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ECLAC  
Economic Commission for Latin America and the Caribbean

**REPORT ON THE SECOND WORKSHOP FOR MANAGERS OF RIVER  
BASIN AUTHORITIES IN LATIN AMERICA AND THE CARIBBEAN**

Santiago, Chile, 11-13 December 1997

This report has been prepared by the Environment and Development Division of ECLAC. The workshop was co-sponsored by the Ministry of Foreign Affairs of France, Regional Delegation for Scientific and Technical Cooperation for the Southern Cone. This document has not undergone formal editing.

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## **I. ORGANIZATION OF THE WORKSHOP**

### **Place and date**

1. The workshop was organized by the Environment and Development Division of the Economic Commission for Latin America and the Caribbean (ECLAC) and the Ministry of Foreign Affairs of France, Regional Delegation for Scientific and Technical Cooperation for the Southern Cone. It took place from 11 to 13 December 1997 at ECLAC headquarters.

### **Objectives**

2. The central objective of the meeting was to analyse, from the legal, institutional and financial viewpoints, the creation and operation of water authorities and agencies at the river basin level.

3. The expected outcome was to share and systematize knowledge regarding successful experiences in the creation and operation of such bodies, so that they might be reproduced elsewhere in the region. Efforts were also made to reach agreements for elaborating technical specifications and designing procedures to create and operate such entities. This subject is covered by the agreements contained in chapter 18 of Agenda 21.

### **Attendance**

4. Those taking part in the workshop on an individual basis included experts from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, France, Guatemala, Italy, Mexico, Paraguay, Peru, Spain, Uruguay and Venezuela. Also taking part were representatives of the Ministry of Foreign Affairs of France, as members of the Regional Delegation for Scientific and Technical Cooperation for the Southern Cone. The complete list of participants can be found in Annex II.

### **Agenda**

5. The participants adopted the following agenda:

1. Discussion of progress in the creation of river basin authorities in the region, and presentation of the outcome of the international meeting of the International Network of Basin Organizations (INBO), held in Valencia, Spain (2-4 October 1998).

2. Presentation of the outcome of the first workshop for managers of river basin authorities in Latin America and the Caribbean. Systematization of information on river basin authorities.
3. Conditions and options for the financing of river basin authorities, with particular reference to organizational, political, legal and administrative conditions needed for this financing to be made effective.
4. Experience in the creation of river basin authorities and their evolution in the countries of the region.
5. Experience in forms of financing of river basin authorities. Economic and financial justification and legal framework for their financing.
6. Discussion of legal aspects and requirements for the implementation of river basin master plans. Experience of the establishment of river basin master plans. Available conceptual models.
7. Progress, difficulties and strategies in the creation of river basin authorities in Brazil and Mexico, according to their water legislation. Discussion and sharing of experience in the region, with particular emphasis on clarifying the preconditions for creating and operating such bodies (such as political commitment, participation by society, education of users and role of the State).
8. Discussion of experience in creating river basin authorities in countries outside the region. Comparison of experience between Latin America and European countries, particularly France. Proposals for concrete actions.

### **Opening of the workshop**

6. The workshop was opened by Ms. Helga Hoffmann, Director of the Environment and Development Division of ECLAC, who said that although watercourses in the countries of the region showed persistently high levels of pollution, no type of treatment was being carried out. The pollution from those watercourses eventually entered the sea. Attention should be directed not only to fresh water but also to the sea, and particularly to the waters close to the shores of lakes and seas. She recalled that, at the latest Meeting of Ministers of the Environment of Latin America and the Caribbean,<sup>1</sup> pollution of fresh water and seawater had been considered to be the most serious cause for concern. Lastly, she welcomed all the participants, and wished them success in their work.

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<sup>1</sup> The tenth Meeting of Ministers of the Environment of Latin America and the Caribbean, hosted jointly by the Government of Argentina and the United Nations Environment Programme (UNEP), was held in Buenos Aires on 11 and 12 November 1996.

7. Mr. Alain Siberchicot, Regional Adviser for the Southern Cone of the Government of France, said that cooperation from his Government had been providing support to the region in water management at the river basin level since 1992, sharing the experience of river basin authorities in France, which had been operating for a number of decades. Only in relatively recent years had the developing countries become aware that fresh water was a scarce resource. Precisely because of its scarcity, water must be able to be used successively and in various ways by different users on its way from the mountains to the sea, including city-dwellers, factories, farmers and hydroelectric plants. Judging by the experience of France, river basin authorities appeared to be the best institutional means for sound and equitable harmonization of water use.

8. Water management (by means of a river basin authority) was a highly complex issue and included, among others, the agenda items for the second workshop for managers of river basin authorities. Firstly, **financial resources** were needed to enable the activities and functions of a river basin authority to be carried out. Secondly, on its way from the mountains to the sea, water "ignored" the political and administrative frontiers separating municipalities or provinces, and consequently an **institutional structure** was needed so that such authorities could manage the resource jointly. Lastly, **legal** and regulatory changes were required for the sharing and coordination of a scarce resource such as water.

9. All the above was closely linked to the duty to preserve the planet, which was not as large and inexhaustible as was believed. It was a matter of solidarity and equity, issues which could not be separated from the human development so badly needed in the region.

10. Mr. Axel Dourojeanni, Deputy Director of the Environment and Development Division, speaking on behalf of the technical secretariat of the workshop, described the specific objectives of the workshop and its methods and organization of work. Basic discussion documents were available for each topic (see annex IV), and the latter would be discussed in three subject groups on **institutional**, **financial**, and **legal** aspects of river basin authorities. A rapporteur had been assigned to each working group. He stressed the importance of achieving the objectives of the workshop.

11. He emphasized the collaborative efforts of Mr. Nicolas Boursin, Regional Expert in Environmental Issues of the Regional Delegation for Scientific and Technical Cooperation for the Southern Cone, and of the Agência Técnica da Bacia do Rio Paraíba do Sul, which had enabled the workshop to benefit from the participation of officials from the private and public sectors who were high-level experts in the field. Most of the participants held or had held senior positions, often of a pioneering nature, in the creation and operation of river basin authorities in Latin America and Europe.





## II. BACKGROUND TO THE WORKSHOP

12. The meeting continued the discussion of sustainable development and management of river basins begun at the first workshop for managers of river basin authorities (4-6 December 1996, Rio de Janeiro, Brazil), organized by the Agência Técnica da Bacia do Rio Paraíba do Sul, and sponsored by the Ministry of Mines and Energy and the Ministry of the Environment, Water Resources and the Amazon Treaty Region of Brazil, as well as the Ministry of Foreign Affairs of France, Regional Delegation for Scientific and Technical Cooperation for the Southern Cone; support was also provided by D. B. Environnement, the Comité de Integração da Bacia do Rio Paraíba do Sul (CEIVAP), and ECLAC. At this second workshop, the legal, institutional and financial aspects of creating and operating river basin authorities were thoroughly analysed, with a view to systematizing positive and negative experiences and facilitating their applicability in the region. Discussions centred on the elaboration of technical specifications and the design of procedures for creating and operating entities for integrated water management at the river basin level.

