to limited instrumental and economic reasoning. Such collective thinking does not appear to be a factor in most of the decisions taken today despite statements to the contrary in official speeches, laws and constitutions. Every day, the public and private sectors, and society at large, express opinions in favour of the environment and social equity (for example, promoting “sustainable development”), but the decisions they make belie their opinions. All governments issue statements expressing “the need to attain sustainable development through participatory, democratic and multidisciplinary decisions incorporating gender and ethnic perspectives, among others,” but decisions are usually made based on the same old criteria.

In Röling’s view, in order to break free of this impasse and act “rationally” in regard to water resources management, the decision-maker must be able to link the soft sciences and the hard sciences. It is easy to see that Röling’s assertion is correct, but simply aspiring to adopt a more socially and culturally focused approach, one that is interdisciplinary, participatory and holistic, is not the same thing as actually achieving it; in a similar vein, it is not sufficient to consider the thinking of society without weighing it against the limits imposed by nature and our knowledge as to how it behaves. Here another paradigm arises. People often believe and assert that being well-informed about the environmental impact of decisions on land and natural resources development and use provides a sufficient basis on which to make correct decisions. However, human beings are slow to react to knowledge about the impact of their actions. For instance, many natural disasters are in actual fact due to the population’s failure to pay heed to the threat of danger by settling in flood-prone areas. The

paradigm that information always leads to sound decision-making is also therefore subject to qualification. It is only valid in a context characterized by a combination of conviction and the potential to implement recommendations and guidelines on prevention.

In summary, therefore, the design of functioning integrated water resources management systems and the attainment of governability in order to secure this management requires, first of all, breaking away from paradigms, myths and beliefs which, though valid in theory or in isolated cases, lose their validity in real-world situations that are much more complex. And second, there needs to be acceptance that, in order to make “rational” decisions, interdisciplinary working methods must be used that foster appreciation and respect for the contribution made by all sciences and disciplines, both hard and soft. Such methods exist and are available for organizing interdisciplinary activities and making participatory, transparent decisions (see Circular N° 2). It is regrettable to note that for now many of the failed attempts at achieving integrated water management goals are due to the use of approaches that are piecemeal, applied out of context and even naïve.



From the hydrological viewpoint, river basins are ideal territorial entities for water resources planning and management. However, in situations where political-administrative jurisdictions do not coincide with the physical boundaries of river basins, many of the decisions that affect the hydrological cycle, water use and the inhabitants of the basin fail to take into consideration this integrated system as a whole. Furthermore, water resources management is normally fragmented along the lines of user groups, sectors entrusted with overseeing the resource, types of use, the source of catchment and other similarly arbitrary criteria. An integrated system and a shared resource are administered in a piecemeal fashion, and as a result more situations of conflict over water resources management occur when they should be avoided, minimized or resolved. **The challenge we face, therefore, is to create**

**competencies for governability over areas delimited by natural factors, such as river basins, which do not correspond to traditional forms of government over political-administrative boundaries, such as states, provinces, regions and municipalities.**

Policies on the use of river basin areas as the basis for water management have differed in their focus and development from one country in the region to the next. Since the late 1930s, many countries in the region have shown an interest in trying to implement such arrangements, but adoption of integrated water management models at the river basin level has run up against a series of difficulties, and continues to do so. Many of the entities set up have been disbanded or have been unable to make headway on integrated water resources management, for reasons that include interagency rivalry, disputes with regional and sectoral authorities, inadequate funding and coordination and the absence of a suitable legal framework, lack of clarity about their roles, and a complicated relationship of administrative and financial dependence.

The issue has again come to the fore in the 1990s, as the countries of the region strive to achieve sustainable development objectives, reconciling economic growth, social equity and environmental sustainability. In spite of the existing obstacles, there is widespread interest in establishing and operating river basin agencies to administer multiple water use and resolve conflicts over its development. As a result of this interest, recently enacted water resource legislation and many proposed amendments to existing laws alike for the first time explicitly cite the intention to administer water resources for multiple-use purposes at the river basin level. This can be attributed to:

- Intensification of conflicts over water use, caused by growing demand for water, an upsurge in pollution problems, the impact of extreme natural phenomena, and the perception that the deterioration of watersheds and groundwater recharge areas is growing in seriousness.
- Decentralization and privatization, which have spurred the arrival on the water management scene of many new actors (e.g., water users, local governments, the private sector, indigenous peoples, and non-governmental organizations) and led to new challenges.
- Concentration and geographical differentiation of problems and conflicts relating to water resources development; these do not occur evenly across a country, but rather vary widely from one river basin to the next, and are especially acute in basins with concentrated economic development.

