

# Effective Water Governance in the Americas: A Key Issue\*

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The report refers to water, whether surface water or groundwater, in all its forms and conditions. The term "institution" is used in the wider sense, to include regulations, organisations and other processes that determine the context in which water should be managed, allocated and protected.

# I. INTRODUCTION

## 1. Background

In the Framework for Action presented at the Second Global Water Forum (The Hague, 2000) - the aim of which was to provide water security for human development at the outset of the 21st century - it was stated that "the water crisis is often a crisis of governance", thereby identifying the need to place efficient water governance among the principal priorities for action (GWP, 2000).

The Ministerial declaration made at the same event highlighted this point of view, and demanded: "that water should be wisely governed to ensure efficient governance, so that public participation and the interests of all stakeholders be included in the management of water resources".

At the United Nations Millennium Assembly (2000), the Heads of State stressed the importance of water conservation and management, both for environmental protection and, in particular, "to stop the unsustainable exploitation of water resources, by developing water management strategies at the regional, national and local level, which provide both equitable access and adequate supplies".

Finally, at the Fresh Water Conference in Bonn (2001), the ministers recommended taking action regarding water governance. Their proposal was that "Each country should have in place applicable arrangements for governance of water affairs at all levels and, where appointed, accelerate water sector reforms".

The Third Global Water Forum, planned for March 2003 in Japan, and its Ministerial Conference, will not only review progress in the implementation of agreements made at previous international meetings, but will also give significant attention in its discussions to the capacity for effective governance of water resources, in order to achieve a greater commitment to attaining tangible results from governments and the community.

Consequently, one of the main topics of the Third Global Water Forum will be the "Dialogue on Effective Water Governance", the organisation of which was

charged to the Global Water Partnership (GWP). Preparatory activities for this large-scale dialogue on governance included electronic workshops and forums at various levels in many countries and regions of the world. The meeting called "The Water Forum for the Americas in the 21st Century", convened by the Mexican government, proved to be a particularly valuable contribution. This document is based on the original document presented in Mexico, with subsequent contribu-

## *Water crisis is often a governance crisis*

tions and comments, especially those from the Regional Workshop organised by the South American Global Water Partnership, held on 12-13 January, 2003, in Buenos Aires, Argentina. Although this report is based mainly on the Dialogues and debates held in South America, in general it is applicable to the whole of Latin America. In line with this, the text of this report makes no distinction between the terms "South America" and "Latin America", and will use Latin America in the generic sense throughout.

## 2. Theoretical Framework

The concept of governance as applied to water refers to the capacity of a country to coherently organise the sustainable development of water resources. This definition encompasses both the capacity to design socially acceptable public policy that fosters the sustainable development of water resources and to implement them effectively through the relevant institutions.

The degree of governance within a society in relation to water management is determined, among other factors, by the following:

- The degree of implicit or explicit consensus regarding the nature of the linkages between society and water.
- The existence of consensus regarding the bases for public policies that expresses these linkages.
- The availability of management systems that enable effective policy implementation and monitoring within a framework of sustainable development.

Thus, governance implies the capacity to both generate and implement appropriate policies. These capacities are the result of having established consensus, having devised coherent management systems (regimes based on institutions, laws, cultural factors, knowledge and practices), as well as adequate adminis-

tration of the systems (based on social participation and acceptance), and capacity building.

As can be seen, a core element of governance is the capacity of constructing (that is, introducing and developing) institutional arrangements in harmony with the nature of the abilities, limitations and expectations of the system or area under consideration.

The importance of the term "governance" in the region is currently associated, to a large extent, with both the limitations and the possibilities of societies in implementing the profound institutional changes that have been characteristic of the past decade. These changes have often implied the creation of a new institutional structure, which has meant the design and recognition of new ground rules, the creation of organisations and the development of new forms of relationships, both formal and informal, of public and private participants. Any process of reforming a social order is the result of the radical transformation and dismantling of the previous social order. In fact, what may lie at the heart of the problems or the crisis in governance in many Latin American countries is the incompatibility of previous institutional arrangements with the new ones. The crisis will be more acute and extensive according to the scale of the changes undertaken, the pre-existing skills and capacities and their usefulness in dealing with the challenges posed by the transformation, and, in particular, according to the coherence of the new institutional arrangements vis à vis the structure and nature of the society and the possibilities and restrictions in place for effectively dealing with the proposed new ground rules.<sup>1</sup> From a pro-active perspective, the crisis can be regarded as a process in which there will always be gaps to be filled and contradictions to be resolved.<sup>2</sup> It is also necessary to bear in mind that, although the situation in the region has improved compared with the past, there is still a long way to go, as governance is not a predefined solution, but a process that needs continuous refinement as a function of new challenges and problems. Even when there are general guidelines, there are no set models, and issues are resolved as they arise; consequently flexibility and adjustments to time and place are of great importance.<sup>3</sup>

Governance is influenced by globalization and by each country's national situation, the lack of adjustment of legal systems and institutions, and the existence of special legal situations, as well as by pressures from interest groups.

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1 Corrales, Maria Elena, "Gobernabilidad de los Servicios de Agua Potable y Saneamiento en América Latina", April 2002, SAMTAC-GWP. Caracas, Venezuela, pp. 4, 6, 7.

2 Comments made by the Brazilian delegation at the SAMTAC meeting held in Buenos Aires, 22-24 January, 2003.

3 Comments made by the Brazilian delegation at the SAMTAC meeting held in Buenos Aires, 22-24 January, 2003.

### 3. The importance of the issue to Latin America

The very limitations of governance make it a subject worthy of study.<sup>4</sup> The growing awareness within the region of concerns such as the unsustainable use of water, its scarcity, pollution, monopoly control and the lack of access to water-related services of significant sectors of the population, all illustrate the relevance of the issue.

The importance of water governance in Latin America is clearly reflected in the series of experiences, proposals for and processes of reform of water legislation and management in most of the countries in the region, as well as in the current programs and proposals for reforming water-related services, particularly urban water and sanitation utilities. In some cases these programs and proposals have been developed locally, with significant local input, while in other cases they have been proposed by external agencies.

Some countries have implemented significant reforms. For example, Brazil has adopted a new water legislation and a national water management policy; Chile has reformed its water law and water and sanitation sector; Argentina has privatised both the hydroelectric sector and the water and sanitation utilities in several cities; Colombia and Bolivia have also privatised some water and sanitation services, and Mexico recently reformed its water legislation and also privatised some water-related services. In addition, a number of countries, including Bolivia, Paraguay, Peru, Ecuador, El Salvador, Honduras, Venezuela, Guatemala, Costa Rica and Chile, are currently discussing modifying or reforming their water legislation.

The specific content of these procedures has been determined by various perceptions of the problem, ranging from those that emphasise a limited number of criteria, which are not necessarily related to the nature of the question at hand (tending to emphasise private property rights, minimising the character of water as a public good) to those that assume conditions of perfect competition, which in practice do not exist (as is sometimes the case with some public utility regulators). In some cases these restricted or very optimistic visions of water management have resulted in the monopoly control of water resources and in inadequate regulatory frameworks.

The issues outlined above illustrate both the significance of the concept of governance per se, as well as its importance as a topic for discussion at the Japan Forum. Essentially, if governance is to be understood as the capacity to address concrete problems in the region, then it is clearly relevant to emphasise it at the World

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4 Olson, M. "Auge y Decadencia de las Naciones (Rise and Fall of Nations)", Barcelona, Ariel 1986.

Water Forum in Japan,<sup>5</sup> given that the challenges presented by water management and the accessible provision of services to the population are not being met.

#### 4. Aims of this report

This report has been prepared for presentation at the Third World Water Forum, to be held in Japan, 16-23 March, 2003. The objectives of the report are:

- to indicate, in an overall framework, those aspects of governance that are particularly relevant in the context of Latin American countries;
- to compile the proposals put forward in the various national dialogues that were held in preparation for the Third World Water Forum.

In line with the above, the aim of this report is to stimulate an active debate and to generate questions and suggestions from the Latin American perspective

### *Globalization and countries national context are factors that influence governance*

that may provide a valuable contribution to the goals of the Third World Water Forum. Chapter II describes and analyses the general context of the water governance debate in the region. Chapter III identifies and analyses eight topics that, from the available evidence, appear to be critical for water resources governance. Finally, Chapter IV considers strategies and positive action for overcoming the identified limitations.

## II. WATER GOVERNANCE AND THE SOCIAL, ECONOMIC AND POLITICAL BACKGROUND

Water management problems, both in respect to the resource itself and to water related services, neither originate nor can be solved within the confines of water resources alone. For this reason, water resource governance cannot be either analysed or understood outside of a general frame of reference to governance and its related problems in the global society. A lack of awareness of this reality, coupled with an ignorance, on occasion deliberate, of contextual differences, can result in the proposal of greatly over-simplified, uniform, and generalised solutions that are<sup>1</sup> simplistic, or ideological, and eventually counterproductive. The following section briefly outlines some of the characteristics of the social, economic and political processes within the region and the challenges facing the State and civil society in their efforts to construct effective governance.

### 1. Social, economic and political challenges

Latin America is characterised as belonging to the developing regions of the world. The per capita income ranges from U\$700 to U\$7,000,<sup>2</sup> and a large proportion of its population lives below the poverty line (211 million inhabitants, equivalent to 43.8% in 1999),<sup>3</sup> in poor health (infant mortality rate of 36 per thousand live births),<sup>4</sup> and housing conditions (a housing deficit of 20 million units),<sup>5</sup> and is poorly educated (illiteracy rate of 11.1%).<sup>6</sup> With regard to human development, most Latin

1 Arbor, Xavier and Giner, Salvador: "La Gobernabilidad: Ciudadanía y Democracia en la Encrucijada Mundial" Siglo Veintiuno de España Editores, S.A." 1996, Madrid, p. 2.

2 ECLAC, Division of Statistics and Economic Forecasts, National Accounts, Gross Domestic Product per inhabitant at constant market prices.

3 ECLAC, Social Panorama 2000-2001.

4 ECLAC, Population Division, Demographic Bulletin No 67.

5 ECLAC, Census Data, Environment and Development Series, Joan MacDonald, Daniela Simioni; "Urban Consensus".

6 UNESCO, Statistical Yearbook, 2002 forecast.

5 Corrales, Maria Elena, op.cit, pp. 4, 6, 7.

American countries are ranked between 34 and 108 in the Human Development Index, only Argentina, Uruguay, Chile and Costa Rica are classified as having high levels of human development.<sup>7</sup> Furthermore, Latin America is the region with the highest level of social inequality in the world, according to World Bank statistics.<sup>8</sup>

Latin America's political history, with the exception of certain periods, has also frequently suffered long periods of instability and interruptions in the processes of democratic development that reflect an endemic incapacity to meet the social needs of the population.

The last few decades have been marked by profound changes. The 1980s was in general a period of marked stagnation, "the lost decade", characterised by instability, a debt crisis reaching the equivalent of 378% of total exports and 66% of the regional Gross Domestic Product, and serious macroeconomic imbalances (fiscal deficit reaching 10% of GDP in the second half of the decade).

In the first half of the 1990s, Latin America entered into a period of growth and recovery: between 1990 and 1996, GDP grew at an average annual rate of 3.2%,<sup>9</sup> inflation was curbed, exports and investments increased, and the level of debt decreased. The region experienced some degree of democratic consolidation. However, the second half of the decade has again been characterised by stagnation, with GDP growing at an average rate of 2.0% per annum<sup>10</sup> for the period 1996 to 2001. It has also been strongly affected by instability and the crises in international trade (in Asia, Mexico, Brazil and Argentina), compounded by political instability, and lack of confidence in the existing development model.

Since the 1980s, the role of the State and the governance of society have been vigorously debated in the region. Most countries have undertaken significant

reforms designed to reduce the role of the State in entrepreneurial activities and in the provision of services, which, in some cases, have been accompanied by privatisation and the liberalisation of markets and trade. The political and social instability resulting from recent economic crises in the region has led to strong questioning of the economic reforms implemented, especially of the ability of the State to create and regulate markets in defence of the public interest. The outcome remains uncertain, and some perspectives suggest that a variety of responses will be required.

## 2. Issues facing the State and civil society

Studies carried out on the public perception of government institutions often show that these have an alarmingly low level of credibility. Various factors have influenced this, which are not always attributable to the institutions themselves. However, these include the failure of the institutions themselves to solve the more critical problems that afflict society, either due to the limitations of the environment in which they operate, or as a result of a lack of resources, authority, or access to political power. Other factors that influence credibility are ideological prejudices and opinions about the role of the State and its regulation of the private sector, weaknesses of the institutions of civil society, the perceived co-optation of institutions by specific interest groups, and problems arising from increasing globalization.

### a) *The inefficiency of public administration*

A fundamental reason for the loss of credibility by public institutions is their incapacity to meet the basic needs of the population in terms of public services. In many cases these deficiencies are the result of: (i) outdated and inefficient management practices; (ii) political intervention - understood as the intervention of public figures in management, operational or economic decisions for short-term or opportunistic political ends; and (iii) the lack of financial and human resources, or a weak institutional structure (lack of clear roles and power relationships, the absence of effective conflict-solving mechanisms, among other factors).

Thus, organisations responsible for managing water resources often do not have any accounting or administrative capacity, a problem that frequently becomes worse at the local level as a result of decentralisation processes implemented without an adequate analysis of existing capabilities. In some Latin American countries, this had led to institutional arrangements in the water sector that are not in tune with the significance of water allocation and the monitoring of water-rela-

7 UNDP; Human Development Report 2001

8 Trends in Income Distribution, Social Panorama in Latin America 2000-2001; ECLAC; "Income distribution in Latin America stands out internationally especially because of the disproportionate amount of the total income that the 10% of the richer households manages to amass. Except for Costa Rica and Uruguay, this strata receives over 30% of the income, and in most of them the percentage is more than 35%".

9 ECLAC: GDP, based on 1995 dollars

10 Ibid.

ted public services. To a large extent this is the result of prejudice in respect of the role of the State, a prejudice that has negatively affected public institutions at the global scale (one only needs to think of the accounting practices applied to large companies that have led to their collapse).

### **b) The weak regulatory role of the state**

The management of a public good, such as water, as both a resource and a service, is problematic and precarious when regulatory institutions do not adapt to the nature of the thing they are regulating. In this respect, the procedures for institutional change in Latin America have often neglected the fact that markets need laws and structures to function properly, and that the state is the most appropriate regulator. Markets do not function properly without free flows of information, competition, and control of externalities. Liberal Utopias do not lead to prosperity. Markets are human institutions and are therefore imperfect; they are "too important to be left to ideology".<sup>11</sup> According to Stiglitz, in this scheme the State in general was seen as incorrigibly corrupt.<sup>12</sup> In some cases, the result of this distorted vision has been that administrative structures for water management and the regulation of water services have been deliberately designed with ex profeso limitations on State power, or with proposed policies that lead to a distortion of their information bases.<sup>13</sup>

### **c) The weakness of civil society**

In developed countries with strong corporate

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11 Barry Gewen, reviewing the book by Stanford's University Professor, John McMillan "Reinventing the Bazaar, A Natural History of Markets", New York Times, Book Review, June 16th, 2002.

12 Interview with Joseph E. Stiglitz, John Lloyd, "The Russian Devolution", The New York Times Magazine, August 15th, 1999. Mr Stiglitz is a Nobel Prize winner, President of the Committee of Economic Advisors under President Bill Clinton and ex chief economist at the World Bank.

13 Sappington David, 1986, "Comments to Regulatory Bureaucracy", Information Economics and Policy 2 (4): 243-58, according to a quotation in Comment on "Regulation, Institutions and Commitment in Telecommunications" by Levy and Spiller, David Sappington, "Proceedings of the World Bank Annual Conference on Development Economics", 1993, p. 256. "It may be in the interest of the recipient country to make as difficult as possible the measurement of profits due to investments ... the less visible investors can make their investments, the less the receiving country will be inclined to usurp these profits ... Accounting systems can be specially designed for these effects or vertical integration of the regulated company can be encouraged in order that creative price transferences may be used for measuring profits in the relevant industry. These are surprising opinions considering that the importance of appropriate information led to Joseph Stiglitz winning the Nobel prize. He develops these ideas further in his book "Globalization and its Discontents". Regarding Stiglitz and his role, see Campodónico, Humberto, "Los Economistas y el Poder del Banco Mundial" no publisher.

structures representing various interest groups (such as industrial associations, public and user organisations, trade unions, and environmental pressure groups), with a high degree of pluralism, with a relatively even balance of power among them, with effective back-up structures, and with well-structured legal and education systems, consensus and self-regulation are tools that are increasingly used with the consequent reduction of transaction costs. However, this system, when transferred to societies in which there is both an imbalance of power and inequality of access among the various groups, leads to the group with the greater capacity of de facto political leverage managing to manipulate the political system for benefits that are not necessarily in the common interest. In this context, reference to civil society loses part of its *raison d'être*, because the de facto principles on which it functions are absent.