13. Although the concept of the river basin had been applied little in water management in the countries of the region, some progress was being made in that direction, and there was widespread interest in creating and operating river basin authorities to manage the multiple uses of water and to resolve disputes arising out of its development. The revival of the notion of the river basin as the most appropriate unit for water management was mainly due to the fact that the river basin was the level at which the best possible integration could be achieved among all those having an interest in water management, whether in the private or public sector, and whether they were interested in the productive use of water or working for its conservation. In addition, water management at the river basin level was increasingly considered to be the most appropriate means of absorbing the environmental costs of the development and use of water resources. Another issue was to determine in practical terms how water management systems were to be set up or how existing systems could be improved.

14. The issue of river basin management had evolved considerably in the region, and some countries had acquired useful experience. However, the lack of conceptual clarity, systematization and conceptualization of those experiences was an obstacle to the exchange of ideas and experiences, the sharing of available knowledge and the formulation of policies and laws in the area. For this reason, the participants emphasized the urgent need for comparative studies to systematize and analyse the experience of the Latin American and Caribbean countries with the creation of river basin authorities, as well as with mechanisms that were or could be used for financing activities in the common interest of users in a given river basin, with a view to their long-term sustainability.

15. The Government of France through its Ministry of Foreign Affairs contributed greatly to the realization of the workshop. Its cooperation agencies, particularly the Regional Delegation for Scientific and Technical Cooperation for the Southern Cone, and the Agência Técnica da Bacia do Rio Paraíba do Sul of Brazil, and the French experts seconded to the region, collaborated in organizing and developing the workshop. By helping to meet the costs of experts from the Southern Cone, they also made it possible to extend invitations to other experts from the region.
16. Both ECLAC and the Government of France maintained a consistent interest in the management of multiple water uses at the river basin level, believing that effective water management was the key to achieving integrated environmental management. The creation of water management authorities at the river basin level was one of the most suitable choices for managing and resolving the growing number of conflicts over multiple water use. The holding of the workshop was an additional sign of the efforts under way towards creating and operating such bodies in the countries of the region.
17. Important progress had been achieved in conceptualizing the subject in the documents, "Políticas públicas para el desarrollo sustentable: la gestión integrada de cuencas" (LC/R.1399, 21 June 1994) and "Creación de entidades de cuencas en América Latina y el Caribe" (LC/R.1739, 10 July 1997), in the systematization of available information on water resources management in the region and in the classification of approaches to the issue of management at the river basin level in Latin America and the Caribbean.
18. The Regional Delegation for Scientific and Technical Cooperation for the Southern Cone of the Ministry of Foreign Affairs of France, together with D. B. Environnement, through the research of its experts (especially Mr. Dominique Berton and Mr. Nicolas Bourlon), had done important work in compiling and classifying<sup>2</sup> the great majority of initiatives in management at the river basin level in the countries of the region.

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<sup>2</sup> "Catalogue de présentation des dispositifs de gestion de l'eau par bassins en Amérique latine", Ministry of Foreign Affairs of France, Regional Delegations for Scientific and Technical Cooperation for the Southern Cone, and ECLAC, with support from D. B. Environnement and the Agência Técnica da Bacia do Rio Paraíba do Sul, Brazil, 1996. "Développement durable et gestion des bassins hydrographiques. Conception et mise en place d'agences de bassin en Amérique latine", University of Rouen, Faculty of Science and Technology, Ecology Laboratory. University of Rouen, doctoral thesis by Nicolas Bourlon, 1997.

### III. GENERAL REMARKS

19. It was generally agreed that there was a need to harmonize concepts as to what constituted integral management of water resources at the river basin level. Often, specific areas were overemphasized at the expense of a more integral approach. There were very few professionals with overall training in the field. The training of professionals was thus of vital importance, requiring not only a long period of study and practical experience, but also a more integrated approach covering all important aspects of water resources management at the river basin level.

20. The pioneering work of ECLAC was recognized, as was the major contribution of the Government of France<sup>3</sup> in promoting the training of water management professionals.<sup>4</sup> Emphasis was also placed on progress in user participation in Brazil through river basin committees and the newly created river basin councils of the National Water Commission of Mexico.<sup>5</sup> Mention was also made of a major contribution in horizontal cooperation: the project currently being implemented by the Government of Chile in the Bio-Bio river basin, drawing on the experience of Venezuela.

21. It was agreed that lack of clarity regarding the roles, objectives and functions of river basin authorities was the greatest obstacle to productive dialogue and to the sharing of experience among experts in that area, and the most important factor that delays creation or hampers operation of such bodies.

22. To begin with, standard definitions were needed for the concepts and terms generally used in referring to water resources management at the river basin level. This task had been undertaken in part by ECLAC with the publication of the report, "Políticas públicas para el desarrollo

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<sup>3</sup> Since 1991, the Government of France has carried out projects on different scales in the area of water management at the river basin level in various countries of the region: Argentina, Bolivia, Brazil, Chile, Costa Rica, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela. For further information, see "Catalogue, participation française dans les pays d'Amérique latine", Ministry of Foreign Affairs, Regional Delegation for the Southern Cone, Embassy of France in Chile, 1997.

<sup>4</sup> With the cooperation of the German Agency for Technical Cooperation (GTZ) and the Government of Germany, ECLAC has formed a working group of Latin American experts, which analysed the situation and produced proposals for training in integrated water resources management. See "Training in water resources management in Latin America and the Caribbean: analysis and proposals" (LC/G.1580) and "Model programmes for training water resource administrators in integrated management" (LC/G.1670).

<sup>5</sup> The functions of the river basin councils include: support for regulating user participation, conciliation in water disputes, and coordinating and harmonizing works and actions. "Presentación de Consejos de Cuenca", National Water Commission, Mexico, January 1997.

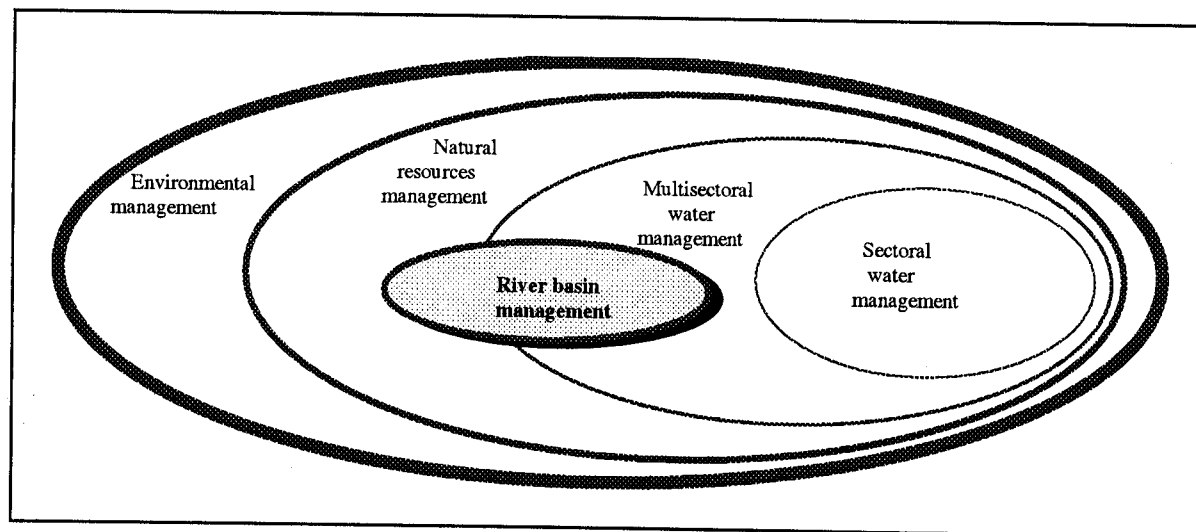
sustentable: la gestión integrada de cuencas” (LC/R.1399). The classification prepared by ECLAC was recognized as useful for explaining different approaches to actions at the river basin level (see boxes 1 and 2).