As a consequence, there has been more debate in many countries in the region about the need to establish water management institutions at the river basin level as a means of resolving conflicts, improving administration and factoring in the impact of water use on the environment and society. Already in many countries, a range of water management functions are carried out by some institution operating at the river basin level, or plans are afoot along these lines. All these experiences differ markedly in their objectives and scope, but the most common approaches can be tentatively categorized into the five following groups: (i) interjurisdictional and transboundary river basin management entities; (ii) entities with substantive water management functions; (iii) entities with functions of coordination and promotion of participation in water management; (iv) entities with functions of protection of priority river basins; and (v) entities with limited functions.

#### **Interjurisdictional and transboundary river basin management entities**

As a general rule, the entities that come under this category are only authorized to make decisions on strictly technical matters and to implement programmes agreed to by the parties. The reason for this is that, generally speaking, those with jurisdiction over water resources are normally reluctant to delegate authority to an interjurisdictional or international institution that is not completely subordinate to them. It is appropriate to distinguish two separate cases:

- **Transboundary river basin entities.** Some 71% of the total surface flow in Latin America and the Caribbean is derived from shared basins, which cover 55% of the total area of the region. In South America, international basins provide 75% of the total flow, while in Central America and Mexico they account for 24% of the total. There is only one international basin in the Caribbean islands, the Artibonite shared by Haiti and the Dominican Republic, and accounting for 17% of the total drainage of the island of Hispaniola. The 1990s have seen a continuation and strengthening of the long-standing tradition of cooperation between the countries of the region in managing and developing shared river basins. The main recent examples include the Trinational Commission for the Development of the Pilcomayo River Basin, established in 1995 by Argentina, Bolivia and Paraguay; the Binational Commission for the Development of the Upper Bermejo River and Grande de Tarija River Basins, also established in 1995 by Argentina and Bolivia; and the Binational Autonomous Authority of the Basin of Lake Titicaca, Desaguadero River, Poopó Lake and the Coipasa Salt Pan, set up by

Bolivia and Peru, in operation since 1996. Nevertheless, the region still has few agencies actively involved in joint management of shared water resources.

- **Interjurisdictional entities in federal countries.** In federal countries, jurisdiction over water resources does not always belong to central government. In such cases, given that the territorial boundaries of local, provincial, state or regional governments do not normally coincide with the physical boundaries of river basins, it is both simpler and more feasible to manage water resources at the river basin level. The main example in the region is provided by Argentina, whose water resources belong to provincial governments. For this reason, and as most river basins straddle several provinces, a number of interjurisdictional entities have been set up, including the Interjurisdictional Committee of the Colorado River (COIRCO) and the Regional Commission of the Bermejo River (COREBE).

#### **Entities with substantive water management functions**

In the countries of the region, there are still very few instances where substantive functions and the power to make important decisions on water management —such as water allocation, water pollution control, etc.— are decentralized to the river basin level. The prime example is provided by Colombia's Regional Autonomous Corporations, which are responsible for administering, within their area of jurisdiction, the environment and renewable natural resources, as well as promoting sustainable development, in line with the policies of the Ministry of the Environment. However, these corporations do not operate at the river basin level, but rather are made up of the territorial entities that geographically constitute a single ecosystem or a geopolitical, biogeographic or hydrogeographic unit. As can be observed, the river basin criterion is only one of several used to determine the physical jurisdiction of these organizations.

Another similar example, though more limited in scope, is the recent proposal contained in the draft Water Law of Peru to create River Basin Authorities, whose functions would include the granting, modification and revocation of water rights, and imposition of administrative sanctions on people who breach water laws. A further, though different, example would be the Regional Offices of the National Water Commission (CNA) of Mexico; the CNA has been promoting the decentralization of its functions formerly carried out at the central level. The Regional Offices are delimited along hydrological and administrative lines, in

such a way that their areas of jurisdiction virtually coincide with the dividing lines of river basins or groups of basins. Similar cases of administrative decentralization can be found in other countries of the region.

#### **Entities with functions of coordination and promotion of participation in water management**

In most of the countries of the region, responsibility for water resources management is diffuse, fragmented and lacking in coordination. For their part, the traditional management structures tend to be centralized, with little participation by users, local governments or other actors. The effects of this management set-up, characterized by fragmentation and lack of coordination and participation, are observed most acutely at the river basin level.

With a view to overcoming those problems, many countries in the region set up, or are debating the need to set up, agencies for consultation or coordination at the river basin level, with key water management functions remaining in the hands of central government water authorities. The functions of such entities are restricted primarily to:

- consulting the opinions of the different actors involved in the river basin, building a consensus of opinion and coordinating actors' actions;
- preparing water resource plans at the local level;
- coordinating certain matters relating to water allocation with the central government water authority, particularly in extreme situations;
- arbitrating, at the first administrative instance, conflicts relating to water resources; and
- compiling information, maintaining registers and conducting inspections.