***Small groups are not in the condition to provide comprehensive visions of existing problems***

This asymmetry may lead to outcomes such as: unjustified allocation of water rights; ignoring the water uses of indigenous groups; support for projects with an overall negative economic impact, but which yield benefits to one particular sector; regulatory regimes that fail to induce efficiency in the provision of water-related services, to mention only the most notorious examples.

This need for balance in water management has been a subject of fundamental importance, because imbalances between environmental variables, economic sustainability and the socio-political dimension, lead to a crisis in governance.<sup>14</sup>

In addition, the weak presence of civil society often can be exploited by small but active groups, unrepresentative of society as a whole, that are unable to generate comprehensive visions of current problems, often therefore only managing to reproduce ideas out of context, ideas which originated within very different realities.

### **d) Co-option and corruption**

Associated with the situation discussed above, on occasion, the public perception of the capturing of the state apparatus by a particular group of users contributes to the view that the apparatus itself is to the detriment of the community as a whole.

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14 Corrales, Maria Elena, intervention in the Electronic Forum on Effective Water Governance, in Spanish Global Water Partnership, June 24/26, 2002, p.9.

Also notable is the co-option of regulatory bodies, which, combined with poor regulatory design and a lack of operational capacities and resources, erodes institutional credibility. For instance, in the privatisation of water and sanitation utilities in Buenos Aires, the lack of information and transparency in regulatory decisions, together with ad hoc interventions by the State, made it difficult to reassure consumers that their assets were being protected and that concessions are sustainable.<sup>15</sup> The regulatory model has been weak and inefficient. The co-option of the regulator, and perhaps also the government, has been mentioned as one of the main reasons for problems with the governance of the concession.<sup>16</sup>

Furthermore, frequent mention has been made of serious corruption problems in the region. Recent reports show that, based on a world corruption perception index (CPI), on a scale from 1 to 10 (the higher the score, the lower the level of perceived corruption), only 2 countries, Chile (7.5) and Uruguay (5.1) score over 5, while Costa Rica scores 4.5.<sup>17</sup>

#### **e) The emergence of new issues**

Over the last few decades, the State has had to pay particular attention to topics that previously were often given only marginal attention. This is the case where there are profound ethnic and cultural differences within the countries of the region and where importance has been given to environmental issues. Growing awareness of these issues at both the global and national levels has led to various modifications being introduced to both legal and institutional frameworks in some countries, but, although meaning improvements in the significance given to these questions over previous conditions, they have frequently failed to live up to expectations. Thus, both issues are increasingly visible on the political agenda and sometimes lead to serious differences of opinion.

#### **f) Problems associated with globalization**

A subject relevant to the governance of water resources and related services is the effect that international trade and investment agreements may have on national capacities to manage resources and to regulate services. Few have paid attention to the fact that these agreements - which override other laws - may affect the

roles and functions of local governments, as national agreements will prevail over local authority.

As a consequence of globalization, many services are provided and water rights held by companies within foreign investment protection systems or special conflict resolution regimes, which means that external jurisdictions can intervene in local matters. The effects of this situation have yet to be fully analysed. Furthermore, it can also subject activities and resources to legal regulations that are not within the field of expertise of local managers or regulators of the resources or services involved and they are often unaware of these and of their implications. Examples of such regimes include foreign investment protection treaties, common throughout the region, or the regulations that may eventually be implemented via the Free Trade Association of the Americas (ALCA), many of which would be based on NAFTA (The North American Free Trade Agreement). However, many analyses of NAFTA, undertaken outside Latin America, have been critical of the treaty.<sup>18</sup>

In this context, States have lost authority to regulate private companies in the public interest.<sup>19</sup> A number of companies engaged in public services in Argentina, including Aguas Argentinas<sup>20</sup>, are suing the Argentine government in various courts (in France, CIADI-World Bank) in order to demand tariff increases as a consequence of the devaluation of the Argentine peso.<sup>21</sup> Also in Argentina, the International Monetary Fund and the Group of Seven have pressured the government for an increase in tariffs, in spite of the probable social and inflationary impacts this would have.<sup>22</sup> Stiglitz has coined the phrase "World Government without a World State" to refer to the current phenomenon of institutional decisions being made outside the countries that are affected by them.<sup>23</sup>

15 Alcazar, Lorena, et al. "The Buenos Aires Concession", The World Bank Development Research Group, Regulation and Competition Policy, April 2000, Policy Research Working Paper 2311, Front Cover.

16 Rogers Peter, "Water Governance", Fortaleza Draft, prepared for the Interamerican Development Bank (IDB), February 4th, 2002, p.4.

17 Transparency International (TI) Report, August 2002 based on assessments by institutions and analysts from 102 countries.

18 "Nafta's powerful little secret" by Anthony DePalma published in The New York Times March 11th, 2001.

19 Suggestions arising from "Private Rights, Public Problems: A Guide to NAFTA's Controversial Chapter on Investor's Rights". International Institute for Sustainable Development - Governments of Canada and Manitoba, Canada, 2001.

20 The private concessionaire (parent company Odeo) operating the water and sanitation services in a large part of Buenos Aires.

21 Clarín, Buenos Aires, 29 June, 2002.

22 Clarín, June 22, 2002. Some authors note that international economic institutions have been captured by the commercial and financial interests of the richest countries Stiglitz Joseph, "Globalization and its Discontents" Ed. Santillana, España 2002, p. 44 (Spanish edition).

23 Stiglitz, op. cit supra, 47.



## *As a consequence of globalization, many companies provide services and hold rights*

notion that the arbitration mechanisms so popular today are not particularly suited to dealing with matters pertaining to the public interest.<sup>24</sup> According to Stiglitz, the way in which some international institutions work adversely affects democracy, as they dictate policy based on very restricted terms to governments.

This has weakened the role of the State, and as yet no universally accepted mechanism has been devised for dealing with this erosion of power. There is, however, the growing

texts of severe general governance problems.

It is also important to consider the following points:

- The last decade has seen a growing awareness in public opinion in the region, as reflected in the many declarations made both nationally and internationally, regarding the importance of water for future human development. This awareness has been influenced both by the dissemination into the public domain of the conclusions reached at the various international conferences and other events, as well as the growing number of conflicts over water resources of which the public is aware. Such a situation did not exist 10 years ago, as can be seen by comparing the results of the first Earth Summit held in Rio de Janeiro in 1992 with those of the second held in Johannesburg in 2002.
- A second element contributing positively to the efforts aimed at improving water governance is the growing conviction of the need for a reform of the State, resulting from greater demands from citizens as beneficiaries of state actions and users of public services.
- Finally, it must be mentioned that water management, because of its undeniably social character and close link to the fulfilment of basic needs, is also an appropriate means for strengthening social structures from the bottom up and often, in the medium or long term, can be a catalyst for cooperation, transcending ideological conflicts that make problem-solving difficult in other areas of society.

### **3. Factors favouring the search for solutions**

Faced with the scenario of difficult social and economic conditions outlined above, of the high level of political instability prevailing in most countries and the problems facing the State and civil society, it must be considered whether it is feasible to effectively address the problem of water governance in the region.

In this regard, it is important to remember that, historically speaking, when societies have had to face major challenges in water management, they have been able to create effective governance systems, arising from the need to control water both for protection and for use, both nationally and locally. Ancient China and Egypt are notable cases. More recent examples include the development of the American West, the creation of local authorities in the Netherlands and of the river basin institutions in Spain.

In the Americas, the need for water management - particularly in arid areas under irrigation - has already led to the creation of management bodies and the consolidation of user organisations, which have assumed some of the services associated with effective water governance. The cases of user cooperatives in countries like Ecuador and Argentina are also well known.

Their existence seems to indicate that the water sector has the potential, derived from its own need for management and the vital nature of its services, of generating its own system of governance, even within con-

<sup>24</sup> Speech by Daniel Magraw, Centre for International Environmental Law, Johannesburg, September 3, 2002 and New York Times, op.cit. 24/

### III. GOVERNANCE OF THE WATER SECTOR: KEY ISSUES

#### 1. The nature of water resources, their allocation and the role of the state

In Latin America, the issue of the nature of water rights, the factors that affect them, and the creation of water markets has led to significant controversy, which in turn has affected the governance of the water sector. The most significant issues are presented in more detail below:

##### a) The nature of water and property rights: water rights

Water is no ordinary good. Water resources embody particular characteristics related to their multiple environmental, economic, and social functions. These include, among others, characteristics of a public good together with productive functions, in which it is common to find significant externalities at the river basin level: incomplete information and uncertainty; social and environmental inequities and injustices; as well as imperfect markets and vulnerability to monopoly control.<sup>1</sup>

These characteristics have produced systems of water rights that strive to achieve a balance between the different demands and requirements arising from the many environmental values, and the unique physical, chemical and biological attributes of water resources. For this reason, every country in the world delegates at least some functions of water management to the State. Water is in the public domain, the State researches and surveys water resources and takes an active role in water allocation and the monitoring of its use.

1 See: Bonnie Colby-Saliba and David Bush, "Water Markets in Theory and Practice: Market Transfers, Water Values and Public Policy", *Studies in Water Policy and Management* (No 12, Westview Press, Boulder, 1987).

While in most countries water is in the public domain, water use rights granted to private individuals or corporations are protected under constitutionally guarantee as property rights, since a system of stable water rights is an incentive to investment in the development and conservation of water resources. Furthermore, the stability and security of water rights and the uses arising from them acknowledge the presence of existing economic activities and prevent social conflict.<sup>2</sup> The actual form that this balancing act between the public domain and the necessary security of water rights takes may become an element that affects the effective governance of the sector.

##### b) Conditions in the granting of water rights

The importance of water rights as private property is linked to the availability of the resource: the scarcer the resource, the greater its value. Therefore the majority of water laws contain provisions that require water rights to be used effectively in their creation, generation, maintenance or preservation.

The rationale behind this principle has been defined with precision and clarity by the authorities, judges and legislation of the United States of America. A typical declaration of the regulations relating to beneficial use is: "beneficial use is the basis, the measure and the limitation of all water rights in this state ... consistent with the public interest in optimum water use".<sup>3</sup> A common concept was that water rights should only be given according to the amount of water needed, as the main concern was the possibility of "awarding an absolute monopoly to just one individual".<sup>4</sup>

The way in which these conditions are incorporated has far-reaching consequences for the effective governance of water resources. In fact, there are numerous examples in the economic literature<sup>5</sup> of monopolisation through the creation of entry barriers resulting from the control of essential production inputs and natural resources. The existence of water markets does not improve the situation, as, in fact, "crucial inputs of this type are not usually traded in competitive markets".<sup>6</sup>

2 Syllabus and Opinions (United States Supreme Court 1984, No 80); "La Pampa vs. Mendoza" (Argentinean Supreme Court 1987, L-195-XVIII); Françoise Conac "Land and Water Rights Issues in Irrigated Schemes in Sub-Saharan Africa: Conflicts to be Avoided", *DVWK Bulletin* (No. 16, Paul Parcy Verlag, Hamburg, Berlin, 1989); Beck (Vol. 1, 1991) 366.

3 Beck, Robert E. Ed. *Water and Water Rights*. Vols. 1-3. Charlottesville: The Michie Company, 1991. (Vol. 2, 1991) 106.

4 *Ibid.*, 107-108.

5 Lawrence Anthony, Sullivan, *Antitrust* (St. Paul, West Publishing Co., 1977) 25, 31, 77.

6 Mark Armstrong et al, *Regulatory Reform: Economic Analysis and British Experience* (Boston, MIT Press, 1994) 117; and Oman '90.

Furthermore, for large-scale institutional water users, the incentives for selling water rights, where there is no penalty of expiry due to non-use, are minimal compared with the strategic advantage of controlling a key production input in the context of free market power policies in corporate practice.

The Chilean experience of the emission of unconditioned water rights appears to support the underlying rationale of effective and beneficial use requirements, as it has produced negative effects on both water markets and efficient water allocation.<sup>7</sup> It is interesting to note that, since August 1998, legal and administrative authorities at different levels have made various decisions on these characteristics of the Chilean water rights system. In these decisions, the Constitutional Court has acknowledged the State's right to regulate the conditions that apply to the granting of water rights (Rol 60/1997), and the Anti-Monopoly Commission has recommended that no further water rights be allocated within the hydroelectric sector until the water law has been modified to include provisions that guarantee effective water use (CPC 992/636; CR 480/97).

### c) Water markets

If water allocation is important, even more fundamental is re-allocation as resources become scarcer in relation to demand. As the source becomes depleted, the original allocation can only be modified by transferring rights to other users or uses. In order to satisfy increasing demands, countries have to decide whether to use administrative mechanisms or water markets to achieve water re-allocation.

The choice between these alternatives has been the cause of numerous debates in the region. While acknowledging the importance of appropriate water management, the debate reflects, on the one hand, the poor performance of a conventional response (administrative re-allocation) and, on the other, the difficulty of implementing a different alternative (water markets), which, on occasion, produces a profound contradiction to traditional practices and ideas.

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7 See Carl Bauer, *Against the Current: Privatization, Markets, and the State in Water Rights, Chile, 1979-1993* (Berkeley, 1995) p.2: "Private bargaining and exchange cannot coordinate overlapping resources without continued State intervention, through the courts, if not through other political organs"; p. 57: "These features [of the law] stimulate speculation...they have been favoured [by supporters of the law] saying that speculation improves market operations and price signals...they deny criticisms that speculation might distort prices through unequal bargaining power or monopoly control..."; p.171: "The government virtually guaranteed the under-valuation of water rights [resulting in relatively few transactions] when it privatized them without imposing any taxes, fees, or other obligations to the public interest".

It is beyond the scope of this report to enter into a detailed discussion of this issue; nevertheless, it is important to comment briefly on how water markets are created:

- It is necessary to have an institutional and legal system that is compatible with a market economy (guaranteed rights, infrastructure, transferability of rights, registers of rights, etc.) as well as with the nature of the water resource. The economic and cultural context must also be appropriate for the development of a market economy.
- The sustainable and efficient functioning of water markets depends on the institutional framework established by the State. Important lessons can be learned from the regulations applied in the western United States, where markets arose spontaneously at first and then were adjusted on the basis of experience. A market without regulations to guarantee sustainable water supply, protection against impacts on third parties and the environment, and to prevent monopoly control, is a mechanism that leads to uncontested appropriation rather than an instrument of government.
- Experience has shown that the following rules are important for the adequate functioning of a water market: a) water must be put to beneficial use and continue to be used beneficially after re-allocation; b) re-allocation should not affect other users and must be in the public interest; c) in many jurisdictions, the transfer of water from one river basin to another, or to outside the source area, can only occur with due consideration of local interests.<sup>8</sup>

It is important to point out that there are countries in which the water management system is considered insufficiently mature for the implementation of water markets. In these cases, emphasis has been placed instead on the implementation and improvement of appropriate systems for the allocation of rights.<sup>9</sup>

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## 2. The hierarchical relationship and the institutional structure

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The institutional structure for water resource policy-making, its allocation, management and monitoring, plays an important role in the implementation of

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8 Ibid.

9 According to comments by the Brazilian delegation in Samtac, Buenos Aires Meeting, January 22-24, 2003.

sustainable water resource development and, in general, in the effective governance of the sector. The strategies adopted by Latin American countries differ widely, as do the results achieved.

If these functions are conferred upon institutions with functional responsibilities for specific uses or specific economic activities, water planning and management is unlikely to be objective. In such cases, each interest group will tend towards supporting water projects or allocations according to their functional interests without considering the source of supply, the security of the investment or the economic basis of the project. On the other hand, the technical specifications and

### *The most interesting experiences in the region in the last decades have been those of Mexico, Brazil, Colombia and Chile*

the environmental and social functions of water make it inappropriate to place water management within the remit of purely economic ministries or even environmental ministries or institutions, as in either case there is the risk of overlooking relevant considerations.