Box 1  
**CLASSIFICATION OF MANAGEMENT ACTIVITIES IN RIVER  
BASIN MANAGEMENT**

Management stages	River basin management objectives			
	Utilization and integrated management	Utilization and management of all natural resources	Utilization and management of water only	
			Multisectoral	Sectoral
	(a)	(b)	(c)	(d)
(1) "Preliminary" stage	Studies, plans and projects (River basin system)			
(2) "Intermediate" stage (investment)	River basin development (desarrollo integrado de cuencas, desarrollo regional)	Natural resources development (desarrollo o aprovechamiento de recursos naturales)	Water resources development (desarrollo agropecuario de recursos hídricos)	Water resources development (Drinking water, irrigation, drainage, hydroelectric power)
(3) "Ongoing" stage (operation and maintenance, management and conservation)	Environmental management (gestión ambiental)	Natural resources management (gestión/manejo de recursos naturales)	Water resources management (gestión/administración del agua)	Water resources management (Administration of drinking water, irrigation, drainage, hydroelectric power)
		Watershed management (manejo/ordenación de cuencas)		

Source: Prepared by Axel Dourojeanni, ECLAC, 1997.

Box 2  
**RANKING OF RIVER BASIN MANAGEMENT ACTIVITIES**



Source: Axel Dourojeanni, “Conceptos para la gestión del agua: temas en debate”, 1997 working document No. 1, second workshop for managers of river basin authorities in Latin America and the Caribbean, Santiago, Chile, 11-13 November 1997.

23. It was also concluded that for the creation and operation of river basin authorities, and for water resources management in general, a good system of hydrological, economic and social information at the river basin level was essential; few of the countries of the region had such systems.

24. It was recognized that, although **in recent years there had been increasing numbers of publications and meetings on water resources management in the countries of the region**, much of that information was scattered, difficult to obtain, of limited usefulness and often misplaced. There was therefore much to be done in terms of organizing, classifying, systematizing and summarizing the information, after which it should be updated periodically.

25. It was agreed that it would be very useful to compile the recommendations and conclusions of the most important meetings which had been held on water management, at least since 1970. There should be case studies to describe the state of the art ("base lines") in various aspects of integrated water resources management. ECLAC was doing important work as a major centre in the region for organizing, classifying, systematizing and synthesizing information on the **integrated water resources management**.

26. The participants said that the basic documents provided in advance of the meetings of the working groups (see annex IV, list of documents) were highly influential. It was of vital importance that such documents should be available, particularly for short meetings such as the current workshop, because they had facilitated communication among the participants, helped to channel discussions towards planned objectives and enabled swift progress to be made by means of shared terminology, definitions and concepts.

27. An aspect which was given particular emphasis by the participants was the idea of preparing "frames of reference". A list of frames of reference was proposed, with varying contents and degrees of depth, that would serve to facilitate the creation and operation of river basin authorities for Latin America and the Caribbean. Several participants offered to collaborate in elaborating and developing the areas in which they had the greatest experience. The table below provides a systematic description of the suggestions made by the participants with a view to elaborating frames of reference to support the creation and operation of river basin authorities (see box 3). The information shown has been summarized, because the recommendations put forward were of a very general nature.

28. Lastly, there was agreement on the need to fulfil the commitments entered into at the first workshop for managers of river basin authorities (Rio de Janeiro, December 1996), where the participants had undertaken to follow up the agreements reached. To begin with commitments had been made to prepare materials for future meetings, and to systematize and organize the bibliographic material prepared for the first workshop.<sup>6</sup>

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<sup>6</sup> A. Dourojeanni, "Políticas públicas para el desarrollo sustentable: la gestión integrada de cuencas", ECLAC and the Inter-American Center for Environmental and Territorial Development and Research (CIDIAT), Mérida, Venezuela, 1994; "Sistema VIVA: asistencia a la gestión integrada de las

29. In addition, a series of topics had been identified, which were to be developed by some of the participating countries. The following table describes the responsibilities emanating from the first workshop.

<b>Areas of responsibility</b>	<b>Southern Cone countries</b>	<b>Andean and Caribbean countries</b>	<b>Coordinator</b>
Analysis and planning	Brazil	Venezuela	Nicolas Bourlon
Evaluation and formulation of management projects for small catchment areas	Uruguay	Peru	Axel Dourojeanni
Management of transboundary river basins	Paraguay	Bolivia	Axel Dourojeanni
Financing	Chile	France	Dominique Berton
Legislation and institutional structure	Argentina	Ecuador	Pablo Tosin
Training, environmental education, user participation and human resources development	Brazil	Venezuela	Pablo Tosin

30. In respect of these tasks, it was agreed that the coordinating country was to gather information from the other participating countries in order to prepare a preliminary outline. The Agência Técnica da Bacia do Rio Paraíba do Sul was to act as secretariat and put out the documents. It was also agreed that exchanges of human resources would take place.

31. Each country representative would be responsible for identifying a working group within the country to undertake the extensive work involved in developing the topics.

32. Lastly, participants learned that an official offer had been made by the Senate of Argentina, represented by Senator Ana M. Peña de López, Chair of the Water Resources Commission, to organize the third workshop for managers of river basin authorities. It has been proposed that a preparatory event at the national level should be held in the city of Mendoza.

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cuencas hidrográficas" (DBE); "Catálogos sobre sistemas de gestión del agua en América Latina", Ministry of Foreign Affairs of France, Regional Delegation for Scientific and Technical Cooperation for the Southern Cone and ECLAC; and documents presented at the first workshop.