The River Basin Committees and Water Agencies in Brazil and the River Basin Councils of Mexico operate along these lines. The purpose of the River Basin Committees is to act as "Parliaments" in respect of the water resources of river basins, as they are the decision-making forums within the sphere of each basin. The Water Agencies are the executive secretariats of the River Basin Committees. The River Basin Councils, for their part, are entities for coordination and consultation between the CNA, the offices and agencies of the three levels of government and the representatives of users of the river basin in question.

Also included in this category, though in a more limited form, are Peru's Autonomous River Basin Authorities and Uruguay's Regional Advisory Boards on Irrigation. In addition, there have been proposals to set up

entities with similar objectives and a comparable scope in Bolivia, Chile, Ecuador, El Salvador, Guatemala and Honduras, among other countries.

### Entities with functions of protection of priority river basins

Water resource development in the countries of the region is uneven in spatial terms and is highly concentrated in a relatively small number of areas and river basins. It is also common that in some sectors no organization has responsibilities, while certain types of water-related problems, such as water pollution, fall within the purview and functions of a variety of institutions, without any particular one actually assuming responsibility for them. These two factors go some way toward explaining why special entities for priority river basins have been established in many countries. The functions of these entities typically involve the conservation and protection of water resources and river basins.

Entities of this type have been created in, *inter alia*, Costa Rica, Guatemala, Honduras, Panama and Venezuela. It is also possible to include in this category associations of municipalities, such as Brazil's river basin intermunicipal consortia, created to deal with specific problems affecting various municipalities in the same basin. It is worth adding that, even when river basin entities are set up on the basis of general legislation, it very frequently turns out that only a few function, with the rest either failing to outlast the set-up period or existing solely on paper.

### Entities with limited functions

Though such entities vary widely in their composition and scope, their functions relate mainly to the construction and operation of water works and water distribution to users. One example concerns the typical water user organizations, such as Chile's inspection boards, which are created at the level of river basins, rivers or sections thereof, in order to distribute the water to which their members are entitled, and exploit and maintain common water infrastructure. There are also entities of mixed composition and varying scope, such as the River Basin Committees of the province of Santa Fe in Argentina, whose functions include carrying out maintenance and conservation of existing works in order to preserve drainage conditions, as well as complementary small water works.

If you would like to know more about developments in setting up and operating water management entities at the river basin level, please be aware that we have available for you a report, in Spanish, entitled "*Administración del agua en América Latina y el Caribe en el umbral del siglo XXI*" by Andrei Jouravlev (see "*Publications*").



Franchising is an old idea. It was originally proposed in the United Kingdom in the nineteenth century and was later promoted in the United States in the 1960s. The basic argument is that, under conditions of natural monopoly, a single operator (*ex post*) will provide service even though several operators may be in a position to do so (*ex ante*). In order to exploit competition between potential producers, the regulator announces that it will accept bids from all qualified parties and will award the contract to the competitor who offers the most advantageous conditions. The winner then becomes the monopolist. In theory at least, where various parties submit non-collusive bids to acquire the right to be the monopolist, the competition for the market between *ex ante* producers will hold in check the potential monopoly power of the *ex post* supplier by the competitively determined terms set out in the franchise contract. Thus, competition for the market functions as a sort of discovery mechanism which destroys the monopoly of information the hinders effective regulation.

This approach has been successfully employed in a range of local services, such as street cleaning and trash collection; in such activities, the sunk costs are low, there are many potential competitors with the requisite skills, contract terms and conditions can be easily defined—since uncertainty about technology and markets is insignificant—, contracts have a short life and can easily be rebid without significant inconveniences. Franchising appears to provide an attractive option from the regulatory standpoint, but there are many significant practical problems with such an approach in the water supply and sewerage industry, as well as in most other public utilities with marked characteristics of natural monopoly:

- **Bidding for franchises may not be competitive.** Lack of competition in the awarding of franchise contracts is a common problem in the water supply and sewerage industry, since only a small number of firms are involved in this business. What is more, the small number of firms means that they work with one another, so there is a risk of collusion. In addition, it is possible that the incumbent franchisee enjoys such strategic advantages—stemming from its experience in operating the system or reluctance on the part of the franchiser to switch operators—that potential competitors decline to submit a bid. It is for this reason why care needs to be taken in using short-term or limited forms of private sector participation, such as management contracts and leases, as an

interim arrangement in the transition to longer-term or more comprehensive forms of private participation, such as concessions and divestiture.