In order to avoid such problems, many jurisdictions assign responsibilities for policy formulation, water allocation, and program and project evaluation to a ministry or agency that does not have responsibilities for the use of the resource. In Latin America, when water administration has been separated from sector ministries, this has often been a matter of dispute within the government itself. The most frequent solution to this issue has been linking water management to environment and ministries of natural resources or public works.

The most interesting experiences in the region over the last few decades have been in Mexico, where water resources are managed by the National Water Commission (Comisión Nacional de Aguas); and in Brazil, which recently set up the National Water Agency (Agência Nacional de Aguas) with the principal objective of overcoming traditional conflicts and limitations imposed by a system in which, until now, water had been under the charge of functional ministries. Other examples of non-user organizations, or at least of those that are not linked to specific water sectors, are the Ministries of Natural Resources in Colombia and Venezuela, and the Water Directorate (Dirección General de Aguas) in Chile.

In a recent World Bank publication the need to separate water's policy-making, planning, and regulation functions from operational functions at every level of government is also underlined. Thus, the Bank agrees with the US National Water Board which, back in 1972,

recommended that "policy planning and sector planning ought to be separated from functional, design and construction planning and operation on behalf of executing agencies".<sup>10</sup> This functional separation is fairly uncommon in Latin America, yet its application in practice has proved successful. One case has been Chile, which since 1969 has maintained a clear differentiation between these different roles of the State in water management. This has enabled it to prevent distortions in the regulatory function while generating clear indications to the different agents - in both the public and the private sectors - regarding the relative scarcity of the water resource.

Other important characteristics that are considered essential for a water authority, if it is to provide adequate governance to the sector, are that the authority should have a sufficiently high position within the government hierarchy for it to be able to consolidate the multiple responsibilities related to water management, that it enjoy real administrative capacity, and that it be effectively autonomous.

Another relevant consideration is that, given the technical complexity of water issues, a number of countries respect the administrative criterion that issues that require specific professional knowledge: "...finding of fact must be determined in the first instance by the officers charged with the administration of the stream..... The finding of fact thus made is final unless it appears that it was unreasonable or arbitrarily made."<sup>11</sup>

However, some countries, such as Chile, have decided to limit the administrative role of the State in water management. It is argued that, as a result, many water conflicts have ended up in the higher law courts, whose rulings have been quite erratic, precisely due to their lack of the specific technical knowledge.<sup>12</sup> At least one document suggests that the administrative jurisdiction in Chile should have greater powers, akin to those in Mendoza, Argentina.<sup>13</sup> In California, it has been suggested that the increased effectiveness and neutrality of the supervising institutions is one of the conditions that leads to the formation of water markets.<sup>14</sup>

10 Water Resources Management (The World Bank, Washington, D.C., 1993) 45; also see PB-211921 Water Resources Planning (National Water Commission, Springfield, June 1972) 46.

11 Supreme Court of Nebraska, "Water Law, Resource Use and Environmental Protection" as cited by Frank Trelease (West Publishing Corporation, Minneapolis, 1974) 97.

12 Carl Bauer, Water Markets and the Principles of Dublin (Berkeley, September 1996).

13 John Briscoe, "Water Resources Management in Chile: Lessons from a World Bank Study Tour", Working Paper (The World Bank, January 1996) 9.

14 Haddad, 390-91

### 3. Economic rationality and social demand

In countries similar to those of Latin America, it is common to find tensions between the expectations of the population of improving their quality of life and economic limitations. This tension has repercussions on the decision-making process and results in controversy over the application of certain economic criteria and, on occasion, in serious difficulties regarding effective governance of the sector and the maintenance of social order. These tensions are clearly illustrated with respect to drinking water and sanitation services, in the development of irrigation, and in the treatment given to water allocation under scarcity.

#### a) Drinking water supply and sewerage

Many countries face a critical problem in this area, reflected in the chronic under-funding of services, low service penetration in poor areas, and an increasingly expensive supply. In such cases, tariffs are restricted by the absence of a capacity to pay, which in turn leads to inefficient management. Additionally, when there are subsidies, these are geared towards the supply side, leading to cross-subsidies, with negative consequences for efficiency, fairness and competition. All these elements make up a vicious cycle that pushes towards low service quality.

Some countries, like Chile, have successfully implemented subsidies geared towards demand, focused on the poor, yet in many countries this would be difficult to implement due to the debilities of the State itself. Among these debilities is the lack of administrative and supervisory capacity for an appropriate monitoring of the use of such subsidies. The cases of the social conflict in Cochabamba, Bolivia, and the failure in Buenos Aires, Argentina to consider the issue of service for the poor, illustrate this issue.

#### b) State support for irrigated agriculture

From the social and productive point of view, irrigation allows for a substantial increase in agricultural employment and significantly increases its competitiveness. In consequence, in general, the agricultural sector lobbies for state investment in irrigation development. However, in most cases, ex-post evaluation of the results of investments in the sector show few gains in productive efficiency and even social inequity. Furthermore, the agricultural sector faces international trade influenced by a generalized distortion due to the subsidies assigned in more developed countries.<sup>15</sup> Under these conditions,

15 Corn produced in the United States is sold in the international markets at 20% of the production cost. Tina Rosemberg, "The Trade Fix", New York Times, Sunday Magazine, August 18, 2002

government-supported irrigation policies can end up being questioned, especially with regard to matters such as competition for financial resources with other activities that may have greater social returns, the recovery of the investment through payments by farmers, subsidies for the poor, and monitoring to ensure effective project completion in accord with the original conception.

#### c) Water resource allocation

The allocation of water resources in areas of water scarcity generates tensions between social interests (domestic and agricultural use) and economic benefits (mining, industry, hydroelectricity), which often cannot be easily resolved. In some systems, this conflict is solved by declaring drinking water and sanitation to be a priority, sacrificing to a certain degree the search for an allocation system that may incorporate economic criteria. Moreover, defining priorities fails to provide a clear signal of the degree of scarcity and favours inefficiency in the privileged activity. On the other hand, public opinion often finds little justification for market competition for the use of water resources. This is particularly true where there are no mechanisms for protecting traditional or indigenous water use, or, when they are present, these mechanisms, due to technical or legal reasons, lack credibility in the view of those involved. It ought to be noted, however that, from a technical point of view, it can often be extremely complex to determine the secondary effects of new extractions. Cases related to groundwater exploitation in northern Chile are typical examples of this problem.

### 4. The Role of the state and the regulation of services associated with water

The region has privatised a significant number of drinking water and sanitation services. The privatisation process has been in response to various financial and philosophical motivations, and has been carried out since the mid-eighties at a different pace, breadth, and depth in each country. It is generally accepted that, due to the importance of drinking water and sanitation services, their monopoly characteristics, the disparity between consumers and suppliers, and their many environmental impacts, they require regulation in terms of prices, conditions, and quality of supply, and environmental impacts. It is also accepted that regulation ought to be carried out by independent and stable regulators.

The situation after privatisation has, however, been cause for some concern: regulation frameworks defined by predominant sector interest groups; user protection mechanisms that have not lived up to expectations; the limitations of theoretical economic

approaches; the controlling power of holdings and monopolies; and technical failures in some areas. Problems that are a source of general concern are: the vulnerability of regulators to institutional capture; ambiguity regarding their independence; the non-application of concepts such as reasonable income and returns; the monopolisation of essential infrastructure; the unilateral control of some resources that constitute key supplies; and others, such as price transfers and the lack of information or accounting practices that allow for the monitoring and following-up of the companies supplying service.

Also to be noted are the facts that competitive market notions applicable to more dynamic activities are being applied to the water sector, that coverage for the low income population has not significantly improved, and that the budgets envisioned have not adequately taken into account considerations of scale and efficiency, information delivery, and a subsidy structure for the poorest segment of the population. Problems have also been encountered regarding contractual opportunism, postponement of investments, and failure to take heed of environmental interests. Fundamentally, the pre-occupation with ensuring stable levels of company income has led to the award of warranties and a stability that may eventually fail to motivate company efficiency, going as far as disassociating company performance from that of the rest of the economy, turning them into a regression vector. All of this occurs within rigid contractual and legal frameworks.

The differences between the rigid approach employed in the region, where profits are specified, and the pragmatic, empirical approach, based on rationality and balance, as used in the system in the United States, is notable.<sup>16 17</sup>

One of the best examples available of this type of approach is that employed in the decision by Judge Holmes, using prudence and fairness, " between

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16 Rogers Peter, "Water Governance", Draft prepared for the Interamerican Development Bank, February 4, 2002, p.4. "North American experience and Anglo-Saxon pragmatism indicate that empirical reasoning will be used when solving water governance problems" and "experimenting with using a timeline on rights has led the United States to flexible approaches in matters of governance". "This approach allows for adjustments when economic and social conditions change as it does not aspire to develop all embracing institutions covering all possibilities".

17 Phillips, Charles, Jr. "The Regulation of Public Utilities" PUR, 1993, p.181, Arlington VA. USA, quoting Troxell, "Economics of Public Utilities", 224 "the concept of reasonable returns as used by the Supreme Court is in fact a notion relating to zones of reasonability. Confiscation is the lower limit. User exploitation is the upper limit. If profits are to be reasonable, it ought to fall in between these limits. Clearly, the required profits cannot be represented by a specific sum, nor defined by a certain formula. They will vary in accordance to the economic conditions of both the company and the economy itself."

Scylla and Charibdis", where he states: "If on the one hand a franchise means that the highest possible profit that can be obtained free from competition is protected by the constitutional guarantee to property, then the power to regulate is zero. If, on the other hand, the power to regulate totally eliminates the protection of property, then this is non-existent. This isn't economic theory but merely a fair interpretation of a deal. None of the extreme interpretations could have been consented to. A mid point between the two ought to be established".<sup>18</sup>

This type of reasoning has deep structural implications for the interpretation of rights and conflict solving. It provides long-term stability and trust. It contributes towards sound social structure creating an effective constitutional characteristic of social sharing both in good and bad times. A perception by society of fair sharing is important for governance, preventing social frustration and social inequity. Public and private associations can thus share out both the costs and the benefits.

The concept of stability referred to above goes beyond the fulfilment of a contract or the interpretation of a law. It means long term social stability even at the expense of having to create variables in the implementation of a contract or in the extension of a right. Bearing in mind that rationality must be preserved and that there would be no confiscation, it means that companies will not be forced to work at a loss. In certain cases, courts in the United States have decided that in order to determine when there are real losses, not only does the income of a concessionaire have to be verified, but also that of its associated companies that are linked to the main business<sup>19</sup> (the total effect criterion should include profits in related business lines, even those not regulated).

Unfortunately, the current situation in Latin America does not seem to grant this type of reasonable, pragmatic, understanding, and flexible approach to rights and contracts. To the contrary, current legislation relating to water, public utilities, and investment protection agreements emphasises unilateral and contractual security, even if the context of the prevailing conditions were to change. In this system, some argue, there is confiscation when someone has to accept lower than expected benefits even if profits are still in the blue. Thus, it is not unusual to find that public utility holders have guaranteed returns and special exchange and interest rates. This situation prevails despite distinguished World Bank specialists pointing out that this type of gua-

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18 Phillips Jr., 1993, p. 411, quoting Cedar Rapids Gas Light Co. vs. Cedar Rapids, 223 U.S. 665, 669 (1912).

19 Cases of Covington, 1896; Natural Gas, 1942; Andrus, 1979; Duquesne, 1989.

rantees may eliminate the benefits of privatisation as they suppress the incentives for selecting and managing programmes and projects in an efficient manner.<sup>20</sup>

These guarantees in turn become liabilities affecting national budgets. They also create two types of economic players: those having all manner of guarantees, whatever the fluctuations in the economy, and those, usually ordinary citizens, who do not have any. In times of crisis, these liabilities have negative effects on the systems where they operate. While the general economy stumbles and economic activity falls and the population suffers, public utility companies demand full and up-to-date payment. In contrast, in the United States, at the time of the depression, judges and the courts acknowledged the decline in the interest rate and in company profits throughout the country, and were inclined to accept lower returns in public utility services.<sup>21</sup>

This has led to issues related to public utilities currently occupying a prominent position in the public agenda debate in the region. The transformation process presently underway is setting new organisation modalities (production and institutional) and the coordination of activities that up until recently were directly controlled by the State through state companies.

The new ways of coordinating public utility service activities present two basic types of problems that need to be met in terms of regulatory schemes. Firstly, the rationale behind the decisions taken by the new and private operators (maximise benefit) may not necessarily coincide with general social ends that such basic activities as public utilities must necessarily answer to (requirements relating to coverage, quality and costs) (Phillips, 1993). Therefore, certain regulatory dispositions and mechanisms must be in place to impede the emergence of a significant gap between that rationale and those basic social needs.

Secondly, the majority of public utility activities do not have the appropriate characteristics for competitive market mechanisms to operate. In these kinds of activities the operational range of the market must be increased through productive reorganisation and through institutional and regulatory mechanisms.

The quality, not only of the markets, but also that of the regulations, depends on the discrete context they are inserted in and on the attitudes and habits of the specific population, a fact often ignored in making recommendations with supposedly universal effects.<sup>22</sup>

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20 Thobani, Mateen, "Private Infrastructure, Public Risk", Finance and Development, March 1999.

21 Phillips, op. cit. p. 378, and cases cited therein.

22 Interview of Stiglitz, New York Times, 1999.

Although the region has received a significant amount of specially designed international consultant assistance on economic matters and ad hoc manuals on how to deal with various problems, there has been little information on operational interdisciplinary regulation, particularly on the domestic legal dynamics of regulating mature systems, these having been directly incorporated from the originating countries (England, USA, France).

For instance, in order to overcome the problems associated with the drinking water sector:

- The need was put forward for "political non-intervention" in the services through three interrelated instruments: a new Legal Framework that sets the guidelines for an appropriate separation of roles and the creation of independent regulatory bodies; a tariff policy and structure to guarantee the economic and financial sustainability of the service, and lastly, the incorporation of private operators to improve efficiency and to sufficiently separate service operation from the public functions of guidance, regulation, and control.
- [However,] despite the efforts made, the region continues to present a high level of service exclusion. Even more worrying still, the speed at which coverage problems are being overcome has been, during the last decade, inferior to the speed attained in previous periods, particularly during the 1960s, the period when Latin America made a quantitative jump, based on a marked preoccupation for improving the health conditions of the population.<sup>23</sup>

*The region has received little information with regards to regulatory aspects of countries with relevant experience*

Obviously, the problems associated with the regulation and supply of public services are present in drinking water services as well as in electricity and irrigation. It can be claimed that such problems, with individual differences, but also with common characteristics, occur in all mass consumer service supply systems where conditions for perfect competition do not exist.

For instance, in electricity generation, the defective design of a water rights allocation system may lead to a concentration of rights in a few companies, facilitating their market power and creating barriers to market entry and hindering fair competition.<sup>24</sup>

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23 Corrales, María Elena, op. cit. And pages Note 3, supra.

24 In Chile, the Antimonopoly Commission has recommended that no other water right may be allocated for hydroelectric power generation until stipulations to guarantee effective water use are included in the Water Law (CPC 992/636; CR 480/97).

Irrigation and drainage services, when supplied by private companies, are subject to regulation as if they were public utilities. There are few examples of private companies supplying these services and those few that there are, basically in the United States (Carey Act and Carrier Ditch Companies), show they have had serious problems, including incapacity to finance works, overestimation of available water resources, engineering errors, and cost underestimation<sup>25</sup>. In any case, the regulation of these services includes the right of the user to service continuity, to an equitable allocation of water, and to the regulation of tariffs by a regulatory commission. Such regulation is a logical response to the monopolist position of the supplier.<sup>26</sup>

State regulation and control are applied even in the case of state companies, such as Bas-Languedoc, France, where rates are approved by the National Government, which also designates a Commissioner with veto rights.<sup>27</sup>

The unequal power between irrigation operators and users makes it necessary for their decisions, accountability, expenses, and programmes to be subject to careful regulation, even if they are non-profit user organisations. The case of Maule, in Chile, is illustrative of this, as abuses in water distribution by the user organisation required the intervention of the Water Directorate.