## Box 3

### SUGGESTED FRAMES OF REFERENCE FOR GUIDANCE IN THE CREATION AND OPERATION OF RIVER BASIN AUTHORITIES

Subject areas	Level of interest
<b>General aspects</b>	
<ul style="list-style-type: none"> <li>Glossary and definitions of concepts and terms in connection with the creation and operation of river basin authorities.</li> </ul>	General
<ul style="list-style-type: none"> <li>Inventory of human resources training programmes on the subject of river basins in the region.</li> <li>Directory of individuals and bodies involved in the issue of river basins in the region.</li> </ul>	Specific
<b>Political and legal aspects</b>	
<ul style="list-style-type: none"> <li>Classification of approaches and systematization of experiences, both positive and negative, in the establishment of river basin authorities and in water resources management in general.</li> <li>Creation and operation of river basin authorities (conditions for their creation and operation; procedures for their creation; options for their legal status and powers; roles, objectives and functions; participation and organizational structure; internal operation and regulations; financing; relations with existing bodies, particularly local government, and the need to protect their operation from external factors; etc.).</li> <li>Participation of users and other actors in river basin authorities (composition of river basin authorities; democratic management; dispute settlement, conciliation and consensus-building among different interest groups; strategies for participation, strengthening of users' groups, etc.).</li> <li>Formulation and implementation of river-basin master plans (legal status, methodology, contents, applicability, etc.).</li> </ul>	General
<ul style="list-style-type: none"> <li>Water use rights, water markets, and other means of water allocation.</li> <li>Training (subject content) in management of multiple uses of water at the river basin level.</li> </ul>	Specific
<b>Economic and financial aspects</b>	
<ul style="list-style-type: none"> <li>Sources of financing for river basin authorities and their institutional and legal implications (systematization of experiences, self-financing, user contributions, government contributions and subsidies, payment capacity, etc.).</li> <li>Economic, financial, social and environmental arguments for the creation of river basin authorities.</li> <li>Charges for water use (options, methods, organization, calculation of charges, etc.).</li> </ul>	General
<ul style="list-style-type: none"> <li>Mechanisms, policies and instruments for the economic and financial management of river basin authorities.</li> </ul>	Specific
<b>Technical aspects</b>	
<ul style="list-style-type: none"> <li>Information systems for decision-making (geographic information systems, etc.).</li> <li>Systems for monitoring water resources and river basin ecosystems.</li> </ul>	General
<ul style="list-style-type: none"> <li>Water legislation oversight and enforcement.</li> <li>River basin surveys, evaluation and analysis.</li> <li>Formulation of investment programmes and projects.</li> <li>Water resource inventories (methods, frequency, etc.).</li> <li>Methods for elaborating water-resource management plans.</li> <li>Land-use planning and coastline management, particularly of estuaries.</li> <li>Monitoring and control of water pollution (economic instruments).</li> <li>Water supply and quality of life (methods for calculating current and future demand).</li> <li>Technology for management of water resources (methods, programmes and monitoring).</li> </ul>	Specific
<ul style="list-style-type: none"> <li>Human settlements, urban management and river basin management (municipal participation in the management of water resources).</li> <li>Tools for education, training and communication in the area of water resources.</li> </ul>	
<b>Social and cultural aspects</b>	
<ul style="list-style-type: none"> <li>Methods for promoting "water awareness" (outreach activities, education, training, etc.).</li> </ul>	General
<ul style="list-style-type: none"> <li>Surveys of public perceptions on water-related issues.</li> <li>Involvement of economically disadvantaged communities in the management of water resources.</li> </ul>	Specific





#### IV. CONCLUSIONS AND RECOMMENDATIONS

33. The following recommendations represent a summary of the most important points raised by the experts who attended the workshop and took part in the three working groups, as well as the outcome of the general debates.

34. It was observable that the main subjects of the workshop, namely, the legal, institutional and financial aspects of bodies involved in water management at the river basin level, cropped up in all the working groups regardless of the assigned topic. Those subjects were invariably raised in the discussions and found to be relevant to the specific topic dealt with in each of the working groups.

35. Although the three working groups covered separate subject areas (institutional, financial and legal), it is clear that each of them made recommendations involving all three areas to a greater or lesser extent. ECLAC provided to participants a list of documents which served as the basis for discussions in each of the working groups (see annex IV).

##### **Conclusions and recommendations on legal aspects of river basin authorities**

36. In the reformulation of water legislation it is essential to take into account the positive aspects of past laws, and to incorporate fundamental principles, technological progress, the most up-to-date approaches and experiences in the field, particularly water resources planning, the river basin as a unit for the planning and management of the resource (multisectoral commissions) and the collection of hydrological data.

37. It is vital to promote **active and responsible involvement of the various actors in the operational stage of water resources management**. Security should be provided for investors, but it must be borne in mind that privatization, while it can be beneficial, **cannot reconcile social and environmental interests in the absence of appropriate legislation and monitoring**.

38. It is essential for new water legislation to include a statement of reasons clearly **setting forth the basic principles underlying new provisions or amendments; legal texts should cover essential elements only, leaving technical specifications to be covered by regulations**.

39. When new legislation is being drafted, it is suggested that those involved should be guided by the concept of "framework legislation" interrelated with other legislative texts; the legislation

should be built on broad, flexible criteria, to facilitate its effective implementation and ongoing adaptation to situations that may arise in different parts of the country over the course of time.

40. Current trends in **water legislation** suggest that the texts should expressly provide for the formulation and implementation of master plans for integrated water resources management at the regional level or for groups of catchment areas, taking the river basin as the planning unit. This avoids leaving the matter open to improvisation or to arbitrary decision by water authorities, which would obstruct continuity of policy over time.
41. Legislation providing for **integral master plans should establish their legal status, the process required for their approval, the minimum prerequisites for their implementation** and their immediate and longer-term objectives and assign responsibilities for their application.
42. Advance assessment of environmental impact should be a structural part of modern legislation, as a tool for minimizing and managing undesirable externalities, which, once they come about, are often irreparable, at least in the short term.
43. The rules and regulations applied to water resources must put greater emphasis on preventive measures, such as promotion, guidance and education on the part of the State, than on detection and punishment of offenders. Clear rules must be set out; if those were not complied with, then it would indeed be a case for sanctions.
44. Modern legislation should specify the need to determine the value, price, and scales of charges for water, taking into account the fact that water is not only a resource and a socio-environmental factor, but also an economic good.
45. In determining the economic value of water as a production input, the market can be used as a mechanism for allocating rights and financial costs. However, the principle is not absolute, and this must be taken into account, especially for the allocation of rights. The market for water-use rights must be regulated by the State. The granting of water-use rights, and dealings in those rights, should be subject to conditions such as effective and beneficial water use. The working group found the Chilean experience to be a case in point, since it had begun with an unrestricted market and attempts were currently under way to reverse the initial process and achieve a regulated market.
46. Legislation should provide for the creation of a river basin authority endowed with sufficient institutional and financial autonomy to collect the necessary funds for proper management of the resource. It should be a strong, stable and representative body, but its operating staff should be small. It should have well qualified people in technical, legal and economical areas, and a non-bureaucratic structure.

47. The water management authority is generally created as an autonomous public entity; however, a mixed or semi-public entity might be considered, combining the strength of public law with the flexibility of private law.

48. An entity responsible for river basin management should not, at least at the early stages, attempt to manage all natural resources. The basic approach should be to create **“water management entities”** rather than **“river basin entities”**; they should be in charge of managing multiple water use and maintaining water quality. Such an entity may evolve, gradually taking on additional roles. In any case, experience has shown that if water can be properly managed, this will solve most of the environmental problems existing in the river basin area.