- **Problems associated with the valuation and handover of assets, if the incumbent franchisee is displaced by a competitor, may distort incentives to invest and the nature of competition for the franchise.** In the water supply and sewerage sector, assets generally have a longer useful life and a higher component of sunk costs than in most other industries. With a substantial portion of assets underground, it tends to be difficult and expensive to assess their value. It is important to ask, for example, whether the equipment was originally purchased on competitive terms and whether there was adequate maintenance; what method of depreciation should be used; and how appropriate were past investment decisions. This in turn has a bearing on incentives to invest in new assets and maintain existing ones: if the incumbent anticipates that investments carried out over the life of the contract will be undervalued (overvalued), incentives to invest in new assets and maintain existing ones will be correspondingly low (high). In any case, since it is difficult to evaluate the state of underground assets, as the franchising contract nears the end, the franchisee normally has an incentive to stop any maintenance work or even strip the assets.
- **Underbidding or post-contract opportunism.** Once the contract is awarded, any move to replace the successful bidder would be disruptive and expensive and, as a general rule, governments are understandably reluctant to terminate a contract. In view of this, participating firms would have an incentive to put in speculative bids and to try to renegotiate them at a later stage. Therefore, efforts to secure private sector participation would tend in the main to attract those entrepreneurs who have greater lobbying power or who are more inclined to take risks.
- **Problems of contract specification, monitoring and enforcement.** Perhaps one of the most important limitations of the franchising approach arises when it is acknowledged that in a constantly changing world, the optimal price and other contractual conditions change over the course of time. Given that costs and demand conditions change, locking the franchisee into a price or other contractual condition that was optimal at a given point in time is likely either to force it into bankruptcy or to allow it to make windfall profits. There are, in essence, two possible solutions to this problem: (i) complete

(contingent claims) contracts, which stipulate how contractual conditions are to change for every future contingency that might arise; and (ii) incomplete contracts, which set out a procedure for periodic review of contractual conditions. Any manner of contingencies can occur over the life of a contract, even short-term one, and for that reason it is an extremely complex business to write, negotiate, execute and enforce complete contracts in the water supply and sewerage industry. Furthermore, on account of the asymmetry of information between the regulator and the franchisee, it may be that the former is unable to ascertain whether a particular event, such as a change in technology, has occurred. That is why complete contracts require careful monitoring and enforcement and periodic renegotiation. Hence, this approach is either unworkable or undesirable or ends up being essentially the same as traditional regulation. Incomplete contracts provide for the periodic renegotiation of some contractual conditions. Such reviews, which involve the on-going renegotiation, monitoring and enforcement of contracts, are the same as traditional regulation. Lastly, it is worth mentioning that reliance upon auctions and contract-based regulation entails various risks, especially if the government lacks the skills and bargaining leverage to ensure that the contract fairly balances public and private interests.

These and other difficulties pose serious problems which are known to have affected the franchising of public utilities in many countries; modern-day France and the United States in the late nineteenth century are two examples. From the end of the nineteenth century through to about 1920, public utility regulation relied on franchising in the United States. In the early twentieth century, this approach was abandoned in favour of state regulatory commissions. In a book entitled *“The regulation of public utilities. Theory and practice”* Charles Phillips, a well-known and respected American writer, gives the following description of experience with franchising in the United States: “While use of the well-drawn franchise had some merit, in the main the franchise, as actually used, proved a defective instrument for ... regulation ... little regard was paid to the interest of the public ... franchises ... tended to be poorly drafted ... And even when they were well-drawn, the company often benefited, since it was common for the utility’s lawyers to draft the franchise and then present it to the city council for approval. Changes in the prescribed rates or in the service standards were made with great difficulty ... As expected, the companies resisted downward rate changes, and the city councils, upward adjustments ... Service often became poor as the termination date on

the franchise drew near. The company would try to keep its investment as small as possible to avoid loss if the contract were not renewed. The agreements also failed to provide for administrative machinery to keep check on the company to see it met the terms of its franchise ... It was often impossible ... for franchise ... provisions to be changed ... Detailed requirements were unsatisfactory under changing conditions”.

In France, municipalities, of which there are about 38 000, are responsible for the provision of water supply and sewerage services. They may provide these services either themselves (direct management or *“régie direct”*) or by delegation to a private operator (*“gestion déléguée”*). Municipalities enjoy a high degree of flexibility when choosing contractual arrangements for the provision of water supply and sewerage services. The two most common arrangements are: (i) lease contracts, whereby a private firm assumes responsibility for managing the system and the municipality for the investments; and (ii) concession contracts, in which the private operator also takes charge of investments. Some municipalities also make use of management contracts, but these have gradually been replaced by leases and concession contracts.