## **5. The issue of the appropriate level of government: national - provincial - municipal**

Which administrative level is best suited for managing water and its services is a particularly complex and conflictive matter, given that the resource is not limited either by administrative or by institutional boundaries and, as a service, is subject to economies of scale and scope. Water also has a direct impact on commercial activities, on transport, and on services, such as electricity generation, which are managed at a national scale. Problems become more complicated still in federal countries, in those that have chosen to locate water

25 John Davidson, "Distribution and Storage Organizations", in *Water and Water Rights*, Robert E. Beck, Editor in Chief, 1991 Edition, The Michie Company, Charlottesville, Va., Vol. 3, p.493

26 Davidson, op. cit. p. 495-500

27 United Nations, "Abstractions and Use of Water", 1972, p. 109.

supply services at the municipal level, and in unitary countries with marked regional differences.

Relationships between centralisation and decentralisation of activities appear to show that, rather than a problem of radical alternatives, it is more importantly a question of structuring balanced systems, where legal and political powers are assigned to the appropriate level of government and where the roles of the private and public sectors, at the various levels, are complementary. A study in Colombia, made by ECLAC for the Interamerican Development Bank, found that implementing decentralisation without first conducting a thorough activity analysis led to the loss of economies of scale, and that assigning responsibilities to local organisations lacking technical training and subjecting basin authorities to political pressures are not conducive to sound resource management.<sup>28</sup>

Some countries have tried to solve the problems arising from different jurisdictions by nationalising water and its administration, yet this often leads to the inconvenience of excessive centralisation.

In federal countries the practice has been to declare certain water uses to be under national jurisdiction, such as international and inter-provincial navigation, certain products, such perhaps as electricity, and certain public interests, such as pollution control and some ecological concerns. Inter-jurisdictional and basin organisation agreements have also been tried.<sup>29</sup> In this context Brazil has stressed the importance of "Basin Committees", as appropriate management institutions.

Curiously, basin organisations have been employed in unitary countries for ensuring better local participation. This proves that appropriate institutional arrangements are a function of the nature of the resource more than of the political or organisational philosophy of a particular country.

It is noteworthy that the most successful country in the region in the field of drinking water supply and sanitation, Chile, has adopted its own model, capitalising on economies of scale and scope in order to extend services efficiently on the basis of regional companies, each of which serves an extensive area. Meanwhile, countries that have adopted models on a fragmented political base at the municipal level show serious diffi-

28 Solanes Miguel and David Getches, "Practicas Recomendables para la Elaboración de Leyes y Regulaciones Relacionadas con el Recurso Hídrico (Recommended Practices for Elaborating Laws and Regulations Related with Water Resources)", published by the Interamerican Development Bank as their Good Practices Report, in 1998. Includes an analysis of water legislation principles of Brazil, Chile, Colombia, Costa Rica, El Salvador, United States, Jamaica and Mexico

29 Water Governance: Position of Brazilian Technicians on the Basic Paper by Peña and Solanes, Buenos Aires, January 23rd, 2003.



culties, with rich and poor municipalities and non-functional subsidy schemes. On the other hand, the presence of larger units prevents excessive operational fragmentation that would make regulation activities inefficient.<sup>30</sup>

## 6. Public participation

An important characteristic of some arid and semi-arid areas is the participation of users, either in field activities or in the integration and consultation with administrative and political institutions. Well-known examples in South America include Chile and Mendoza and San Juan provinces in Argentina. The Spanish inheritance influencing these systems since colonial times is also common knowledge among specialists in the institutional aspects of water management. It is argued that participation produces a sense of community between the administration and the users, lowers central administration costs, and ensures that the interests of users are taken into consideration.

However, case studies and interviews seem to indicate there is still a long way to go in ensuring the access of users and the public to the water decision-making process.

There are numerous deficiencies in participation: i) limiting social conditions; ii) limited definition of the areas in which the public and users participate; iii) provision of deficient and inopportune information to the public; iv) lack of identification of alternative mechanisms and decision-making capacity when participation does not reach convenient decisions, both in substance and in timing; v) capture of user organisations by groups or sectors for their own private benefit; vi) deficient state control; vii) a lack of awareness on the part of those who would delegate all water management responsibilities to these entities of the fact that these institutions reflect the interests of active members; viii) failure to realise that it is not just rights holders and water users who have a legitimate interest in the resource, for example, water as part of the environment.

From a sociological point of view, in certain areas privileged user groups have a dominant position, have a higher educational level, are better organised and are more powerful in collective negotiations aimed at, for example, keeping water rates low. These have more influence than poorer peasants. In contrast, the poorer

30 Corrales, op.cit.

users have to follow the rules of political clientelism.<sup>31</sup>

An example illustrating why participation lags behind is that the interests and concerns of the local population have not been a priority issue when planning water use. Indifference towards traditional rights has been identified as one of the main causes of the conflict linked to failed development efforts in some parts of the world. Concern has also been expressed at the disregard of social values and interests linked to water.<sup>32</sup>

Users and others interested in the resource may participate in public hearings or consultations aimed at analysing policies, programmes, projects, or legislation. Although the mechanism is mostly aimed at opening up space for participation, its mere creation does not mean all interested parties will participate, the only means of assuring a balance of interests and more rational decision-making.<sup>33</sup>

Because of this, governments should stimulate and facilitate the participation of interested parties, providing access to information, authority to act in meetings, and, in general, provide the possibility of expressing opinions and positions.<sup>34</sup> This need was confirmed by a recent South African experience: in a public hearing on upcoming water legislation, where industry gave detailed answers and several organisations and individuals also answered in a positive manner. However, no observations were forthcoming from community organisations, rural communities, or from village water committees. Non-governmental organisations made very few comments.

A good example of creating participation opportunities is United States environmental jurisprudence, where the area where citizens can legally appeal decisions has been broadened, giving greater flexibility for initiating group or individual action, on the basis of interests that are different from traditional personal economic interests.

31 Kemper, K.E. "The Cost of Free Water: Water Resources Allocation and Use in the Curu Valley, Ceará, Northeast Brazil", 1996, Linkoping Studies in Arts and Science, No 137, Linkoping, Sweden, p. 193-200 and Hearne FF and others, "Water Allocations and Water Markets: an analysis of gains from trade" Technical Paper No 315, World Bank, Washington DC.

32 Barraqué B. Water Management in Europe: beyond the privatization debate, Flows and Stocks of Fixed Capital, No 7, Paris, OCDE, march, 1992; also Integrated Water Resources Management in China: the scope for change, Nanking International Symposium, 22-25 April 1997.

33 Barraque, 1992, p. 9; Mitchel B. (ed) Integrated Water Resources Management, International Experiences and Perspectives, London, Behaven Press.

34 Haddad, Brent Michael "Evaluating the Market Niche. Why Long Term rural to urban interregional markets for water have not formed in California", Berkeley, California, University of California, 1996, p.392.

Participation is affected when there are no judicial frameworks allowing for public action. The existence of these frameworks is, in turn, affected by the different possibilities of access to those who make political decisions, and by the lobbying capacity of pressure groups with different special interests. Although some countries have established environmental norms and mechanisms for public participation with respect to environmental impact, the regulations covering economic evaluation and the economic limitation of projects are such that recourse by the public or third parties is scarce or non-existent.

Members of the public cannot question even the most deficient projects on economic grounds. Therefore, in most countries, public participation is restricted by two factors: the lack of real and obligatory rules for assessing the economic efficiency of public investment; and, in consequence, the existence of rigid regulations that only give active and substantial legitimacy to acting in defence of traditional individual economic rights.

A project, focusing on Latin America, executed by Consumers International and funded by the Overseas Development Administration of the United Kingdom, starts from the premise that consumer interests are not well represented in the procedures that regulate water utility services in Latin America. This is due to institutional barriers as well as to the lack of information and technical know-how among consumer organisations. In fact, comparing participatory practices in privatised public utility services in Latin America with those in other countries makes depressing reading, especially the requirements to inform, and the means of intervention. In the years since the privatisation of the Buenos Aires utility, there has been only one very short public meeting, with severely limited information.

The relevance of adequately and opportunely informing the public cannot be strongly enough emphasised. There have been cases in the region, where public opinion has manifested itself as in favour of projects with negative rates of return. However, the opinion surveys failed to mention these negative returns and the questions put forward were vague about sources of financing, rates of return, and as to who would benefit.

The focus on community organisation and participation foresees new participation strategies. During the last decade the Local Agenda 21 process has proved to be an effective approach for solving concrete problems facing communities.

The community (residents, users, public and private institutions, and local businesses) is invited through this mechanism to generate consensus on the basis of a shared vision of a desired future for a community in a given geographical area. (There are many examples and

its effectiveness has been registered, International Council for Local Environmental Initiatives, 2002, Rio+10).

The principle behind this community participation initiative is the search for a balance between various development interests: private business, the environment, and the community. The creation of a public and collective conscience based on shared values regarding issues of interest such as the supply of services, environmental protection and, in particular, water resource management, then becomes an instrument for promoting development.

## 7. The environmental dilemma

As has been mentioned above, environmental issues have acquired growing significance in the region in the last few years and they frequently give rise to highly controversial situations reflecting the lack of social consensus.

The problems discussed are in relation to the maintenance of environmental use, the pollution of rivers, lakes and aquifers, and the building of large-scale hydraulic works.

### a) Protection of environmental uses

The safeguarding of environmental use when facing excessive exploitation of water resources for other ends causes conflicts in arid and semi arid areas, as the matter attains important economic significance. This becomes even more serious when dealing with situations which have been consolidated over a long-term period of use, especially when the technical difficulties and the uncertainty associated with defining levels of ecosystem protection are added.

### b) Control of Water Pollution

The region has a major deficit in water pollution control and overcoming it implies effective implementation of institutional arrangements geared towards control and the diversion of significant financial resources, which may have alternative, competing, destinations, such as social or productive investments. Although there is a growing awareness of the need to correct the existing situation, it is difficult to identify an appropriate and publicly acceptable funding mechanism. This is very

evident in the case of pollution from urban sewage, when the difficulties of establishing funded water supply systems are considered. A similar situation exists in the case of industrial pollution, especially by small or medium-sized industries with low levels of technological development. Other concerns reflecting the difficulties in building effective governance on this matter refer to administrative limitations for dealing with matters such as control and supervision of clandestine dumps, especially into aquifers, and in controlling diffuse contamination.

### c) Building of major hydroelectric works

Environmental impact assessment systems for new projects have been implemented in the last few years in Latin America, under varying modalities. Major hydroelectric projects often prove to be highly conflictive and generate public interest beyond national boundaries. Also, the systems established do not always have a high enough level of credibility in public opinion, nor are the true interests of the community always adequately represented, and opposition to the project can easily turn into long term legal battles with unpredictable results. In some countries this situation has become a disincentive to private investment in such projects. From the perspective of the development of natural resources, this situation is not irrelevant, when it is kept in mind that only a fraction of regional water resources are currently developed, particularly for electricity generation.

## 8. Protection of the interests of ethnic groups and customary users

In a number of areas in the region, serious conflicts occur between indigenous and traditional users and economic activities, such as mining and irrigation. There are also cases where the extraction of groundwater for supplying cities affects traditional uses and ecosystems. Some countries, to a lesser or greater extent, have created systems for protecting indigenous rights, either totally or partially. In Brazil, the Constitution of 1988 and law 6001/73 contain norms for this purpose. In Chile, law 19253 protects the customary rights of northern ethnic groups. In Colombia, the Constitution and law 21/1991 acknowledge rights over traditionally occupied land and resources.

However, not all countries in the region have elaborated careful and clear definitions of the rights and obligations of interested parties and the government, nor do they have contingency plans for the defence of ethnic and customary users. The results are poorly defined and ambiguous situations creating legal uncertainty and insecurity, which do not translate into an effective res-

pect for protected rights. The problem is aggravated by the incapacity or unwillingness or lack of means of many groups to appeal to ordinary legislation in order to protect or consolidate their rights. There are significant differences in the manner in which rights of the native population are regulated in Latin America and in the United States. In the latter country judicial decisions have established a very high priority to native Indian rights that the law respects and enforces.

The weaknesses in the system for the protection of uses affect both extractive and in-situ uses related to the natural water regime. The latter include fishing, watering holes, or even the use of water meadows. The most frequent situation is the destruction of traditional habitats for the sake of assigning rights for mining, water supply to cities, and energy generation. The customary uses destroyed are not considered in project evaluations, let alone compensated for.

Part of the problem is that legislation generally does not recognise non-extractive customary uses, such as fishing activities in lakes. There are examples in the region where irrigation developments, with the award of formal titles to the water, have led to the destruction of customary fisheries with negative effects on the subsistence and the economy of significant population groups.<sup>35</sup>

There is also a need to define an operational strategy for the acknowledgement of indigenous and customary rights. Customary rights and the acknowledgement of customary rights and practices are not one and the same. It is not enough to simply recognise a structure of customary rights. The specific rights that emanate from the structure must also be recognised, or compensated, and this requires surveying and registering activities by the State.

The problem arising from an imprecise definition of protected rights is aggravated when foreign investment protection agreements are signed, where customary uses have not been acknowledged under any specific legislation nor protected by being acknowledged or registered in ordinary legislation. In these cases an investor may well argue that it is unreasonable to consider the existence of these uses and rights, given that they have no legally recognised expression.

<sup>35</sup> The case of Laguna Vera in Paraguay, for example.

## 9. Conflict resolution

Given that water is a free-flowing resource, with a wide range of uses and functions, increasingly scarce, and presenting abundant externalities at the basin level, its potential for generating conflict is unlimited. The conflict potential of the resource is aggravated when countries and the international community do not foresee appropriate regulations, both in form and in substance and in the awarding of arbitration capacity to a specific body. Prolonged conflict delays and discourages investments and harms conservation. As conflicts can involve anyone from private individuals to municipalities, provinces or States, institutions, sectors and nations, the problem is extremely significant. In such a situation, the lack of an efficient and opportune conflict-solving mechanism becomes critical for the governance of the sector.

Therefore, a poor administrative capacity for problem solving is a serious practical limitation. Without a third party arbitrator, the parties in a conflict that benefit from the status quo have no incentive for reaching a negotiated solution, benefiting as they do from a situation another objects to. This situation, clearly seen in Chilean legislation, contrasts notably with water administration powers in other countries, such as in the USA or in Mendoza, Argentina, where the administration has a decision-making capacity. This authority has not been arbitrary, because of the quality of the administration and because of the existence of appropriate constitutional and procedural guarantees.

There is a tendency to replace the obligatory jurisdiction of the State with that of arbitration tribunals. There are, however, certain doubts regarding the performance of these tribunals when dealing with matters of public interest.<sup>36</sup>

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36 There are sources (see, for example, the article "Nafta's powerful little secret" by Anthony DePalma in *The New York Times* of March 11, 2001) which mention that these tribunals have led to revocation of national laws and the bringing into question of justice systems and environmental laws. Some have argued that some of their worst fears regarding faceless government have been confirmed within the Nafta framework. Environmentalists, consumers groups, and other organizations are very worried about the way in which these tribunals influence the application of the law. Thus, as argues Joan Claybrook, president of Public Citizen, "what we are talking about here is secret government". According to Andreas Lowenfeld, an expert in international trade in the New York University School of Law: "There is no doubt that the measures referred to constitute an expansion of the rights of the private company in relation to the government. ... The questions is, is this a good thing?" According to Martin Wagner, director of international programmes in Earth Justice Legal Defence Fund: "The fact that Nafta treaty writers chose a non-open procedure ... is more evidence that they were not anticipating these panels to have before them matters of a wide-ranging social interest." Critics of the system assert that each challenge of these institutions erodes public policy. The lack of a traditional appeals system, transparency, and legally obligatory precedent has meant that, at least for the three nations belonging to Nafta, many people are cautious and guarded regarding this conflict solving method.

Stating that it is necessary to have a jurisdiction that makes a decision obligatory, therefore providing an incentive for negotiation, does not mean to say that it need be exclusive. Provided there is an enforcing jurisdiction and that the part not benefited by the status quo is not left totally undefended, the legislation may be flexible towards, even promoting, alternative conflict solving mechanisms.

It is essential at all levels to have applicable conflict solving criteria and authorities responsible for its enforcement.

In many cases decision-making faculties are delegated to user organisations, administrative bodies, districts, and other constituencies. It is in the public interest to have guaranteed and effective user representation, especially of the weaker and minority sectors in any society. Also important is the right to defence and an appeal system, and access to avenues that ensure that no one is left undefended and that legal action does not become eternal.