49. One difficulty pointed out by the members of the group is that the entity created by law is usually described very vaguely in terms of its characteristics and responsibilities. The legal framework within which the river basin authority is created should therefore include a terminological glossary, to avoid arguments over interpretation, and a list of powers and responsibilities, setting forth specific and well-determined objectives. However, to avoid inflexibility, the list of powers and objectives should be provisional and subject to change; and indicative rather than limitative.

50. The group discussed the possibility of special agreements among the actors involved, as a basis for the formation of the river basin authority; this would apply particularly in countries that have a federal system of government. In this regard, attention was drawn to the Colorado River treaty in the United States of America, and to the Inter-Agency Committee for the Rio Colorado (COIRCO), which grew out of a treaty signed by five Argentine provinces for the management of the river. These treaties describe in detail the objective to be achieved. Countries with federal structures, where the states which are parties to such agreements are autonomous, require their federal Governments to create a law establishing national water policy objectives and providing for river basin authorities to be set up as an excellent means for regional and decentralized management of water resources.

51. Considering that water management entails managing conflicts, the working group agreed that mechanisms should be created for dispute prevention and settlement, conciliation, harmonization and other similar negotiations, to avoid cumbersome and lengthy court proceedings. One possibility considered was that the river basin authority could incorporate a sort of specialized tribunal designed for swift and impartial settlement of disputes among water users. A good example of such a body is the well-known Tribunal de la Vega de Valencia (Tribunal for the Plain of Valencia), in Spain.

52. Each country should endeavour to elaborate a set of technical and administrative standards to provide guidance for water management at the river basin level, including frames of reference for properly approved studies, work schedules and other uniform work rules, so that the quality of work in a given country can be more consistent and the work can be carried out in accordance with a comparable set of procedures.

### **Conclusions and recommendations regarding financial aspects of river basin authorities**

53. There are no river basin authorities in the countries of Latin America and the Caribbean comparable to those in France, where they function as a bank for the financing of activities in the common interest of water users within the river basin, in order to ensure its long-term sustainable development. However, some progress in that direction has been observed in the countries of the region. For example, many State and quasi-State bodies already exist and are operating on the basis of a philosophy of water management at the river basin level, an aspect of the approach inspired by the creation of river basin authorities in France.
54. The French model of the river basin authority is not the only one available, and there are in fact various models for the creation, financing and operation of such bodies. In the countries of Latin America and the Caribbean there are a few organizations performing the functions of a river basin authority. From that point of view, existing bodies should not be replaced, but adapted, strengthened and made financially sustainable in the long term. Countries pass through different stages in their development, each one having its own objectives in terms of water management; consequently, the structure, financing sources and other relevant functions of river basin authorities should be adapted in accordance with the goals to be pursued at each of these stages and the situation prevailing at the time.
55. Water management models, including those for river basin authorities and for their financing, cannot be exported or transferred inflexibly from one country to another, but must be adjusted according to local needs. However, the principles underlying a particular model for water management can be adopted, and the model adapted it according to the needs and conditions in each country, region and river basin. Nonetheless, consideration could be given to the French model as a reference point for actions related to this subject.
56. In practically all countries of Latin America and the Caribbean, water users are willing to pay for marketable water-related services, such as drinking water supply, and many countries do in fact have a long history of payment for such services. Furthermore, in some countries or regions there is growing acceptance of the idea of paying for water use or for activities which cause externalities, such as water pollution, and using the funds collected to finance water management activities.
57. The main weaknesses in the system of financing of the water sector in the countries of Latin America and the Caribbean are not solely related to charging for water use, but also have to do with deficiencies in supervision and pollution control, water resources conservation, and monitoring the effects of extreme natural and other phenomena.
58. In many of the countries of the region, major weaknesses in existing legislation make it difficult to establish sources of financing which are clear, transparent and sustainable in the long term.

59. Some countries of Latin America and the Caribbean have already implemented or are implementing systems of charges for water use at the national, regional or river basin level, and there are similar proposals in other countries. Also, while there are no systems of charges for water use in most of the region, water management systems in many countries already incorporate the elements that would be needed for implementation of such systems.

60. It is more efficient to meet the need for financial resources to support river basin authorities, enabling them to optimize water resource management, than to provide the same resources in order to alleviate the consequences of a negative impact caused by the lack of such management.

61. All information on water resources should be concentrated in a single independent data collection centre, from which information can then be obtained.

### **Conclusions and recommendations on institutional aspects of river basin authorities**

62. One of the most important aspects is the need to methodically order, edit, publish and distribute a reference guide on river basin management ("The Latin American Experience"), in order to disseminate information on multisectoral water management processes and methods and to make water resources a central theme of environmental management.

63. The workshop also reaffirmed the need to design, administer and implement a plan to promote and strengthen river basin management entities in Latin America and the Caribbean.

64. In order for a multiple-use water management system at the river basin or basin-system level to function satisfactorily, each user sector —irrigation, drainage, drinking water and hydroelectric power, among others— must be capable of correctly operating and maintaining its own water control systems. For example, water resources management for agriculture, in irrigation and drainage districts, should function as an enterprise providing water services to the farmer. It is recommended that farmers contract for and organize such services if they want stable arrangements for the operation, maintenance and repair of waterworks used in irrigation and drainage, as well as groundwater management. Farmers should take direct responsibility only for small-scale works which they can operate, maintain and repair either individually or on a communal basis.

65. Each user sector should build and operate monitoring stations for gathering data on the quality and quantity of water resources to the extent that they require such information to operate their systems. However, it is vital that all this information be collected on a daily basis by a "water resources clearing house". The general public should have unrestricted access to the information (upon payment to cover the basic costs of obtaining it), which should as far as practicable be published regularly in some national or international forum (journals, Internet, or other). The population should be informed on a daily basis about air and water quality.

66. Firms hired by, and reporting to, the water management entity should be responsible for maintaining, operating and repairing large shared water systems that are built by the State and have multisectoral objectives and uses. This is equally valid when it comes to building river basin management works, maintaining natural channels, and river bank conservation. Generally speaking, the water management entity should operate as a "water municipality", assuming responsibility for more important infrastructure, whether by taking charge directly or awarding concessions for the operation, maintenance and repair of facilities to private firms; the entity should also be responsible for implementing environmental protection measures. The water management entity should be at the service of users of water resources and the channels.

67. Special care should be taken to ensure that a water management entity does not replace the functions of existing public or private organizations and institutions with functions associated with water resources management. Rather, such an entity should strengthen the operational capacity of the "institutional framework" that it requires in order to perform its functions (policing, universities and associated laboratories, municipalities, public institutions, consultancy firms and non-governmental organizations).

68. It is generally recognized that water is vital to human life and the environment, and that it plays an extremely important economic role; there also needs to be recognition that water resources management cannot be the responsibility of workers who are poorly remunerated and lack the resources necessary to perform their duties. Such a state of affairs leads inevitably to the mismanagement of water resources and huge economic and environmental losses that generally have yet to be quantified; for that reason, the population is not aware of the costs that are imposed on its activities as a result of failure to improve water management systems and to reduce disputes caused by misuse and the effects of extreme natural phenomena. The people of the region tend not to complain much about severe water shortages and the effects of extreme phenomena, showing a poignant fatalism that excuses inefficiency, improvisation and lack of foresight.