Although this system of delegated management appears to provide an attractive combination of competition and efficiency, with light and decentralized regulation, this approach is not without its problems:

- On the whole delegation contracts are for a very long term, and this reduces the scope for competition. The Government has recently limited the term of delegation contracts to a maximum of 20 years (with some exceptions), but prior to that, concessions could last 50 or even 75 years since there were no maximum limits (at present a proposal is being discussed to limit the term of delegation contracts to a maximum of 12 years). It is important to note that the longer a franchising contract lasts, the less effect the terms determined in the initial auction will have on the terms of the service provision over the full life of the contract.
- Today, these activities are controlled by just three firms, which sometimes form joint ventures with one another. This is an important constraint on effective competition for the market. There have reportedly been cases of collusion among the firms as well as extensive allegations of political party contributions and corruption. Some observers contend that the system of delegated management has become a highly complex technique for financing municipal budgets at the expense of consumers. Nevertheless, some experts

claim that there is often fierce competition for the initial contract. Other reports criticise the inadequate competition when concessions are awarded, in particular the repeated use of negotiated procedures, and a tendency to extend existing contracts without subjecting them to competitive tender. As a result of this situation, the firms have enjoyed considerable profit margins. It is normally very rare for the incumbent franchisee to be displaced because of its “insider” knowledge and contacts.

- Difficulties in generating effective competition for the market have been exacerbated by the fact that the firms have diversified into many other activities, such as solid waste management, energy, communications and transport. This means that when a municipality awards a delegation contract for the provision of water supply and sewerage services, it is effectively determining its supplier for a wide range of services, making objective bid evaluation difficult. Moreover, contracts are often ambiguous with the incumbent firms subcontracting services to affiliated firms.
- The fact that economic regulation is carried out at the municipal level has created a number of problems. Municipalities are not always in a good position to exercise control on service providers. They find delegation contracts, which are said to suffer from lack of clarity, too complicated and difficult to understand. Supervision is said to be inadequate or non-existent. Municipalities are also often ill prepared to bargain with the big firms with enormous expertise in the field and which wield immense political, economic and financial power. In a bid to overcome these problems, a proposal is currently under discussion to set up a national authority tasked with supervising the provision of services and assisting municipalities by indicating to them what their alternatives are.
- Tariffs are set on the basis of competitive bidding or through negotiation, and are subject to indexation on the basis of price indexes for salaries and other inputs. The problem is that the price index adjustment formula is often based on parameters that a municipality cannot verify and monitor, and that can be manipulated by the firms.
- It is often said that the threat of a return to direct management creates a margin of competitive pressure and strengthens the bargaining position of municipalities. In reality, this threat is largely ineffective and contract termination is extremely rare. The principal reasons for this are: (i) many municipalities do not have, and cannot

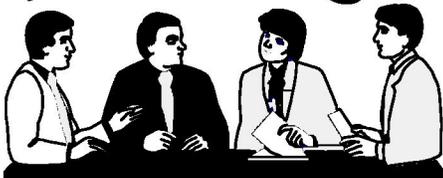
acquire in a short period of time and at an affordable cost, adequate in-house capacity to operate their systems and thus become hostages to private operators; (ii) many systems use advanced technologies which are controlled by the firms and which the municipalities can neither acquire nor manage; and (iii) contract termination and a return to direct management entail significant costs.

In recent years, in part because of the highly critical report on the water supply and sewerage industry published in January 1997 by the *Cour des Comptes* (national audit office), the Government has adopted a number of measures to strengthen the regulatory framework, promote competition and improve transparency in the awarding and management of delegation contracts.

The lesson to be drawn from the discussion presented above is not that the franchising approach is bad or that it should not be used when a public utility is to be privatized (in general, some form of competitive selection is usually preferable), but that the water supply and sewerage industry will always need permanent and detailed traditional regulation. In other words, franchising is not a substitute for traditional regulation, but rather it should be seen as a potentially useful complement to it that seeks to harness some of the desirable information and incentive properties of competition, and thereby helps somewhat reduce the regulatory burden.

If you would like to know more about regulation of natural monopolies in the water supply and sanitation industry, please be aware that we have available for you the following reports: "*Water utility regulation: issues and options for Latin America and the Caribbean*" by Andrei Jouravlev and "*Servicios públicos y regulación. Consecuencias legales de las fallas de mercado*" by Miguel Solanes (see Circulars N° 11 and 13).