## IV. IN SEARCH OF ANSWERS

### 1. The challenge posed by effective water governance: The lack of simple answers

As water is so closely linked to society and the environment, there are no simple or easy answers that guarantee governance. The only possible suggestion is that although governance may be expressed in different organisational systems and its formal content arranged differently (such as laws and institutional arrangements), every society has natural conditions, power groups, power structures, and requirements that must be considered specifically in the process of designing the system. Otherwise, there is a risk of ignoring factors necessary to ensure viability. The following considerations merit particular mention:

- The prevalent ethnic and cultural characteristics, as deeply rooted views of the world may prove decisive in applying certain management formats. In Chile, for example, the prerequisite of individual assignation of water rights has been waived for Aymará and Atacameña communities.
- The institutional history of the sector, considering that this history has generated practices used for generations in many communities and these frequently comprise an extremely valuable social capital for effective water governance.
- The economic framework, social and economic ideas and practices, the capacities of the different players involved and their socio-economic conditions. The creation of market incentives in the water sector cannot be the result of applying public policies divorced from the general development trend of the society.
- The management capacity of the State, as this may restrict the practical possibilities for efficient implementation of institutional arrangements.
- Climate characteristics, for example, the manner in which water is perceived is very different where it is a scarce resource compared to areas where it is in abundance. This kind of difference may require that even within a single country, different regions require different regimes.
- The characteristics of different water sectors and their services may be different even within one country. For example, while governance of water as a resource has experienced significant progress recently in Brazil, it

has become clear that the governance of water supply and sanitation services has been limited by the lack of an adequate management framework, ideological differences and other factors.<sup>1</sup>

It is also important to remember that globalisation affects governance in many ways. External agents and factors influence internal processes, more so now than ever before. These influences are numerous and examples have been given throughout this document. The most important consideration is to be aware of the phenomenon and to identify those external factors or conditions that may most seriously affect governance.

### 2. The challenge posed by effective water governance: Lessons and general consensus

Despite the comments in section 1 of this chapter, one must be aware, when the management of a resource or its services consistently shows certain characteristics, that this is not due to a lack of innovative capacity of the sector, but probably due to the nature of the resource or service involved. This is clear from the typical characteristics of the legislation governing water and its associated services.

In this respect, some considerations are tentatively presented that, in the light of practical experience, may be considered to be generally valid.

In water legislation:

- Water laws must clearly state that water is a good that falls under the public dominion of the state.
- Water laws must determine specifically that water use rights, when granted under conditions of, or which aim at, effective and beneficial use that does not cause environmental damage, are protected by private property clauses in the constitution. This is a basic legal element present in the systems that have successfully promoted private investment in the development of the water resource.
- However, and provided there is no functional curtailment of the economic value of the rights, the laws may allow for the exercise of these rights to be regulated as needed for ecological and social sustainability.
- Systems for water concessions and the regulations guiding their allocation should be uniform without exception, to prevent manipulation by special interest groups.

<sup>1</sup> According to comments by the Brazilian delegation in Samtac, Buenos Aires Meeting, January 22-24, 2003

- Water rights are assigned when there is enough available water flow, when third party rights and ecological requirements are not affected, and when, in accordance with the opinion of water administrators, the request is aligned within the public interest regarding water use.
- The only functional priorities affecting the allocation of rights when requested ought to be those for drinking water and sanitation purposes, when protection has been established for these purposes: this does not prevent the generation of clear signals regarding the scarce nature of existing water supplies, and it does not lead to inefficient use arising from this privilege. Such considerations should not affect the preservation of flows for ecological reasons. In cases of concurrent uses for other purposes, water authorities must carefully assess their merits and, if the uses are equivalent, then they must be allocated using relevant criteria, such as through a bidding process, order of application, or other relevant criteria.
- In the case of rights and uses that were in existence prior to the legislative change, including traditional and indigenous uses, they should be acknowledged in accordance with their effective and beneficial, traditional and current use, without this affecting the possibility of imposing appropriate regulations.
- There is a need for a planning authority to allow for the generation of a shared vision regarding the future evolution of water resources at the basin level.
- It is important to develop a public information system covering all elements affecting resource management, giving transparency to the actions affecting assets located within the public domain.
- The procedure for implementing these important considerations must ensure their continued effectiveness.

There are also some fundamental principles for the regulation of water and sanitation utility services. These include:

- Universal and non-discriminatory service.
- Adequate quantity and quality of service.
- Reasonable tariffs and profits. It is important to bear in mind that privatisation does not miraculously make unprofitable operations profitable.
- A subsidy system that avoids as far as practicable cross-subsidies in favour of the better off and that guarantees the poor a basic minimum supply.
- Control of changes in ownership, holdings and triangulations.
- The right to adequate and opportune information, both for the regulators and for users.
- Obligatory accounting, in accordance with obligatory rules.
- Use of basic installations.
- Rights to opportune and adequate inspection and participation.
- Maximum use of economics of scale and scope.

Regarding institutions for water management, consensus is being achieved at different levels:

- The authority responsible for water allocation and management should be independent from sector influences, with authority and resources in line with its responsibility.
- Inserting water management within environmental agencies may result in minimising its effect as a development factor.
- Therefore, it seems appropriate that the water resource have its own stable and independent institutions, even when these are closely linked to institutions responsible for the strategic vision of national development.
- Basin based institutions are valid options for water management, but their functions must be determined in such a way that they can be implemented and they must be focused on water resources, as demonstrated by the successful models in France and Spain. They must also have adequate authority and funding.
- User organisations are useful management structures; however, they cannot replace the State, as they have inherent limitations and must be subject to appropriate control.
- A conflict resolving system should exist which provides an appropriate balance among parties and defines the limits of the authority of the bureaucracy, the user groups, and the courts.
- There are decisions associated with water and its services that are directly linked to governance, because of the impact that they have on social stability. These considerations should be appropriately dealt with in trade and investment protection treaties.

Regulators of public water and sanitation services need a minimum set of attributes to function appropriately:

- The system to be regulated should be manageable. It is not realistic to assume that, for example, a thousand service providers can be regulated. Consolidation is necessary due to its advantages with respect to scale and control.
- The regulator must have independence and stability and be subject to rules of good conduct.
- The regulator must have the necessary powers and resources.
- The regulator must have appropriate legal capacity.

One limitation that administrative systems seem to share at every level is a notorious lack of operational capacity, due to various factors, including limited financial, human, and legal resources and, on occasions, arising from the low worth assigned to their role as regulators. This is the consequence of a poor understanding of the fact that the role of the administration, when there is an appropriate definition of

functions, extension, structure and control, is critical in managing a resource as complex as water. An appropriate definition of the administrative role is crucial to protect sustainable management, the community of users, and the general public from domination and control by special interests.

### 3. The process of building effective water governance and integrated water resources management

It is important to analyse the routes that may allow for progress in constructing the appropriate governance frameworks for the water sector. Latin American countries offer innumerable examples of frustrated reforms to the sector and of efforts which, once legally approved, have ended up dead letters, far removed from the purpose for which they had been approved in the first place (for example, in Chile the control of industrial pollution was made law 70 years before it could be made effective).

If the source of the reforms that have been attempted is analysed, it can be seen that frequently changes in the water sector are merely a reflection of changes initiated in other areas of the bureaucracy, which in turn have answered to changes in the ideological or economic paradigms of society. For example, in Chile, the social movements that gave rise to agrarian reform imposed a change in water legislation in 1969. Later, the transformation of society with the adoption of a neo-liberal perspective required once again a change in the water law, as exemplified in the legislation of 1981. In both cases the reforms which can be considered to be consolidated and effectively incorporated into water management are those that, divorced from ideology, have appropriately answered the nature of the problems posed by water resource management and have been in tune with conceptions and practices within the society.<sup>2</sup>

Similarly, since the 1990s, Peru has made several attempts at reform of its legislation with, in some cases, the draft reform legislation being based mainly on political, economical and financial considerations. These projects proposed the creation of non-regulated water markets, ignoring local conditions, traditional uses, and

2 Peña H. "20 años del Código de Aguas. Visión desde la Administración", Fourth Water Rights Symposium. Universidad Católica de Chile. Santiago, 2001

the nature of the resource itself. These proposals were stopped because of criticisms made by professional advisors - national, regional and from the United States.

Bolivia has made numerous attempts at reform during the last twenty years, without there being a water law to date. This is due to the difficulties of trying to reconcile the legitimate grievances of traditional users with a model for water resource management more closely linked to the aims of economic development.

There are, as well, reforms within the water sector arising from internal processes independent of the various existing decision-making powers in society. This route is generally slow and difficult, as it means breaking the characteristic limitations of the water sector and the reductionism prevalent in many decision-making spheres, making it especially difficult to engage them on water related issues.

An interesting example of this is found in Brazil, where water resources specialists managed, after many years, to get their legal and organisational proposals accepted at the political level in such a way that they reflected the consensus reached by the water professionals.

The importance of the Brazilian case lies in the fact that it is the result of a discussion fundamentally national in nature and so having solid bases for long-term consolidation. Something similar could be said of the process that led to the current drinking water and sanitation regulation framework in Chile. Here too, the catalyst was the specifically national experience of the sector in regulation, and the transformation process generated strong involvement of the government, the congress and public opinion.

Also worthy of note is the case of the current Mexican water law, which was the response of the most prestigious Mexican water professionals to changes in the role assigned to the State and to the introduction of the use of economic incentives for improved management.

### *Countries in Latin America can give numerous examples of frustrated water sector reforms*

The information presented demonstrates that it is not necessary to wait for a general improvement in the governance situation of a country in order to foster initiatives in the water sector. Thus, the regional association and interaction of motivated and aware professional groups may prove decisive in improving sector governance problems and in giving technical viability to proposals for change. Also fundamental is the dissemi-

nation and opening up of the debate to the public, the various interested parties, and a wide-range of decision-makers, so as to guide the search for effective solutions to existing problems. As long as a basic consensus is not reached or this consensus does not get through to the political world, there will be little hope for solid progress in the region. Hence the importance of discussions such as those being carried out under the auspices of the Mexican Government.

This illustrates the scope of the efforts made at the international level for promoting integrated water resource management.

In effect, as human society becomes ever more complex and the intensity of human impact on natural resources becomes more severe, the need to integrate the different elements of water management becomes imperative. In a simpler context, these elements are assumed by society in a fragmented manner without serious difficulty.

### *The successful processes of ANA in Brazil and fresh water in Chile arise from national consensus and reflexion*

A careful analysis of the contradictions arising from approaching water problems from the social point of view (characterised by its fragmentation into multiple entities and ways of acting) or from the natural world (as seen by the intrinsic unity of hydraulic processes) shows definite inefficiencies, lost opportunities for better solutions, and generalised conflicts in water management. In summary: loss of governance in the sector.

Water resources management often presents problems requiring a holistic approach. Among these the following are most significant: coordination of supply and demand policies, policies for the quality and quantity of water resources, the joint use of surface and ground waters, the multiple use of resources, coordinated management of land use, vegetation cover, and water, management of externalities, and environmental conservation policies, among many others.

In accordance with the above, the Global Water Partnership (GWP) has defined Integrated Water Resource Management (IWRM) as a process promoting coordinated management and development of water, land and related resources, aiming to maximise the resultant social and economic welfare equably, yet without compromising the sustainability of vital ecosystems.

According to this concept, Integrated Water Resource Management is not an end in itself. It is a means, or, more precisely, a "process", a way of appro-

aching dynamic water resources management, characterised by abandoning reductionism.

Its urgency depends on concrete situations, it being lesser in basins having a low level of water resource exploitation and low levels of human impact, and in all cases it assumes progressive development ("a process").

Summing up, it implies a mayor cultural change, reflecting a progression away from the industrial society, which is characterised by specialisation (reductionism), pyramidal structure (planning), and abundant resources, placing the emphasis on infrastructure, as is reflected to some extent in the Mar del Plata Declaration, and towards the Post Industrial Society (based on knowledge), characterised by integration (holistic), participation and negotiation, the awareness of limited resources, and placing the emphasis on management, as is reflected in the Dublin Declaration.

It is for these reasons that effective governance of the water sector will be more and more closely linked to Integrated Water Resource Management.



## V. ANNEXES

### 1. Description of the Dialogues organised in South America

At the beginning of 2002 the South American Technical Advisory Committee of the Global Water Partnership proposed the organisation, in each of the countries of the region, of national workshops. These would be based on wide-range of participants, including politicians, bureaucrats from all levels of government, user organisations, NGOs, representatives of ethnic groups, universities, the private sector, etc. The purpose of the Dialogues was to form an appreciation of the factors conforming governance as applied to the water resource (Integrated Water Resource Management) in each national context within the region, and thus contribute to the construction of an overall view of the region.

Because of the issue's complex nature, the countries chose different procedures, some lasting only one day, others holding several meetings and working sessions. However, the common denominators of all these procedures were widespread participation, the contracting of experts, and the preparation of background documents and preliminary hypotheses. These were for the purpose of triggering discussion, both in the various countries and also at a regional meeting. The deliberations were directed to the generation of a consensus on what the common characteristics of effective water governance in the region are.

The regional meeting on January 22, 2003, in Buenos Aires, was attended by 35 specialists from 10 countries of Central and South America. It was on this occasion that the regional document, preceding these annexes, was approved.

The full report of each National Dialogue can be found at the SAMTAC web site at [www.eclac.org/dmni/proyectos/samtac](http://www.eclac.org/dmni/proyectos/samtac).

The following annexes contain a summary description of the main issues discussed and of the procedures followed (date, place, institutions attending, and number of participants). The members of the South American Technical Advisory Committee, who provided the inspiration and convoked the dialogues in each country, were Víctor Pochat and Armando Bertranou in Argentina, Gisela Damm Forattini, Oscar Cordeiro Neto and Carlos Tuci in Brazil, Humberto Peña and Miguel Solanes in Chile, Inés Restrepo in Colombia, Roger Montes Domeq in Paraguay, Lidia Oblitas in Perú, Carlos María Serrentino in Uruguay, and María Elena Corrales in Venezuela.

### 2. Summary of the Dialogue held in Argentina

#### Water Governance in Argentina.

National One Day Workshop held October 30, 2002, organised by the Argentinean Institute of Water Resources, with the support of United Nations, ECLAC.

Participants, from the public administration, non-governmental organisations and the communications media, comprised a group of approximately 40 persons. They agreed that most water related issues could be discussed by using governance as the starting point

#### The state of Governance in Argentina

Water management is not independent of the national situation, conditioned as it is by the workings of the State and society in general. The Argentinean State today is weak and discredited, mainly because it does not fulfil its essential roles and fails to answer to the needs of society. This opinion was expressed enthusiastically in the meeting, but the participants were unable to agree on how to achieve active and responsible participation in government.

Argentina has a widely recognised deficiency in governance, and our experiences are closely related to this fact, so in order to find a means that may guide us to efficient governance we should basically backtrack some of the way, or at least make corrections to the routes taken. However, in water management, we are beginning to tread, albeit only as a beginning, along paths that may lead us to better governance of the sector.

*Water related issues are not independent from national reality*

Complementary with Governance, account must be taken of the sustainability of the resource so as to harmonise social, economic, and environmental considerations in the mid and long term, overcoming the emphasis on the short term, typical of Argentineans.

The answer must arise out of a strengthened role for the State and public participation.

#### The role of the State and Public Participation

In a country like Argentina, with a federal structure where water falls under the dominion of the provinces, greater efforts must be made in order to align the policies and the regulations of the different jurisdictions, it being a function of the federal government to coordinate and formulate national policies.

In order to improve governance the federal and provincial governments must:

- Set clear long term policies;
- Modernise regulatory systems;
- Promote extra-judicial conflict-solving mechanisms;
- Create a federal water council to coordinate inter-jurisdictional and inter-institutional relations; and
- The Federal Government must ensure the participation of the provinces and these ensure the participation of municipalities in inter-jurisdictional organisations.

Governments must also create the proper mechanisms for ample and effective public participation, acknowledging that informed decision-making processes require an understanding of the root of the problem, its scope and any alternative solutions, including non-structural ones.

In order for public participation to fulfil its intended role access to the formal educational system is indispensable and all educational levels, both formal and informal, should instil in their students their duty as citizens to make public issues their own. Curricula should include information on the question of water management.