69. Departments or secretariats in charge of water resources should not come under the authority of a user sector; nor is it advisable to separate the construction of waterworks by the State from the technical, regulatory and operational aspects of water systems. It is also important, during the phase of investment in large waterworks for multi-purpose use, to begin setting up the organization that will be responsible for multi-purpose river basin management rather than waiting until the project is completed before creating it, or simply transferring buildings and obsolete equipment to it.

70. Establishing a water resources department within a natural resources institute is an appropriate basis for undertaking scientific and environmental studies on water supply from the standpoint of quantity and quality, however, it does not provide the appropriate conditions for the department to set itself up as the national water resources authority. If such an institute comes under the agricultural sector, it may take responsibility for issuing technical standards for the operation of irrigation districts, since that falls within the agricultural sector's area of responsibility.

71. A national water resources department that performs technical and regulatory functions of a multisectoral nature should not be placed under the authority of a user sector such as the agricultural sector. That would make it both judge and plaintiff, and its authority would be diminished. In Peru, for instance, the water resources authority would be strengthened were it answerable to the Prime Minister. In order to organize river basin authorities, again referring to the case of Peru where the "technical administrator of the irrigation district (ATDR)" acts as the "water resources authority", it is advisable to keep this structure in place only for the administration of irrigation districts.

72. It is therefore advisable to create a multisectoral supreme water resources authority with responsibility over various river basins without any changes to the functioning of the existing irrigation districts. This water resources authority should consist of a high-level expert, well paid and well equipped, with a permanent technical secretariat comprised of qualified staff; the authority should have a mandate to plan and execute initiatives in the area of multi-purpose water management, oversee pollution control and in general to enforce the law. He or she should be a high-level government appointee, answerable to the Prime Minister; and he or she should be above pressures of a political, local, regional or national (i.e., that occur with a change of government) nature. Ideally, appointments would run a period of no less than 5 years, and be renewable.

73. It is therefore vital that a new water resources authority at the river basin or river-basin system level be neither answerable to, nor appointed by, a user sector such as the agricultural sector. Rather, it should be answerable to a multisectoral body. The authority should in the first instance be accountable to a functional directorate made up of 10-12 members at most, representatives of government, large users and civil society belonging to the river basin. The staff of this small directorate should be remunerated and should hold meetings no less than twice a month. The directorate should in turn report to a river basin committee that meets annually and is made up of a large number of representatives from all user sectors; the main functions of this committee would be to appoint the members of the directorate and approve annual or biennial plans and budgets drawn up by the river basin authority.

74. The nature and roles of a water resources entity at the river basin level should be transparent and aimed at providing services to water users in such a way as to encourage the appropriate use of water from both the quality and quantity standpoints, minimizing the potential for disputes among users. Such an entity should not be assigned conflicting roles (e.g., to stimulate investment and at the same time enforce environmental laws), nor should its roles and functions supplant those of existing organizations. The user should be clearly informed as to the use of the economic resources he contributes to the entity. It is particularly important to determine the relationship between the investments (costs) required for the optimum management of water resources and the profits (benefits) it yields. This assessment should determine the way in which costs and benefits are distributed between users and non-users. Transparency in the social, economic and environmental assessment of such authorities' actions is vital if civic participation is to be encouraged.

75. It is advisable to promote pilot projects aimed at setting up and initiating river basin management entities, such as those conducted in Brazil and Mexico. It is recommended that the experience gained in these projects should be analysed systematically, in order to facilitate greater dissemination of the knowledge acquired.
76. The basic charge levied to fund a water management entity should be derived from a fixed, on-going contribution by water users and all the inhabitants of the river basin area. It will only be possible to levy a charge for pollution once systems are in place for directly or indirectly measuring the phenomenon. Since that may entail a delay of 10 years or more, it would be advisable to start with a simple tariff system. However, it is important to include revenues from charges on other activities that give rise to externalities, such as forestry, agriculture and mining. It should be possible to learn from Latin America's experiences in implementing tariff systems concerning utilities, drinking water and energy, extending them to charges for multi-purpose water management.
77. The workshop recommends that documents be published and videos and other more interactive materials be prepared for use with computers. Such items would provide well-structured information on environmental damage to freshwater bodies and coastal areas, setting out the links between these phenomena and society's current ability to meet the challenges involved in recovery, clean-up and prevention of further deterioration. It is vital that information on environmental damage and the current situation should be provided daily and be accessible to all.
78. For reasons outlined above, the workshop deems it essential to create entities or organizations responsible for sound multi-purpose water resource management at the river basin level. In so doing, it is important to avoid any tendency to create such authorities by decree, to staff them with civil servants only and not to provide the security of on-going basic funding. Generally speaking, such initiatives have not met with the desired success, many not even meeting once. That is why it is important to encourage and support private involvement in multi-purpose water resource management at the river basin level, especially for uses such as drinking water and sanitation, irrigation, drainage and hydroenergy. Participation by users, the State and civil society in water management authorities encourages self-regulation by the water users themselves and reduces the need for government intervention.
79. Again for the reasons cited above, the workshop recommends correcting any shortcomings in current water-related legislation, and any other legislation providing for the creation of water management entities that fails to identify on-going funding sources. The process by which water management entities are created should not be uniformly applied throughout any given country, but rather should be adapted to the specific conditions of each river basin.
80. The workshop also recommends that multilateral aid agencies should not limit their activities to financing waterworks investment projects, but rather expand them to support the creation of water management entities at the river basin level. The term "projects" only takes into account a portion of all initiatives, generally overlooking those carried out by the informal sector.



81. This support should take the form of the preparation of teaching materials, formulation of strategies for coordinating the actions of water users and setting up and establishing "water resource centres" at the river basin or river basin-system level. Furthermore, banks should demand that, in parallel to the construction of waterworks, staff and equipment should be prepared for the tasks of managing the river basin and operating and maintaining the water systems once built.

82. Lastly, it is vital that renewed emphasis be placed on teaching programmes devoted to water resources management, and in general on all programmes relating to water resources. At present, water resource education and management programmes have been relegated to a relatively minor role compared to programmes focusing on "integrated environmental management". Environmentalists generally lack the specialization and depth required to implement specific actions, as opposed to merely denouncing irregularities.

83. In Latin America and the Caribbean, teaching capacity in the area of water resources has declined compared to the situation that existed 30 years ago. Hence the need to give fresh impetus to training in water resource management, at both the professional and the technician and water user levels. Training should encompass technical as well as legal, economic and administrative aspects.



**Annex I****BACKGROUND AND RATIONALE**

**Organized by:** Environment and Development Division of ECLAC and Ministry of Foreign Affairs of France, Regional Delegation for Scientific and Technical Cooperation for the Southern Cone.