# Meetings



First Meeting of Regulatory Agencies of the Americas

From 16 to 19 October 2001, Cartagena, Colombia, played host to the **First Meeting of Regulatory Agencies of the Americas**. The main objectives of the meeting were to: (i) share technical experiences with regulation of water supply and sanitation services; and

(ii) promote horizontal cooperation among the regulatory agencies of the countries of the region. As regards the first objective, participants learned about the dynamics of the sector, together with its strengths and its weaknesses, in the different countries. In terms of the second objective, the greatest achievement was the establishment of the Association of Regulatory Agencies for Water Supply and Sanitation Services in the Americas (ADERASA).

ADERASA was established with the aim of promoting cooperation and coordinating efforts in the drive to develop the water supply and sanitation sector of the Americas. Membership is open to regulatory agencies in the water supply and sanitation sector, and entities entrusted with this task in the Americas. Member countries currently include Argentina, Bolivia, Chile, Colombia, Costa Rica, Nicaragua, Panama and Peru.

The aims of ADERASA are to: (i) facilitate the exchange of information related to the regulatory framework and operations, services and the water supply and sanitation market among member States; (ii) encourage efficient regulation of water supply and sanitation services, thereby advancing integration in the region; (iii) identify and defend regional interests at international conferences; (iv) promote training of professionals and managers working in the regulatory agencies; (v) disseminate information on regulatory policies in the region; and (vi) provide consultancy services in assistance programmes to the countries of the region.

The website of the Water and Sanitation Regulatory Commission (CRA) of Colombia (see "*Internet and WWW News*") has available all the documents presented at the First Meeting of Regulatory Agencies of the Americas, along with the ADERASA charter and the record of the proceedings of the First Meeting.

# Future activities

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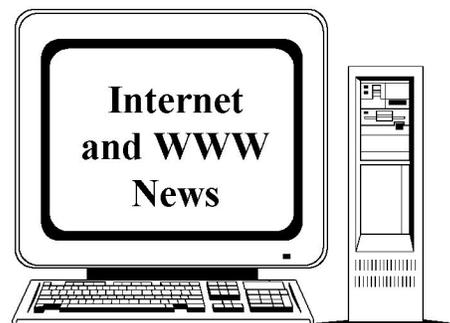
Seminar-Course on the Provision and Regulation of Infrastructure Services

The Latin American and Caribbean Institute for Economic and Social Planning (ILPES), with technical cooperation from the Natural Resources and Infrastructure Division of ECLAC, is organizing the **Fourth International Seminar-Course on the**

**Provision and Regulation of Infrastructure Services**, to be held from 2 to 13 September 2002, in Santiago, Chile (see Circular N° 11). The main aims of the course are to facilitate a structured exchange of national and sectoral experiences in the provision and regulation of infrastructure services and also help build up a regional stock of theoretical and practical knowledge on the subject.

Additional information is available from:

Tel.: (56 2) 210 2620  
 Fax: (56 2) 206 6104  
 E-mail: [cursoilpesdgr@eclac.cl](mailto:cursoilpesdgr@eclac.cl)  
 WWW: <http://www.eclac.cl/ilpes>



Among websites on water resources management and use that are worth visiting, we highlight the following:

- Following up on workshops held to raise awareness about the study entitled "*Argentina — gestión de los recursos hídricos: elementos de política para su desarrollo en el siglo XXI*" ("Argentina — water resources management: elements of policy for their development in the twenty-first century") (30 August 2000), the provinces convened the sectors involved in developing and managing their water resources with a view to formulating a policy statement specifying how water resources are to be used as a means of sustainable development. This statement is being compiled by the Undersecretariat for Water Resources in a document entitled "*Principios de política hídrica de la República Argentina*" ("Principles of water resources policy in Argentina"), which seeks to establish guidelines that enable technical, social, economic, legal, institutional and environmental aspects of the resource to be integrated in a modern water resources management system. Further information is available at [http://www.mecon.gov.ar/hidricos/politica\\_hidrica/inicio.htm](http://www.mecon.gov.ar/hidricos/politica_hidrica/inicio.htm).
- **Agualtiplano.net** is a website dedicated to promoting efficient water resources management, the defence of indigenous water rights and protection of the ecosystems in the Altiplano of Argentina, Chile, Bolivia and Peru (<http://www.agualtiplano.net>). The site compiles, organizes, analyses and