Public communications play an essential role in achieving public participation in contemporary democracies, translating technical problems so that the public as a whole is familiarised with them and understands them, motivating the public to take an interest in the problems and identify with possible solutions. For this to happen, technicians and scientists must develop close links with journalists and other communicators, elaborating a fluid and constant communications programme going beyond the traditional diffusion of disasters (floods, droughts, mud slides, etc).

It is of fundamental importance to create alternative channels of communication to the traditional ones, as these are normally private companies subject to economic pressures, which can inhibit them from supplying objective and accurate information in every case. One alternative could be provided by specific discussion groups, both virtual and real, plus the magazines and web pages of non-governmental organisations.

### **Drinking water supply and sewage and water for a subsistence economy**

Water must be seen not only as a resource but also as a service.

In order to guarantee governance in the allocation of water rights it must be demonstrated that the use is beneficial, operating under conditions of efficiency and equity, and that the termination of the right be enforced, as opposed to the perpetuity that rights currently enjoy in several provinces.

In order to ensure equity, especially when water use is considered in conditions of a subsistence economy, the requirement to carry out technological improvements ought to be adapted to the conditions of the users. However, each user ought to improve the use of water in accordance with the technology that is available to him.

Argentina has almost ten years of experience in drinking water and sewage service concessions, yet these contracts do not guarantee governance due to the weakness of the regulating agencies, the high profit margins obtained by the concessionaires, the lack of clarity in service extension and its financing, the lack of legal security for users, and the absence of a clear definition of subsidies, together with renegotiating contracts, rather than to meet promised commitments.

The commitments undertaken by countries at the Summit on Sustainable Development for the achievement of service coverage targets for drinking water and sewage cannot be correlated with the targets committed to in the concessions of these services, as they are currently set out. Therefore, future renegotiations of these contracts ought to accommodate these commitments.

Neither do the services that have been left in the hands of the governments (provincial or municipal) or having been under concession have now reverted to the state, guarantee governance. In general, the decentralisation process has occurred without the responsible institutions having adequately prepared for the task. It is considered that government suppliers of public services should improve their business organisation, improve quality of maintenance, undertake network expansion, increase bill collection from households having sufficient payment capacity, and restructure the administration on which the water supply institutions depend in order to create independent management units.

### 3. Summary of the Dialogue Held in Brazil

#### *Summary of the Discussions of Brazilian Engineers on the Governance of Brazilian Water Resources, February 2003.*

This dialogue was carried out in stages, through sub-regional and national meetings, with the participation of 500 persons from central and local governments, academia, the private sector, NGOs, funding agencies, basin committees, and water users. The meetings were organised and supported by the Brazilian Institute of Water Resources (IBRH).

#### a) The Concept of Governance

In Brazil, over the last few years, numerous discussions have been held on the concept of Governance, at meetings where engineers specialised in water resources have participated. More modern conceptual variations have also been discussed, such as regime and governance. These are, in fact, partial discussions, since what is being intensely discussed in Brazil, in nearly all meetings, is the omnipresent issue of "Water Resource Management".

The discussions on Governance took place, for example, at the regional symposiums of the ABRH (Brazilian Association of Water Resources), in July 2002, at Campo Grande in the State of Mato Grosso do Sul, the Symposium of the Water Resources of the Centre-West, and in December 2002 at the Symposium on the Water Resources of the North-East, in Maceió, State of Alagoas. These two events convened more than 500

participants, including engineers and researchers from academia, the public and private sectors, representatives from NGOs and multilateral agencies, etc.

#### *Water resource management is what is being discussed today in Brazil*

With the support of the GWP, two specific meetings were held. On December 13, 2002, in Brasilia, a roundtable was organised, called "Institutional Models for Management", within the framework of the meeting "Water Matters in Brazil at the threshold of the 21st century, an International Technical-Scientific Meeting", in commemoration of the 25 years of the ABRH. Over January 16-17, 2003, a specific meeting on Governance and activities of the GWP in Brazil was held in Brasilia, in preparation for the Third World Water Forum.

#### b) The Governance or Management Crisis.

In Brazil, since the enactment of Law 9433 and,

more recently, since the creation of the ANA, "Agência Nacional de Águas" (National Water Agency), the discussion of water resource management has been making progress over the years. Although admitting that water policy implementation in the country is slower than some optimists had hoped, most Brazilian technical experts agree that today we have made progress over the situation of a year ago, even greater progress over the situation of five years ago and infinitely more progress over the situation of ten years ago. Water resource management policy in our country is a process and, as such, goes much further than management or the creation of mere administrative changes.

#### c) Water Governance and the Governance of Sanitation

It is the virtually unanimous opinion of Brazilian technical experts that the Governance of Water, as a "natural asset", should not be confused with Governance of the Sanitation Sector, one of the sectors using this "natural asset". The water resources sector in Brazil, after a long period of stagnation, is now fully linked to the electrical sector (another important user), and, it is currently modernising its management structures and not its institutional framework. The same cannot be said of the Sanitation Sector, which is facing an institutional crisis due to the lack of an appropriate institutional model and the insolvency of traditional sector institutions, among other problems.

#### d) Management tools for measuring quality in management

One of the important themes preoccupying Brazilian technicians centres on the quality of water resource management and how to compare different management systems. Management quality is currently measured, although informally, by the availability of some of its main manifestations, such as, for instance, the delivery of drinking water service and its tariffs. On the other hand, comparing different systems can be very controversial, as this comparison can be based on: (i) the number of existing management tools; (ii) the quality of existing management tools; (iii) the operational value of existing management tools; (iv) the improvement in water quality at the source; (v) the decline in conflicts over water use; (vi) the degree of user and public satisfaction with water quality conditions, among others. Independently of the form and criteria used for evaluation, there is unanimous agreement in Brazil that water resource management systems ought to be continually evaluated.

#### e) Regional divergences and diversities

Another subject frequently discussed in meetings in Brazil on Water Resource Management is related to

regional diversity and the difficulty in building a single model for the whole country. An example of this issue is the Brazilian Water Law itself, regarded as a law suitable for humid climates, something quite distant from the climate in the Northeast of the country. On the other hand there is also national consensus regarding the fact that regional inequality and diversity should not be analysed as a problem, but rather as a situation with diverse alternative solutions, always respecting local particularities.

#### **f) Centralization and decentralization**

Given the nature of the Federal State, water resources management in Brazil must necessarily consider three levels of administration: Federal, State and Municipal.

Without going into which Government level would be the most or the least appropriate for the different aspects of water management, the discussion in Brazil is centred on the need for much stronger cooperation between all levels of government and between the public and the private sectors. There is agreement that the River Basin Committees are the most appropriate forums for promoting the necessary integration required of the three levels of government.

#### **g) Groundwater**

Although, in the case of groundwater, the river basin may not be the most appropriate physical unit for water and natural resource management, it is always considered that each institutional form developed for surface water (such as management tools) is also valid for groundwater, except in some very specific matters in both water categories (surface and groundwater) and that water resource management must always consider the "hydrological cycle".

#### **h) Areas of agreement**

Brazilian technical experts consider as water resource management tools, not only the classic examples cited in legislation, but also (i) any and all instruments, documents, institutions, processes, acts, systems and networks, etc. which may have any kind of impact on the management of water resources. Furthermore, (ii) the best and most efficient water management instrument is still a good managing institution that is efficient, strong, well-structured, independent, and self-sufficient, and that (iii) with a good management institution and an efficient delivery system, it is possible to carry out any water resource management. It is considered that (iv) the management of water resources must be a specific activity, as specialised as possible, and its day-to-day aspects must not be confused with that of environmental management or with the construction of hydraulic works. (v) Brazilian technical experts agree with the other points of consensus cited and commented on in the document by Peña and Solanes.

## **4 Summary of the Dialogue in Colombia**

### **Effective Water Governance in Colombia**

The national two day workshop in December 2002 in the City of Cali, was organised and supervised by the Colombian Association of Sanitary and Environmental Engineering (ACODAL) and by UN, ECLAC, and attended by some 50 persons from different levels of government, the private sector, academia and NGOs.

Following the adoption of the Political Constitution of 1991, Colombia became a participative rather than a representative State. This introduced to the concept of Governance the achievement of a collective consensus, on the basis of political, economic, social, and environmental variables, thus the integration of the community in drinking water supply and basic sanitation service management.

The drinking water supply and basic sanitation sector has noticeable shortcomings due to instability and the absence of policies. There is also a scattering of responsibilities for policy definition, regulation, control and funding.

Colombia does not have a law or any integrated policy for planning and management of water resources. Drinking water supply companies, generally obtaining water from small rivers, gullies and nearby springs, mostly lack river basin conservation programmes, nor do they have adequate storage, transport or treatment systems, or any financial basis for their funding. Conservation, regulation, and resource management is neglected. There is an urgent need for river basin management and regulation programmes and for a new law and better water management.

Law 142 of 1992, the Domestic Public Services Law, has not resulted in either sector cohesion or the decentralization of service provision. The sector does not have accurate information, starting from the inventory of installed capacity, which differs from actual coverage in terms of quality and reliability. This law establishes that the tariff regime must meet the following criteria: economic efficiency, neutrality, solidarity, redistribution, financial sufficiency, simplicity, and transparency. From the first enactment of the tariff methodology in 1995 by the Drinking Water and Basic Sanitation Regulation Commission (CRA), public and private companies have edged closer to financial sufficiency at the cost of higher tariffs. It is urgently necessary to find a balance between the user and the service provider, in order that the costs incorporated into the tariff be correct.

The regulatory scheme has weaknesses in its methodology for calculating tariffs. Tariffs are calculated using accounting information, thus transferring any

administrative inefficiency to the user. There are no incentives for the concessionaires to increase coverage and quality, and, within a scheme applied to a large number of heterogeneous companies, this leads many of these to non-fulfilment and makes control and supervision difficult. There is a need to review the current tariff scheme, punishing inefficiency and eliminating unnecessary costs, but guaranteeing the maintenance of the water resource through a payment strategy for those living in "upper basin" areas to conserve water using a reasonable water use rate. Initially work has to be done on policy, drafting an appropriate policy for the drinking water and basic sanitation service that is consistent with the reality of our country. There is a need to assess the model applied for service provision to identify its strong and its weak points and to assess the current model for control and interaction between the Drinking Water Regulation Commission (CRA) and the Domestic Public Services Superintendency (SSPD).

### ***There is a need to review the current tariff scheme, dealing with inefficiency***

The Natural Resources code establishes that "the use of water for profit, either by individuals or by corporations, whether public or private, will be charged a fee set by the National Government, aimed at paying the costs of the protection and renewal of Natural Resources". This is applied to hydroelectricity generating companies, who have provided important levels of financing that is being diluted in too many studies resulting in little investment. The money that by law is transferred for basic sanitation and environmental improvement projects is not being invested, money which ought to be seen as a payment for an environmental service aimed at defending the river basin and the area of influence of the project.

In the past decade, Colombia has seen large-scale investments in the drinking water and sanitation sector, yet, paradoxically, it seems that every day we see the sector falling behind. Political management in the sector has been disastrous; funding is used for unnecessary, inappropriate and expensive works. There has been too much spent on studies, many of them duplicated, contributing in nothing to the systems. Technically we find ourselves with scarce resources appropriate to the country and little availability financial and social resources. Financially, Government efforts to obtain funds from multilateral banking institutions have had unfortunate results, as these funds have been found to be "tied" to goods and services from the originating country, to engineering, consultants and goods and services from the lending country. Many of these funds arrived already assigned to specified national and foreign engineering companies.

Governance is supported by the legitimacy associated with public participation, but the truth is that

there is no open forum available in the cities for discussing these issues. We only find political manipulation, both by Municipal councils and by the Mayors' offices, and great silence from professional associations and the academic sector on subjects as sensitive as water resource management. There is a need to close the gap, assess investments and projects and to generate a "critical mass" towards Governance. There is a lack of studies on appropriate technology for the country regarding costs, operation and maintenance, and construction methods. The critical mass of engineers in defence of their work, formation, knowledge and experience no longer exists; the defence of engineering has to be faced at the academic, trade, social and political level. It is proposed to recover the ability for constructive criticism, supported by participative democracy, ensuring the application of appropriate sector policies. It is proposed to argue for the development and consolidation of an appropriate technology for our country, with a clearly defined set of rules with clearly established terms of reference guaranteeing an economic and correct use of resources in the sector.

### ***The regulatory framework of the sector must be unified***

The regulatory framework of the sector is a patchwork of guidelines that must be unified, minimising the risks due to a lack of a stable regulatory framework to promote sector investment. The current government acknowledges the drinking water and sanitation sector to be in need of urgent attention and is providing a framework for public policy definition in the sector as the first mechanism for reaching agreements. As a second mechanism, an administrative review of the sector is required, for which the Colombian Association of Sanitary and Environmental Engineering and the National Association of Domestic Public Services (ANDESCO) propose the creation of a Vice-Ministry of Water and Environmental Sanitation. Thirdly, interaction must be fostered with the legislature in order to enact a Water Law that reflects in a balanced manner, both for the user as for the supplier, under the required environment and economic considerations, an efficient use of water resources.

## 5 Summary of the Dialogue in Chile

In Chile, the dialogue was organized by ECLAC and some 50 persons participated in a one-day workshop, together with four sector working groups and roundtables in regions.

- a) In order to prepare the report "Water Governance in Chile", commissioned by the Dialogues Organizing Committee in Chile for the Third World Water Forum, sector roundtables were held and a national workshop organized, in preparation for adopting a common position for presentation at the Third World Water Forum.

Additionally, a meeting was held in the city of Illapel with the members of the Choapa River Basin debating roundtable, plus a meeting with public sector employees in the area of water resource management from the IV Region of Coquimbo.

- b) In preparation for the discussion, a document was drafted listing issues with reference to water where there was a certain level of consensus, and those where there remained some disagreement

The purpose of the meetings was to gather opinions on the preliminary document so that the final document could include the various opinions put forward and so reflect a national position.

Various public sector officials, academics, members of non-governmental organizations, water users including small farmers, heads of user organizations, among others, attended these meetings. Large companies did not participate, nor did any of their representative institutions.

- d) As the point of departure for analysing water governance in Chile, it was suggested that a certain basic consensus was needed regarding: (1) the function that water resources play in society and (2) the public policies for managing, regulating or inducing human behaviour in water use and conservation.

- e) A distinction was made as to who should adopt these points of consensus between formal users and those who are affected by these users, classed as informal users. Formal users are understood to be those having property rights, the rest of the population being informal users, who may be affected, to a greater or a lesser extent, by the availability of or the use given to water, as they have legitimate interests in the uses given to it.

- f) With this in mind, consensus was reached in the following areas:

- i) **The nature of water as a national asset of public use, yet from which private usage rights may emanate.**

There is consensus in recognising that water is, by its nature, a hybrid resource, part public and part private. This means that it will always be necessary to accept state intervention, but, on the other hand, that the use made of water falls into the domain of the private sector. Consequently it is agreed that private management leads to a better use of the resource.

- ii) **The existence of uncertainty in water management.**

A second area of consensus was reached, agreeing that there is a significant degree of uncertainty regarding its management, resulting from economic, social and environmental issues.

- iii) **Chile has a democratic system, with a clear separation of powers.**

Our country has a democratic system with a clear separation of powers, where there is respect for the rule of law, with a more than acceptable level of voluntary compliance with legal regulations, and a judicial system capable of solving the controversies presented to it, including those concerning water resources.

- iv) **The economic system is based on free enterprise and the protection of property rights.**

Although the water code recognizes that water is a national asset for public use, it allows usage rights to be awarded to private parties. These are guaranteed under the constitution, as there is a property right embodied in them. The rights are also freely transferable independently of land ownership.

- v) **As part of this economic system, it is increasingly accepted that freedom of enterprise and property rights can be subject to limitations to protect the environment.**

It is accepted that the freedom of enterprise and the right to property can be limited by the need to protect the environment, therefore admitting the possibility of regulating water resources.

- vi) **The State has a presence in matters related to regulation, supervision and the enforcement of legislation.**

It is accepted that the state should have a subsidiary role in regulating water use. However, this does not imply a failure to recognize the need for a high-profile presence of state institutions in the management of water resources, and in the supervision and enforcement of regulations.

- vii) **Due to the variation in the geographic condi-**

tions of the country, the nature of water resources is notoriously different in the northern, central and southern parts of the country.