**Place and date:** Raúl Prebisch Conference Hall, ECLAC headquarters, Santiago, Chile, 11-13 November 1997.

**A. GENERAL FRAMEWORK AND OBJECTIVE OF THE MEETING**

River basin management relates to the conduct of coordinated actions by humankind, taking into account their effects on the natural system formed by the river basin and the dynamics of that system.

There is widespread interest in Latin America in creating and operating water resource authorities at the river basin level, to manage multi-purpose water use and to resolve conflicts arising out of water resources development. This interest raises practical issues as to how to organize these management systems or improve existing ones.

The purpose of the present meeting is to analyse legal, institutional and financial matters relating to the creation and functioning of river basin authorities, so as to systematize knowledge regarding successful experiences, so that they can be reproduced elsewhere in the region.

Preference will be given to contributions that lead to the formulation of technical specifications and the design of procedures for creating and operating authorities for integrated water management at the river basin level.

**B. ARGUMENTS IN SUPPORT OF THE NEED TO CREATE WATER MANAGEMENT AUTHORITIES AT THE RIVER BASIN LEVEL**

1. Consolidation of an independent administrative structure able to ensure coherent, participatory and transparent management of all water resources;
2. Prevention of further deterioration in the state of water resources and protection and improvement of the condition of aquatic ecosystems, and with respect to their water resource requirements, of land ecosystems;

3. Promotion of sustainable development of water resources based on long-term planning of the use of available resources;
4. Ensuring an adequate supply of good-quality water for human consumption and economic activities;
5. Prevention and mitigation of the effects of extreme phenomena such as floods and droughts;
6. Ensuring participation and consultation of water users and the general public with respect to the adoption of standards for shared use;
7. Establishment of a proportional contribution of qualitative and quantitative uses of water resources that provides for recouping the cost of operating and maintaining the shared water system;
8. Establishment of lines of credit and, possibly, subsidies to help the private sector and lower-income sectors make better use of water resources;
9. Creation of a consistent framework for municipal action in the area of water resources policy, integrating municipal policies for sustainable water resources management.

### **C. PROPOSED SUBJECTS FOR DISCUSSION**

1. Analysis of the results of the first workshop for managers of river basin authorities in Latin America, held in Rio de Janeiro, from 4 to 6 December, 1996.
2. Evaluation of the conclusions of the General Assembly of the International Network of Basin Organizations, held in Valencia, Spain, from 1 to 5 October 1997.
3. Evaluation of the situation with respect to the creation and operation of authorities for integrated water management at the river basin level in the region and classification and cataloguing of river basin authorities in Latin America.
4. Analysis of progress in creating river basin agencies and committees in Brazil; charges for and planning of water use and planning in Brazil (Reference: application of Brazilian Federal Law No. 9433 of 8 January 1997).
5. Analysis of progress in setting up river basin councils in Mexico (Reference: Section II of the National Water Act: Water Management) - water resources planning.

6. Experiences, both positive and negative, in the creation and functioning of water authorities at the river basin level in Latin America that are not protected by a national water resource law (Argentina, Chile, Colombia, Ecuador, Peru, and other countries in the region).
7. Water resources legislation currently in preparation, the consideration of water management at the river basin level, methods of financing, and legal aspects of planning.
8. Support systems for decision-making in river basin management.
9. Legal aspects of the formulation and application of plans for water resource management at the river basin level (master plans) and how those aspects affect their usefulness for the functioning of water management authorities at the river basin level.
10. Separation of the functions of a water resources policy: administrative management (promotion and monitoring), participatory planning, financing, responsibility at the use management level —clear definition of the basic rules is an essential principle.
11. Privatization or private involvement in the management of water services in Latin America (drinking water, hydroelectric power, irrigation, etc.) and its relationship with the participation of private-sector actors in water management authorities at the river basin level.
12. Approaches to financial aspects of water management authorities at the river basin level, in relation to the existing institutional framework in each country: what type of legal entity is appropriate for collecting charges and best able to manage appropriately the resources gathered by the water entity in each country?
13. Relationship between allocation of water rights and water markets, and water authorities at the river basin level: how could water authorities at the river basin level improve the functioning of water markets, in such a way as to provide for suitable allocation of rights, supply of water resources, authorization of transactions that do not affect third parties, and consideration of environmental factors with a view to protecting water resources, etc.
14. Diversity of actors and ecosystems in river basins in Latin America and the way in which they affect the creation of water management authorities at the river basin level: legal and sociocultural aspects and relative governance. The need for them to be created gradually and the need for participation by the State, private sector and civil society. Types of participation envisaged for those actors.
15. Minimum standards of scientific and technological support to sustain the legal, institutional and financial requirements for the creation and operation of water management authorities at the river basin level.

16. Communication needs for meaningful participation by society in decision-making.
17. The potential role of river basin authorities in coordinating inter-agency efforts to deal with extreme phenomena and environmental problems, especially pollution. Experiences with river basin authorities created for that purpose, particularly in shared river basins.

#### **D. EXPECTED RESULTS**

Results of the discussions of the second workshop for managers of river basin authorities in Latin America are expected to include the finalization of agreements for the formulation of widely applicable technical specifications in Latin America to enable the creation and operation of multi-purpose water authorities at the river basin level. The areas such specifications might address include:

1. Review and updating of the catalogue on water management systems;
2. A system for classifying approaches to multi-purpose water management by river basin authorities;
3. Listing and classification of river basin authorities in Latin America. Codification and dynamic information system;
4. Procedures for creating and organizing water management authorities at the river basin level: steps in their implementation, available training materials, course programmes, texts, existing technical specifications and standards;
5. Types of legal status and legal powers of river basin authorities with respect to their form of organization, capacity to levy charges, freedom to decide on investments, systems for monitoring their actions, ability to convene meetings and coordination of actors, among other factors.
6. Legal provisions for the formulation and application of master plans for planning river basin development and use. Procedures for formulating plans, actors required to participate, contents of plans, available manuals;
7. Alternative methods for financing river basin authorities and their link with institutional and legal aspects, examples provided by other countries, relationship to legal aspects, true charging capacity, charging arrangements by type of river basin user, role of the State;
8. Composition of government bodies associated with water management authorities at the river basin level and forms of participation of the many actors involved: the State, large users and civil society;

9. Scientific and technological information necessary for improved functioning of the entity, taking into account the concept of cost minimization and the gradual approach necessary for obtaining information on the dynamics of the river basin and its socio-economic characteristics;
10. Types of river basin and their relationship with multi-purpose water management systems and modalities for the creation and operation of authorities (e.g., river basins located in large urban areas, sparsely-populated river basins, river basins involving large-scale investments, river basins not characterized by such investments and featuring squatters without title, river basins with indigenous populations, etc.).
11. Tools and procedures for the decision-making process.

It is hoped that each workshop participant can contribute ideas and experiences to the discussions and, where possible, can submit written contributions outlining his position in relation to one or more of the issues set out in the provisional agenda and to the expected outcome.