- publicizes a comprehensive and continually updated range of information available on water resources of the Altiplano, for use by government agencies, companies, universities, non-governmental organizations, research centres and other interested parties.
- In 1990, Venezuela began the process of restructuring and liquidation of the National Institute of Sanitation Works (INOS), at the same time decentralizing water supply and sanitation services with the establishment of regional water companies. Upon entering into agreements with the municipalities, these companies take charge of the provision of water supply and sanitation services. One such company is **Hidrocapital**, which is responsible for supplying services to almost 5 million people in 23 municipalities in the Metropolitan Area of Caracas, and the states of Miranda and Vargas. Hidrocapital's website (<http://www.hidrocapital.com.ve>) provides information on its activities, systems, tariffs, legislation, etc.
  - The World Wildlife Fund for Nature (WWF) has recently published an interesting document entitled "**Elements of good practice in integrated river basin management: a practical resource for implementing the EU Water Framework Directive**". The document is not intended to be a comprehensive guide to all aspects of the implementation of the European Union Water Framework Directive, but rather seeks to provide clear, concise and practical information on: (i) water and agriculture; (ii) the role of wetlands in river basin management; and (iii) good practice in river basin planning. The document is available at <http://www.panda.org/europe/freshwater/pdf/WFD-PRD-en.pdf>.
  - The **River Basin Council of the Valley of Mexico** is one of the 25 river basin councils set up in Mexico in accordance with the National Water Law (see Circular N° 13). The Council provides for coordination and consultation between the National Water Commission (CNA), the offices and units of Federal, State and Municipal Governments and representatives of the users of the river basin, and its primary objective is to formulate and implement programmes for improving water resources administration, develop water works and related services, and assist in the conservation and restoration of the Valley of Mexico and Tula River basins. The Council has a website (<http://www.ccvm.org.mx>) with information about its activities, legal framework, news, water resources management at the river basin level, water culture, etc.
  - The **Water and Sanitation Regulatory Commission** (CRA) of Colombia is responsible for promoting the sustainable development of water supply and sanitation services by means of regulation that fosters competitiveness, stimulates investment and prevents abuse of dominant market position, in order to ensure reasonable charges, high-quality service and wide service coverage. The Commission's website provides information on its activities, the institutional structure of the sector, legislation, news and publications, along with its proposals for the development of a new regulatory framework for the sector (<http://www.cra.gov.co>). The website also features detailed information about the First Meeting of Regulatory Agencies of the Americas (see "**Meetings**") and the International Workshop entitled "Participatory Construction for the New Regulation of Water Supply, Sewerage and Solid Waste Management Services in Colombia" (17–19 October 2001, Cartagena).
  - The **Public Services Regulatory Authority** (ARESEP) of Costa Rica was set up on 6 October 1996, a development which saw the National Electricity Service (SNE) transformed into a modern independent regulatory agency. The Authority is responsible for effectively and efficiently regulating utilities by means of timely, clear and transparent decisions based on technical criteria. The ARESEP website (<http://www.aresep.go.cr>) offers detailed information on its history, legal framework, organizational structure, public hearings, etc., as well as on the services and companies it regulates.
  - **European Water Management News** is a weekly e-mail service with interesting water-related news from around the world. To subscribe to the news service, send an e-mail with "Subscribe European Water Management News" in the subject line to [jan.van.de.kraats@kabelfoon.nl](mailto:jan.van.de.kraats@kabelfoon.nl).
  - **WCA infoNET** is a new internet-based integrated information service on water conservation and use in agriculture (<http://www.wca-infonet.org>). It merges high quality information resources and expertise allowing direct access to publications, documents, data, computer programs and discussion groups which provide a knowledge base, support and the necessary global platform for decisions on water conservation and use in agriculture.
  - The **National Environmental Information System** (SIAN) of Argentina is a federal system, currently comprising 25 nodes corresponding to the government environmental organizations of each province and at the national level (the Secretariat of Sustainable Development and Environmental Policy of the Ministry of Social Development and Environment), and six nodes corresponding to other institutions concerned with the environment. The System's main objectives are to: (i) compile and process environmental information, which can then be accessed by government environmental organizations, non-governmental organizations and the public; (ii) provide the government sector with instruments that facilitate decision-making in environmental management; and (iii) facilitate communication and exchange of information among environmental agencies (<http://www.medioambiente.gov.ar/sian>).
  - The **International Conference on Freshwater**, held in Bonn, Germany, from 4 to 7 December 2001, brought together government delegates from 118 countries, representatives from 47 international organizations and delegates of 73 organizations from major groups and civil society. Main outcomes of the conference are the Ministerial Declaration, adopted by the ministers, and the Recommendations for Action. Additional information is available at <http://www.water-2001.de>.
  - The complete text of the **White Book on Water in Spain** (see Circular N° 10) is available at the following website maintained by the Spanish Water Information System (Hispagua) (see Circular N° 12): [http://hispagua.cedex.es/Grupol/Documentos/1\\_b/indice.htm](http://hispagua.cedex.es/Grupol/Documentos/1_b/indice.htm).
  - The **Iberoamerican Water Information System** has been established as a result of the First Meeting of Technical Representatives of the Countries of Latin America in the Water Sector (10–12 July 2001, Cartagena, Colombia). The System's website (<http://hispagua.cedex.es/latino/latino.htm>) provides access to a number of interesting documents, such as, "**Política Nacional de Recursos Hídricos**" ("National Water Resources Policy") (Chile), "**Dirección General de Aguas (1969–1999). 30 años**" ("General Water Directorate (1969–1999). 30 years") (Chile), and "**El agua en México: retos y avances**" ("Water in Mexico: challenges and advances") (Mexico).
  - DIAA is a discussion list specializing in the dissemination, promotion and exchange of information on the different aspects of the Inter-American Water Day (IAWD). It is possible to subscribe at <http://www.cepis.ops-oms.org/bvsadiao/i/diaa.html>. The occasion has been celebrated on the first Saturday of October since 1993. Each year attention is focused