The characteristics of each part of the country must be considered, as it is not feasible to make national generalisations, because of the diverse geographical characteristics.

viii) Although in Latin America, in some places, the coverage of sanitary services is deficient, Chile does not have this problem.

**99% of the population has fresh water service**

Based on an estimate of December 2000, out of a total urban population of 13,341,908 persons, 99.6% had access to drinking water,

while 93.3% were connected to a sewage system. Additionally, recently wastewater treatment plants have or are about to come into operation that would mean that over 50% of sewage will be discharged after treatment.

g) Areas where there is a certain level of disagreement, or where further agreement must be reached, can be divided into:

i) Issues related to water resource management

Although it is generally accepted, theoretically, that there ought to be integrated management of water resources related to the complete hydrological cycle and including the management of ground and surface waters, this is not the case in Chile.

ii) Conflicts related to environment protection

Conflicts arise over: (1) the maintenance of a minimum ecological flow in rivers, affecting the availability of water resources; and (2) the quality to be maintained or achieved in surface watercourses and bodies.

iii) Conflicts over access to or availability of water resources

The most important challenge posed for the constitution of new water use rights is not in awarding surface water rights, but rather rights over groundwater. Therefore, as we are dealing with a national asset of public use, the original granting of which is free, the requesting party must at least (a) justify the reasons for granting a right and (b) be obliged to use them during a given period.

iv) Economic aspects of resource management

It would seem reasonable that the holders of water use rights, who do not use them effectively, should pay a fee for unproductive possession. However, the idea of the fee has been questioned, as hydrological variability does not allow for the use of all the water for which there are usage rights.

v) Groundwater resources

One of the most important areas where consensus must be generated is in the management of groundwater resources.

vi) Structuring a mechanism for conflict resolution or consensus generation

***It is necessary to create consensus on underground water resource management***

The fact that conflicts are solved exclusively through the courts generates a situation of winners and losers, in situations where the conflict could actually have been solved through agreement.

The dialogue in Ecuador was supported by CANAREN. Two local meetings and one national meeting were held, with the active participation of some 400 persons representing the whole spectrum of key players.

In general, all the observations contained in the Peña and Solanes document are applicable to Ecuador, in particular the sections "conceptual framework", "Relevance to Latin America" and "The Problems of the State and Civil Society".

**Particularities of the situation in Ecuador include:**

- In Ecuador users are not grouped together in cooperatives, as mentioned in the document, but rather in User Committees, whose purpose is the coordination of the operation and maintenance of irrigation and water supply systems in rural areas.
- In the country there has been a very limited increase in public awareness of water problems.
- The constitution of the Republic of Ecuador defines water as a social good within the public domain. The issue of water markets was discussed by the country in 1996 and was soundly rejected. However, the question ought to be further discussed to evaluate the possibility of transferring usage rights within a group of users under rules clearly defined by the State.
- With reference to the hierarchical dependence of the sector and its institutional structure, it is suggested in the document that institutions generating policies and plans should be separate from the institutions responsible for operational planning, design and construction. This is something that remains to be undertaken in Ecuador.
- The institution acting as Water Authority in the country (the National Water Resources Commission CNRH) has no effective autonomy or independence. The CNRH Secretariat depends administratively on the Ministry of Agriculture and Livestock, and is thus subordinate to one of the water users.
- The main problems discussed in the section on "economic rationale and social demands" are problems that Ecuador also faces, together with the conflicts mentioned between the state and private companies.
- The Water Law and other legal texts contemplate the participation of users and other interested parties; however, this does not occur in practice. Their participation is limited to the operation and maintenance of small systems in rural areas. There is a need to establish new strategies for public participation.

- In pollution control, the country is very backward. There is no public awareness of the problems associated with pollution, or funding mechanisms, or any permanent controls on receiving waters, or national policies or plans.
- The construction of large-scale hydroelectric works has stagnated, as there is no national agreement on financing mechanisms or on how the private sector can participate.
- There are conflicts between ethnic groups and large-scale water users, especially in the oilfields. Administrative and judicial mechanisms for the adequate protection of the interests of indigenous peoples remain to be developed.
- The conflict-solving capacity of the government is very limited. There is an absence in the country of conflict-solving techniques, such as have been developed in other countries in recent decades.

*There is no social awareness of the problems associated to contamination*

Following are some comments on chapter IV that ought to be considered in Ecuador:

- In part 1, an important element that should be added to the design of a governance system is the consideration of "the different administrative systems existing in the region", such as centralized, decentralized, semi-decentralized, etc.
- In part 2, "the limits and conditions of usage rights" ought to be added as a legislative norm, to be able to make adjustments in concessions, which may require review, because of special requirements (such as public interest, climate change, etc). Additionally, in reference to water resource planning agencies, it is necessary to add that these ought to take into account plans for natural resources related to water, as well as national and provincial economic planning.
- With reference to the fundamental principles for the regulation of drinking water and sanitation services, the following should be added: "the efficiency in the management of the resource" and "the independence of the companies supplying the service".
- Because of the specific nature of services provided by each water sub-sector, it is important to add the fundamental principles that ought to be in place for the regulation of each one. For instance, for the irrigation sub-sector, the following could be added: acceptable levels of water quality for irrigation, equitable distribution, fees in accordance with social and economic needs, levels of user participation, proper aquifer use, etc; for the hydroelectricity sector: reservoir manage-



ment in accordance with other uses and potential damages, multiple use and tariffs, etc.

- With reference to the institutional arrangements for water management, although independence is important, there should be interrelation with institutions in charge of other natural resources, such as soils, vegetation cover, and the environment in general.

In general the proposals set out in the document are applicable in Ecuador, given that the basic cause of the problems has the same source. It can be fully appreciated that the reason why the changes carried out in the last decades do not necessarily reflect national situations is that they were in answer to similar external influences, such as the imposition of criteria by international institutions, and, to a certain extent, to the application of "gimmick" solutions by certain sector interest groups supported by international institutions.

The criteria expressed in the document were taken into account when analysing the situation in Ecuador. The answer to improving governance in water resource management is that simultaneous interaction of all management instruments and initial professional leadership is necessary if fundamental changes are to be achieved.

The conclusion reached is that to achieve effective and efficient governance, the following elements are essential:

- Clearly defined objectives and policies.
- Well-organized institutions with precise definition of responsibilities and attributions.
- Appropriate management instruments.

## 7 Summary of the Dialogue in Peru

The Dialogue in Peru included three local Dialogues and one national workshop. The Dialogue brought together some 200 persons from all national walks of life and was coordinated and organized by the Catholic University. The national workshop was held in September 2002.

### 1- Findings and recommendations

#### 1.a-Areas of Agreement

- Current regulatory shortcomings stemming from a failure to reflect the particular situation in the region have been clearly identified during the dialogues.
- Priority should be given to modification of the Water Law and it is suggested that a general water directorate be established, independent of any sector (it is currently within the Ministry of Agriculture).
- Overcoming poverty and greater equity must be given overall priority, beyond any other political or economic interest, in the design of any strategy for achieving efficient water governance.
- Rivalry between traditional and "modern" water management systems is, according to the discussion in the dialogue, a source of regulatory and institutional conflict.
- Activities aimed at environmental sustainability could be economically viable if environmental and social values were assigned to water and environmental services were subject to fees and charges.
- Water pollution is a fact established in all dialogues, as is the lack of regulations defining tolerable indices and activities.
- There is a high level of ignorance among the public of their rights and duties in the management and administration of Water Resources. Real participation by user and multi-sector committees must be achieved.

## 2- Summary of presentations

	THE CURRENT SITUATION	PROPOSALS
	<b>SOCIAL GOVERNANCE</b>	
<b>Public Health and Health Sanitation Education</b>	<ul style="list-style-type: none"> <li>• There are few studies of the quality of water consumed both in terms of levels of pollution and of the physical and chemical characteristics of the water source.</li> <li>• There are no health education programmes focusing on the treatment of wastewater, the use of agricultural chemicals or of drinking water consumption.</li> <li>• There are no urban plans that take into account the risks associated with areas vulnerable to floods and landslides.</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of water quality through a permanent monitoring system.</li> <li>• Enforcement of norms and monitoring polluting activities.</li> <li>• Promotion of a "Water Culture" at the national, regional and municipal political levels through the mass media and in educational centres and within families.</li> <li>• Carrying out Public Awareness campaigns through the mass media and municipal courses and workshops.</li> <li>• Fostering the use of ecological agriculture techniques without the use of agrochemicals.</li> <li>• Planning alternative opportunities for settlements in vulnerable zones.</li> </ul>
<b>Indigenous Rights, Rights of traditional organizations and of the Irrigation Committees</b>	<ul style="list-style-type: none"> <li>• The traditional organizational structure is not respected and there is a tendency to impose a global water management system that disregards geographical differences.</li> <li>• Current regulations do not respond to the different situations and problems in the regions.</li> <li>• There is little clarity in the regulatory-legal aspects of the definition of territorial rights and in the use of resources in traditional territories of indigenous peoples.</li> <li>• Regulators do not know the rules governing customary rights.</li> </ul>	<ul style="list-style-type: none"> <li>• Development of institutional and legal policies that consider the Rights of Indigenous Peoples and peasants in national y campesinos dentro de las normatividades regulaciones.</li> <li>• Fostering the strengthening of community-based organizations and their respective associations.</li> <li>• Institutional strengthening of irrigation committees.</li> <li>• Integration of traditional water management in public institutions through public meetings.</li> </ul>
<b>The Environment</b>	<ul style="list-style-type: none"> <li>• Inadequate management of irrigation, drainage, and extractive use of natural resources causes soil degradation and loss of biodiversity.</li> <li>• Deterioration of water quality through pollution of the upper basin increases the costs of production and delivery of drinking water to users in the lower basin.</li> <li>• Deforestation and inadequate land management are linked to the severity of natural disasters.</li> </ul>	<ul style="list-style-type: none"> <li>• Training in the use of technology in accordance with water use and natural resource capacity.</li> <li>• Environment fees to finance reforestation and soil recovery programmes and training recuperación de suelos y talleres de workshops.</li> <li>• Elaboration of Environmental Education programmes for inclusion in the school curriculum.</li> </ul>
<b>Public Participation</b>	<ul style="list-style-type: none"> <li>• Lack of dialogue and coordination between public institutions and the population.</li> <li>• The organization of users in Associations or Committees is weak as they do not feel identified with water issues and management and do not know their rights and duties in respect of public utilities.</li> <li>• Little representation by user organizations in decision-making at the municipal and administrative levels. Excessive politicisation.</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of participatory management mechanisms by promoting the strengthening of user committees.</li> <li>• Programmes within institutions for active public participation in the development of priorities for the supply of basic services to the most disadvantaged.</li> <li>• Promotion of a new institutional structure through a reform of the State to protect and defend indigenous peoples and their use rights.</li> </ul>

**Training and public awareness**

- There is no sense of commitment or common effort to solve problems on the basis of the decisions and responsibilities previously agreed to.
- There is no community leadership-training programme, as the development of social capacities is not assigned adequate importance.
- There is no social consensus or definition of priorities for training.
- Complementing the development of abilities for social management with the introduction of training programmes in agricultural development.
- Informing through the mass media and workshops on the uses and customs of traditional societies.
- Developing courses in higher education on integrated water management.
- Encouraging public discussion and participation in legislation through the use of the INTERNET.
- Building awareness and knowledge on pollution and environmental issues through open television.

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**POLITICAL AND ADMINISTRATIVE GOVERNANCE**

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**River Basin Management**

- Excessive and complex bureaucracy in state institutions when dealing with any request related to resource management.
- Little public transparency in the design of management policies. Too many political interests.
- Poor coordination between public and private sectors, and between the users in upper and lower river basins.
- Social instability and conflicts in community organizations between agricultural and non-agricultural users, indigenous and non-indigenous, users and the public.
- Absence of proposals with broad based multi-sector consensus. Imposition of sector interests or those of specific interest groups.
- Ecological planning of land use in river basins.
- Elaboration of a proposal for participatory management.
- Integration of the interests of users in the upper and lower basin.
- Public authorities and employees must obey the laws emanating from the demands of society. The regions must call for the elimination of the practice of political appointments by the central government.

**Research**

- There are no serious studies on the current supply of and demand for water resources or on river dynamics.
- There are no studies of water consumption by crop.
- There are no specific studies of the factors affecting water resources in a river basin.
- There is little information on natural disaster prevention and early warning systems.
- Establishment of an information system for each river basin as a basis for the formulation of management policies.
- Installation of hydro-meteorological networks.
- Development of adequate management techniques for each environmental situation.
- Research and diffusion of traditional techniques of natural resources management.

**Multi-sector agreements**

- Poor information on the water resources coupled with increasing demand due to demographic growth in both rural and urban areas has caused serious conflicts between users and utilities.
- There is an overlap of functions among government institutions.
- There are conflicts between sectors due to the interrelationship between water quantity, quality, price and conservation.
- There are no conflict-solving arrangements.
- There is no link between emerging measures of social agreement and the political decisions taken or in progress.
- Consolidation of participatory governance at the municipal, district, provincial and departmental levels through public meetings.
- Creation of organizations for managing integral policies (administrative and technical).
- Coordination between state and local institutions.

<b>Regulations</b>	<ul style="list-style-type: none"> <li>• Lack of an adequate legal framework adjusted to the different situations within the country.</li> <li>• Current legal uncertainty because of the consecutive delays in passing the new Water Law.</li> <li>• Excessive politicisation in local governments. Centralism.</li> <li>• Lack of fairness between property and usage rights and gender.</li> <li>• There is no regulation of international rivers.</li> <li>• Laws are ineffective in punishing illegal polluters and withdrawals due to superimposition of institutional powers.</li> </ul>	<ul style="list-style-type: none"> <li>• Review of current legal frameworks.</li> <li>• Promotion of regulations that consider the particular features of each region.</li> <li>• Formulation of a consistent, integral legislation as a product of the continuous agreement among interested parties.</li> </ul>
<b>Control and surveillance</b>	<ul style="list-style-type: none"> <li>• Environmental impact studies are not carried out before actions related to the resource are implemented.</li> <li>• Pollution parameters and degrees of fragility have not been clearly defined so as to adjust them to regulations.</li> <li>• Non-compliance with environmental regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• Application of effective mechanisms to sanction users and offenders.</li> <li>• Permanent monitoring of activities related to water use.</li> <li>• Agreed commitments between users and competent authorities.</li> <li>• Forcing wastewater and solid waste management systems to comply with regulations.</li> </ul>
<b>Water Authority</b>	<ul style="list-style-type: none"> <li>• Conflicts among the different state institutions responsible for coordination of river basin management.</li> <li>• Absence of a single management organization for each river basin.</li> </ul>	<ul style="list-style-type: none"> <li>• Proposing a model river basin authority through public discussion.</li> <li>• Elaboration of a proposal for a Law on River Basin Authorities.</li> <li>• Establishment of a basin board or council for regulation, conflict resolution and management supervision of the resource at the river basin level.</li> </ul>

#### ECONOMIC GOVERNANCE

<b>Priorities</b>	<ul style="list-style-type: none"> <li>• Economic and social development priorities determine political decisions independently of the needs and capacity of the natural resources.</li> <li>• Land use planning should adopt natural disaster prevention as a priority.</li> <li>• There is a lack of funding support for sustainable activities in tune with the natural characteristics of each river basin.</li> <li>• Inadequate policies for the promotion of profitable and environmentally sustainable activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Economic governance of the river basin must give priority to the search for sustainable agricultural and livestock development alternatives. Social and economic valuation of water.</li> <li>• Spatial rationalisation of settlements and economic activities.</li> <li>• Development of programmes promoting sustainable economic activities.</li> </ul>
<b>Drinking Water Supply and Irrigation</b>	<ul style="list-style-type: none"> <li>• Inadequate management of water and sanitation utilities.</li> <li>• Lack of transparency and participation of user organizations in administrative councils.</li> <li>• Strong politicisation in appointments and in management policies.</li> <li>• User unawareness regarding their rights and duties and lack of capacity to participate in the administrative boards of utilities. There are no strong user organizations.</li> <li>• There is no institutional structure to provide adequate drinking water and sanitation services in rural areas.</li> </ul>	<ul style="list-style-type: none"> <li>• More information and transparency in management through consensus building. Carrying out public studies and information on supply of and demand for water resources.</li> <li>• Transparency in management through permanent information: locally through the mass media; regionally, through conferences.</li> <li>• User boards must be represented in the administration of utilities through technicians.</li> <li>• Making public and enforcing urban development plans.</li> </ul>

- Infrastructure**
- Incomplete offers to supply service.
  - Inefficient investments as works are not designed according to contingencies and impacts.
  - Lack of drinking water supply infrastructure in rural communities.
  - Insufficient budgets for constructing and maintaining works.
  - Funding of studies for adequate works.
  - State responsibility for the completion of proposed works.