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**Annex II****WORKSHOP PROGRAMME****11 November**

- 9.00 - 9.30 Registration of participants
- 9.30 - 10.00 Opening of the second workshop for managers of river basin authorities in Latin America and the Caribbean  
Welcoming statement by the representative of the Executive Secretary of ECLAC  
Statement by Mr. Alain Siberchicot (representative of the Government of France)  
Statement by Ms. Helga Hoffmann, Director, Environment and Development Division
- 10.00 - 10.30 Break
- 10.30 - 10.45 Election of the presiding officers and adoption of the agenda
- 10.45 - 11.30 Presentation and discussion on progress in the creation of river basin authorities in the region; outcome of the international meeting of river basin authorities held in Valencia. Chaired by Mr. Axel Dourojeanni.
- 11.30 - 11.45 Report and discussion on the outcome of the first workshop for managers of river basin authorities in Latin America and the Caribbean.  
Systematization of information on river basin authorities. Chaired by Mr. Nicolas Bourlon.
- 11.45 - 12.30 Presentation and discussion on conditions and options for the financing of river basin authorities, with particular reference to organizational, political, legal and administrative conditions needed for this financing to be made effective. Chaired by Mr. Terence Lee.
- 12.30 - 13.00 Formation of working groups on institutional, legal and financial aspects and the allocation of roles (three working groups). Election of coordinators for each working group.
- 13.00 - 14.30 Lunch



14.30 - 17.00 Working meetings of the three working groups in the offices assigned to them. Each working group will have a tentative list of topics to be discussed, and will also have a rapporteur. Reading and reference materials will also be provided to the working groups on each topic. Participants are encouraged to bring material of their own to complement the material provided.

Group 1: Theme: Institutional aspects and classification of river basin authorities. Rapporteur: René Salgado

Group 2: Theme: Financial aspects of river basin authorities. Rapporteur: Andrei Jouravlev.

Group 3: Theme: Legal aspects associated with river basin authorities. Rapporteur: Guillermo Acuña.

17.00 - 17.30 Drafting of the conclusions of the working groups (to be drafted by the rapporteurs).

## 12 November

9.00 - 10.30 Presentations by participants on their experience with the creation of river basin authorities and their evolution (particularly for those participants who have brought written presentations).

10.30 - 11.00 Break

11.00 - 12.30 Presentations by participants on formulas for the financing of river basin authorities. Economic and financial justification, and legal framework required for the financing.

12.30 - 13.00 Discussion on formulation and legality of the application of river basin master plans. Experiences of the formulation of river basin master plans. Conceptual models available.

13.00 - 14.30 Lunch

14.30 - 16.00 Afternoon dedicated to final review and elaboration of the conclusions and recommendations of the working groups; to be carried out by the leaders and rapporteurs, plus any participants who so wish.

**13 November**

- 9.00 - 10.30 Progress, difficulties and strategic planning for the creation of river basin authorities in Brazil and Mexico in accordance with water legislation of those countries. Discussion and comparison of experiences in the region, with particular emphasis on clarifying the necessary preconditions for the creation and functioning of such bodies (including political commitment, social participation, user education, and the role of the State).
- 10.30 - 11.00 Break
- 11.00 - 13.00 Presentation and discussion on the creation of river basin authorities in other countries. Comparison of experiences in France and Latin America. Proposals for concrete actions.
- 13.00 - 14.30 Lunch
- 14.30 - 15.30 Presentation, adoption and discussion of the conclusions and recommendations of the meeting. Adoption of tasks for the future, to be reported on at the third workshop. Adoption of the date and venue for the third workshop and of its provisional agenda.
- 15.30 - 16.00 Closure of the workshop.

**Annex III****LIST OF PARTICIPANTS**

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**Annex IV****LIST OF DOCUMENTS**

1. Working paper 1, "Conceptos para la gestión del agua: temas en debate", prepared by Alex Dourojeanni, Deputy Director, Environment and Development Division, ECLAC.
2. Working paper 2, "La gestión integrada, planificación y legislación de aguas desde la perspectiva de los principios de Dublín", prepared by Alex Dourojeanni, Deputy Director, Environment and Development Division, ECLAC.
3. "Red internacional de organismos de cuenca (RIOCI)", prepared by Alex Dourojeanni, Deputy Director, Environment and Development Division, ECLAC.
4. "Propuesta de estudio institucional económico y financiero de cuencas".
5. "Sistematización de procesos y acciones de manejo de cuencas hidrográficas" (ECLAC-ILAI).
6. "Prácticas recomendables para la elaboración de leyes y regulaciones relacionadas con el recurso hídrico", prepared by Alex Dourojeanni, Deputy Director, Environment and Development Division, ECLAC.
7. "El financiamiento de entidades de cuenca en América Latina y el Caribe". Terence Lee and Andrei Jouravlev, Environment and Development Division, ECLAC.
8. "Desarrollo sustentable y gestión de cuencas hidrográficas en América Latina". Nicolas Bourlon and Dominique Berthon.
9. "Organización institucional de la gestión del agua por cuencas hidrográficas en México", Guillermo Chavez.
10. "Metodología para optimizar el aprovechamiento de los recursos hídricos de la cuenca del río Santa", Dr. Arturo Cornejo Taboada, Special Committee for the Privatization of the "Especial Chao-Viru-Moche-Chicama" Project, CEPRI CHAVIMOCHIC, Peru.
11. "Región del Bío-Bío 1969-1996", Ramón Daza Hurtado, Regional Water Director for the Bio-Bio Region, Water Department, Ministry of Public Works, Chile.
12. "Descripción de una agencia de cuenca", Agência Técnica da Bacia do Rio Doce, Ministry of Mines and Energy, Brazil.



13. "Water markets in Chile: what they are, how they have worked, and what needs to be done to strengthen them", Humberto Peña, Director, Water Department, Ministry of Public Works, Chile.
14. "Modificaciones al código de aguas y su aporte a la gestión del agua". Humberto Peña, Director, Water Department, Ministry of Public Works, Chile.
15. "Corporaciones administradoras de cuencas. Proposición de una definición conceptual", Humberto Peña, Director, Water Department, Ministry of Public Works, Chile.
16. "Rimac: el río hablador", Alain Cadiou.
17. "Diretrizes básicas para a consolidação e fortalecimento do Cointa".
18. "Gestão integrada da bacia do Rio Paraguai (Argentina, Bolívia, Brasil, Paraguai), projeto do *Fonds français pour l'environnement mondial* (FFEM)", "Implantação de um centro de gestão integrada regional da bacia do Alto Paraguai", DBEnvironnement.
19. "Políticas de uso y administración del recurso hídrico en el Valle del Cauca", Autonomous Regional Corporation for the Cauca River Valley.
20. "La experiencia italiana en los organismos de cuencas", S. Fattorelli, A. Goio.
21. "Proyecto de manejo de la cuenca del río Tempisque", Ing. Maureen Ballestro, Asotem/Minac, Costa Rica.
22. "Consorcio intermunicipal de las cuencas de los ríos Piracicaba y Capivari, Brasil", Vitorio Humberto Antoniazzi, Brazil.
23. "Dificultades y propuestas en la creación de organismos de cuenca en Ecuador", Carlos Aguilar León, Ecuador.