on specific themes and materials are produced for distribution throughout the Americas for use by the different countries. The theme chosen for the IAWD in 2002 is "Water, waste not, want not". The DIAA website contains a mine of useful information about this initiative, and provides access to support materials, case studies, news and useful links (<http://www.cepis.ops-oms.org/bvsadiaa/i/home.html>).

## Publications



Recent publications of the Natural Resources and Infrastructure Division related to water resources management and use in Latin America and the Caribbean:

- **"Administración del agua en América Latina y el Caribe en el umbral del siglo XXI"** by Andrei Jouravlev (*Serie Recursos Naturales e Infraestructura* N° 27, LC/L.1564-P, July 2001) (available in Spanish only). In recent years, virtually all the countries of Latin America and the Caribbean have embarked on reforms of laws and organizations related to water management and development. In some countries, this process has already been completed, while in others it is well under way. In spite of differences that are only to be expected in a region with such markedly disparate countries, the reforms have some common characteristics, such as the desire to establish an administrative system that provides for integrated water resources management; the increasing perception that water must be managed at the river basin level; the reduced role of the State; the

shift in the responsibilities exercised by the State, away from the functions of financing, execution and operation to those of supervision, promotion and regulation of third parties' activities; the decentralization of responsibilities to local governments; the interest in using economic and market instruments in water resources management; and the involvement of the private sector and users in water management and development. This document studies the changes recently introduced to the institutional framework of the countries of the region in relation to: (i) integrated water resources management; (ii) management of these resources at the river basin level; and (iii) provision of drinking water supply and sanitation services. The current situation is examined, together with recent developments in the three above-mentioned points in Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

- **"Water management at the river basin level: challenges in Latin America"** by Axel Dourojeanni (*Serie Recursos Naturales e Infraestructura* N° 29, LC/L.1583-P, August 2001). Water management is akin to conflict management among human beings and between human beings and their environment. Water and river basin management systems are created to avoid, prevent or resolve such conflicts. Humankind needs to learn to live with these conflicts and deal with them adequately. All the more so since the relative scarcity of water will become ever more pressing as time goes on, as a result of economic growth, social demands and climate change. Competition between users will become ever more intense and

ruthless, so that legislation and institutions to manage the system satisfactorily will become an absolute necessity. To implement processes of integrated water and river basin management it is necessary to form alliances or agreements with many actors who normally act independently by sector, and in areas defined according to administrative and political criteria which do not coincide with the limits of the river basins. It is often difficult to co-ordinate these actors in Latin American and Caribbean countries due to the existence of a vast informal sector of the population which neither complies with the legal norms nor responds to the economic instruments that are used in the countries more advanced in their organizations for water resources management and use. River basin management and the creation and operation of organizations for water resources management at the river basin level is one of the central areas of work, both in terms of policy-oriented research and technical advisory activities, of the Natural Resources and Infrastructure Division. These technical advisory activities and policy-oriented research have resulted in many studies on various aspects of river basin management and the creation and operation of river basin organizations, but most of them are available only in Spanish. The objective of this publication is to make a summary of this research available in English.

The publications of the Natural Resources and Infrastructure Division are available in two formats: (i) as printed documents, single copies of which are sent free of charge by airmail (while supplies last); and (ii) as electronic files (Microsoft Word or PDF formats) which are sent as attachments to e-mail. Requests should be sent to [ajouravlev@eclac.cl](mailto:ajouravlev@eclac.cl) or the *Natural Resources and Infrastructure Division, CEPAL, Casilla 179-D, Santiago, Chile*. Most of the recent publications are also available at our website at <http://www.eclac.org/drni>.

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Natural Resources and Infrastructure Division  
Casilla 179-D  
Santiago  
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