### 3- Summary of seminar discussions

The conclusions of the workshops are summarized as follows:

- To address economic sustainability in the planning of strategies for effective and participatory water resource and river basin management it is necessary to tackle the issue of both agricultural and urban tariffs for reaching full service provision. It is not feasible to continue presenting strategies subsidized by the State, nor is it possible to go on using the water resource as an inexhaustible good or as a latrine for human use. Economic sustainability also requires market studies to ensure profitable commercialisation of the production in a river basin through the design of economically profitable and socially and environmentally sustainable activities. Here lies the importance of the intervention of the Chambers of Commerce. There has been no identification of ecotourism activity and its implications for the use of the resource. Ecotourism is a "green" industry and of significant economic importance in the region.
- Overcoming poverty and achieving equity must be given overall priority before any other political or economic interests in the design of any strategy for achieving efficient water governance.
- Rivalry between traditional and "modern" water management systems is, according to the discussion in the dialogues, a source of regulatory and institutional conflict. The question is: In what does this conflict consist?
- Activities aimed at environmental sustainability could be economically viable if environmental and social values were assigned to water and environmental services were subject to fees and charges.
- Environmental health, sanitation education, and water quality configure a basic triangle in social governance strategies for water. Water pollution is a fact, established in all dialogues, as is the lack of regulations defining tolerable indices and activities.

- There is a high level of ignorance among the public of their rights and duties in the management and administration of Water Resources. It is generally proposed to strengthen and educate user organisations.
- Current regulatory deficiencies due to a failure of adjustment to the particularities of each region have been obvious in the dialogues. In the case of river basin management and monitoring, however, would it not be necessary to think of a system capable of monitoring proscribed or polluting activities specific to each basin?
- Regarding political governance, there is a feeling in rural communities that they have lost an organized system for managing the resource by the community and that "more modern" management systems, more complicated for the users, have displaced them. The introduction of new technologies by means of which water is now taken from its source and carried directly to the cities by pipes has changed access to the resource and has made them dependent on "outsider" organizations.

### 4- General discussion and conclusions:

#### Participants

The total number of participants in the three dialogues was 127.

Grouped by major social groups:

- 39 representatives from government institutions
- 35 representatives from universities and research institutions
- 9 representatives from International Cooperation organisations
- 1 representative from the communications media
- 30 representatives from civil society
- 2 representatives from the church

- 8 representatives from NGOs
- 5 representatives from public utilities

In general, the most remarkable aspect of the participation in the dialogues has been the ample representation of civil society in the form of NGOs, User Boards, Irrigation Committees, neighbourhood committees, and Civil Defence committees. This indicates an increasing public interest in participating in decisions and strategies concerning the use of water resources and in putting forward their demands and interests.

At the same time, the participation of representative political authorities competent in the formulation of management policies and regulations has been considerably reduced, which has negatively affected the future impact of this effort to seek participatory governance. The representation of sectors responsible for regulatory, technical, and administrative control has been important, although their lack of real practical representation was criticised.

#### **Suggestions for Continuing the Dialogue:**

- There is a need for further analysis of the factors that lead to efficient water management both at the national and at the local level by institutionalising these dialogues in the future.
- There were several suggestions that the Peruvian Water Association (Global Water Partnership-Peru) should be open to everybody. The National Natural Resources Institute agreed to support the organisation of a two-day dialogue to discuss the proposals of the different institutions. The national environmental council (CONAM) underlined its coordinating role and for this reason it could be the appropriate organisation to plan the agenda and obtain ample participa-

tion in the meeting.

- The various local participants expressed their interest in continuing the Dialogues and in Piura and Ayacucho there are already organisations for this purpose. In Amazonia a water management and governance council bringing together the main players from all public and private areas is needed. At the national level, the General Environmental Health Directorate, DIGESA, is in process of creating an environmental management group (GESTA) for water. In Iquitos, there is a plan to launch a follow-up programme through the Faculty of Chemical Engineering of the National University of the Peruvian Amazonia.

#### **The proposed initiatives are along the following lines:**

- Creation of a water culture.
- Appropriate valuation of water.
- Food safety issues.
- Involvement of candidates from political parties in learning about this issue (related to regionalisation).

Finally, the Dialogue on Effective Governance has had quite a high impact in Peru; governance has been debated as an important issue in several fields. Also, arising from this initiative, several institutions (public institutions and universities) have approached the GWP-Peru and have expressed interest in joining it. At the same, a neutral platform has been created where interested parties from different backgrounds have been able to exchange views in a harmonious environment and it is expected that this initiative can move forward during 2003.

***Main Ideas Discussed at the Workshops, the Governance Forum, and in Plenary Meetings in Paraguay***

The dialogue in Paraguay had two phases, a two-day workshop involving 50 municipalities followed by a national one-day workshop. The workshops were supported by ECLAC, the Paraguay Water Resources Association and the Centre for the Study and Education in Ecodevelopment (ALTER VIDA). There were over 160 participants present at the national workshop, November 2002.

**Water Resource Management: Knowledge and the exchange of information**

It is of paramount importance for the country to know the extent of its water resources and to understand their value, both in quantity and quality. This includes a registry of water users and of water balances by river basin and micro basin. In general, it is necessary to have a geographical survey of water resources as the guiding parameter. It is also necessary that local governments participate in this geographical survey. Data and maps are needed pertaining to critical environmental aspects in water resource use, as well as information about social and economic conflicts arising from undue resource use, among other things.

This would require establishing a water resources information system, and contributing to the debate about the centralisation or decentralisation of any information system.

The need to construct a reliable information system for water resources reflects a heartfelt concern put forward in the dialogue: the need for a national water resources plan, where clear definitions are established of how the country means to use its resources, or the development of a water vision, as a basis for outlining the objectives and steps to be taken for governance and sustainable use of national water resources.

In the same way, it is necessary to gather and organise existing information, currently dispersed, on projects, evaluations, and research carried out on water resources at the national level. Similarly, there is a need to configure information networks (projects, statistical data, evaluations, and management methods) and, in general, create information networks.

Emphasis was also placed on constructing regional databases to provide local governments (municipalities and provincial governments) access to up-to-date information regarding the local water resource situation.

**Legal Framework**

On repeated occasions calls have been made to define regulations for the water sector. This could be in the form of a General Water Law or Water Code to be agreed upon by all sectors. The enactment of a Water Code should also include jurisdiction for its application (laws and courts). It is also indicated that it is necessary to separate the legal framework from the administrative and institutional framework.

The materialisation of the initiative put forward accentuated the need to clarify several conceptual points. The example is cited that, in accordance with current national legislation and bearing in mind the concept of "usage and custom", groundwater is private property, which leads to the conclusion that there exists a de facto privatisation of water resources. Thus, it is paramount to emphasise the need to treat water as a public good belonging to the State of Paraguay, without discriminating among its sources (atmospheric, surface or groundwater).

Regarding the legal framework, it has been pointed out several times that the current one is insufficient. It is indicated that, with the enactment of the law establishing the Regulatory Institution for Water Supply and Sanitation (ERSSAN), several other laws and articles were abolished, generating important legal loopholes in the regulatory structure. An example of this is that, with the enactment of ERSSAN, the only institution that carried out water quality control, the SENASA (the National Environmental Sanitation Service), dependent on the Ministry of Public Health and Welfare, has been left outside the system.

***The enactment of a Water Code must also include application jurisdiction***

As expressed in the report of the consultant in the background document, in the last few years the country has been in a conceptual void, as there is a marked weakness in the concept of water as a natural resource in the legal framework, added to the fact that, by cutting back the relevance to the subject of the Ministry of Health (as in the case of water quality), the concept of water as a public health issue has also been weakened.

Finally, the need is indicated to work within a multi-disciplinary team in order to properly define all existing vacuums, overlaps and legal deficiencies to incorporate these into the new proposed regulations.

## Management and Coordination Systems

Integrated Water Resource Management requires the implementation of a working methodology, as has already been developed by countries currently carrying out Integrated Water Resource Management projects and have greater relative development in management and social and political organisations for these purposes.

There are various projects at the national and local level in the area of Integrated Water Resource Management which are dispersed, providing the possibility of coordinating efforts and implementing joint actions.

It has been pointed out many times that there are professionals trained in developing Integrated Water Resources Management research and development in the country (human capital).

### Decentralisation

It was suggested that decentralisation be considered not only in administrative terms, but also in consideration of geography, such as a partition following criteria based on river basins or regions. At the same time there is a need to define the roles and functions of institutions.

## *Integrated Water Resource Management requires the implementation of a working methodology*

In many cases, close links can be established between local administrations and river basins or micro river basins.

In other cases, and when the administrative, political or organisational situation in a region indicates it, the concept of an Administrative River Basin can be

incorporated. That is, a group of municipalities in a region, sharing similar production systems, land uses, ecosystem characteristics, etc, can manage several river basins or micro basins in a coordinated and collective manner. An example would be the municipal association of the southern Alto Paraná, the current recipient of river basin or micro basin management projects financed by the World Bank and coordinated by the Ministry of Agriculture and Livestock.

A review of the legal framework is suggested, based on this example and emphasising the decentralisation of water resource management, using article 13 of the Law Creating the Environmental Secretariat, which allows the decentralisation of Secretariat functions in favour of the provincial governments and municipalities.

It was argued that the discussion must include the management of specific large-scale projects, such as projects

having cross-border management or involving large-scale water resources (River Apa, Pantanal, Bañados de Ñeembucú, hydroelectric basins, Chaco supply waters, Guarani aquifer, etc.)

## Suggestions made by the participants in the Governance Forum

### Regarding Data Bases

- A survey of users
- A survey of institutions and involved groups
- The organisation of a data base of available projects in universities and sector institutions
- A study of the size of the market (with several alternative scenarios) in the area of drinking water and sanitation.
- A survey of positive experiences in water resource management
- A survey of the human potential (technical and scientific) existing in the country.

### Regarding the Working and Management System

- Create working teams (focal groups)
- Set up sector working teams
- Decentralise water governance
- Set up lines of cooperation among the professionals of the sector institutions to elaborate and give priority to project profiles on water resource research and assessment
- Carry out joint management by the different sectors (public and private) of water resources (surface and groundwater)
- Work with all participants
- Work as a unified group, as water involves all sectors (multi-disciplinary)
- Reach multi-sector agreements
- Construct an information network on water-related research.
- Achieve practical communication among the various involved institutions and follow-up activities
- Establish water quality monitoring stations

### With Reference to Participation

- Participation of decision-making sectors
- Real participation of the three powers of the state:  
The Executive: National Water Authority  
Legislative: Water Code  
Judicial: Laws and Courts. The "Grupo Chaco"
- Strengthen public participation (Paraguayan Water Resources Association and others)

### Proposed Actions

- Develop a shared vision on water management
- Elaborate Integrated Water Resource Management principles and set out policies for action
- Design procedures for effective governance



- Define institutional roles at general and specific levels of water management
- Seek consensus among sector institutions on water resource management
- Review the legal framework and bring it up to date
- Redesign and update the regulations
- Define and identify the participants at the different levels of water management:
- Economic - Production
- Scientific - Research
- Technical- Regulatory
- Political - Public
- Evaluate the current condition of water resources in the country
- Carry out a scientific evaluation of the water resource, its variability and changes
- Develop water quality regulations for various uses
- Identify the uses and create a prototype model for reconciliation of competitive uses
- Increase and rationalise knowledge of the water resources (quality and quantity) and their potential for use.
- Promote and create awareness on water use in the family and on the part of the public in general.
- Apply the Integrated Water Resource Management model.
- Organise meetings to seek consensus among the relevant participants in the national water policy field
- Invest in dissemination and the creation of social and political awareness of the importance of water resources.

### Regional and National Governance Workshops in Uruguay Conclusions Reached on the Main Issues

#### General Considerations:

Highlighted as relevant,

- The significant changes observed both in water uses and water quality requirements that pose a challenge to current water resource management.
- Growing agricultural use of water, coupled with insufficient knowledge regarding the environmental cost of agricultural activities.
- The growing importance of environmental quality in water regulation.
- Incorporation of the health sector in water regulation due to its importance for health.
- Management of ecosystem protection within a framework of a policy regulating natural resource use as a whole.
- Large cities as areas of concern due to their impact as large-scale users of the water resource.
- Concern about felling and ultimate loss of native forest, particularly along the banks of watercourses, specifically as the consequence of the expansion of agricultural activity (particularly rice).
- The impact of mining on the water table and the associated pollution.
- The need for a two-way relationship between Integrated Water Resource Management (IWRM) and Governance.
- The need for Integrated Water Resource Management to represent a comprehensive resource management approach including related ecosystems.

#### Social Considerations.

It would be convenient to,

- Develop a regional focus, based on geographic criteria, to progress in integrated river basin management. The Departments (Municipalities) can take on a managerial and participating role in the management of river basins, but this commitment presupposes a cost-benefit analysis.
- Try to achieve a direct relationship of environmental management with local development problems. Improvements in environmental quality have a positive impact on the quality of agricultural and industrial production and also on the requirements for entry into the more demanding international markets. However, it demands reform programmes that would imply more integrated development and regional management programmes.
- Obtain greater involvement of the departmental administrations in river basin management, as well as the necessary public participation. This demands a better exchange of information between the central admi-

nistration (the executive power) and departmental administrations.

- Propose appropriate negotiations regionally in order to managing river basins as the ideal environmental unit. This approach points in the same direction as the decentralised management models proposed by the government at the national level.
- Consolidate national solidarity in both directions, that is, water for all uses and at the same time evaluating and compensating for the opportunity cost represented by water rights of some areas being destined to other areas for the benefit of all concerned.

#### **Water Management Considerations.**

- Ensure the necessary integrated management approach to the coastal area and the Rio de la Plata basin. Emphasise the fact that water quantity and quality mismanagement at the basin level has consequences for our coastal resources.

#### **Institutional Considerations.**

Emphasis has been placed on,

- The structure of the State in matters relating to water resources conditions their governance. In Uruguay, the quantity and quality of the resource is administered by various Ministries.
- Improved integration: (i) at the state level in order to reduce the dissociation of quantity and quality in water resource management, (ii) obtaining a better vertical integration of the State, Intendancy, Regional Boards and the public. Both top down as well as bottom up.

***It would not be prudent or possible to concentrate all decision-making in a single institution***

existing legal frameworks are good, but controls are not effective, so there is a need to improve monitoring mechanisms.

- The recognition that multiple institutional responsibilities affect the efficiency of resource use regulation.
- The fact that there are too many water-related agents, both at the institutional level and in the number of users in a river basin. Currently there are no mechanisms in place to harmonise interests at either level.
- The fact that it would be neither prudent nor possible to concentrate all decision-making in a single institution, as it would end up, among other things, carrying out self-assessments in matters of water use and their associated environmental costs.
- The fact that Basin Institutions are the proper environment for water user participation and for shared management for coordination and consensus building.

#### **Legal Considerations.**

Special emphasis was given in all the workshops to the following,

- Water must retain its character as a public good. Despite this, there is concern about certain partial privatisations in the water sector and the importance of information and communication systems for public participation.
- The need to improve dissemination of information and of the knowledge available, involving the responsible public institutions in this effort, to achieve an appropriately shared participation of the public and private sectors.
- Guarantee the quality of available information so that it can be taken into account by those responsible for local (provincial governments or intendancies) and national development).
- Governance is conditioned by a clear definition of what is to be governed, and in consequence by the information available about it.
- That there is a lack of sufficient information regarding knowledge of the hydrologic cycle in general and of surface waters in particular.

#### **Economic Aspects**

- The existence of a close relationship between environmental river management and the economic performance of productive activities was pointed out. Reference was also made to the current tendency in the international marketplace to use food coding prerequisites or the ISO-14000 regulations as non-customs entry barriers to agroindustrial products into international markets.
- In order to satisfy their clients in the markets of the European Union, numerous agroindustrial producers must undertake productive activities under conditions that can be certified as environmentally friendly.