

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



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

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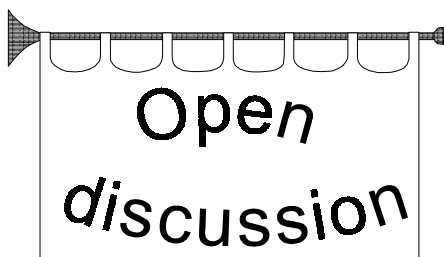
CIRCULAR N° 9

Recently, many ECLAC activities have been concerned with participation by a wider range of actors in water resources management. Particular emphasis has been placed on private-sector participation, and on decentralization and the creation of river basin organizations, as reflected in recent meetings in Buenos Aires (see "*Meetings*"). These meetings, held jointly with the Senate of Argentina, are another example of attempts to make water resources management more participatory.

We devote a large part of this edition of the Circular to practices that should be considered when drafting or reforming water laws to make participation more feasible - in itself an important link in securing more open, transparent and democratic water management.

This edition of the Circular is the last to be coordinated by Mr. Terence R. Lee, who retired from ECLAC on 31 December 1998. Mr. Lee sends greetings to all his friends and hopes to continue seeing them in the years to come.

As always, our readers are encouraged to submit information on past or future activities, courses or publications, and to communicate any other comment, article, concern or suggestion relating to the Network's objective of promoting cooperation in integrated water resource management.



The publication "*Prácticas recomendables para la elaboración de leyes y regulaciones relacionadas con el recurso hídrico*", by Miguel Solanes, ECLAC Regional Adviser on Water Resource Legislation and the Regulation

of Public Services, and David Getches, Professor at the University of Colorado, United States, is the outcome of a joint project between ECLAC and the Inter-American Development Bank (IDB).

The document provides a summary of recommended practices for drafting laws and regulations on water-related issues. It is not intended as a manual on drafting water laws, but aims to be a guide to the minimum basic principles that water legislation should contain. The document is divided into three sections:

- recapitulation of international criteria for stable water management;
- analysis of current policies, laws and reform proposals in selected countries; and
- recommendations on the fundamental criteria to be used in the drafting of water laws.

In recent years an international consensus has been reached on the basic principles of efficient and sustainable water management: economic efficiency, environmental sustainability, equity, effectiveness and balance or equilibrium. To incorporate these principles into water resources legislation, the law needs to take certain factors into account: namely, recognition of the laws of economics, the development of institutional capacity, decentralization of activities to appropriate levels, dissemination of information and education of users, and the democratization of management systems. In addition, from a purely pragmatic point of view, water legislation should fulfil the following three aims: permit and facilitate an integrated approach to water resources management, minimize disputes and streamline settlement processes, and have a good chance of being applied.

General concepts

- Laws are social products to which lawyers merely attach a certain technical content. What underlies the law and the institutional

framework in this context, is the result of a variety of social inputs and interests. Water laws in countries where there is a balance between institutional, social, economic and environmental elements, tend to reflect this structural equilibrium. In other countries, water laws reflect the basic imbalance of the underlying system, in water and in other natural resources.

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- Although all countries have laws and institutional frameworks, almost none has made an assessment of the role of water in the national economy. Any attempt to draw up water legislation in line with national policies should be more firmly grounded in the general and subsectoral economics of the resource.
- Studies to determine "who gets what from water?" and "who pays for what in water resources?", apart from answering these questions, would be positive in a variety of

ways: they would develop an analytical methodology with which the elements of a systemic analysis could begin to be put together, aimed at achieving long-term equilibria and generating statements or suggestions on macro factors; they would make it possible to move beyond superficial examinations and statements and on to more substantive evaluations; they would also enable factors to be identified that cause inertia or deterioration in water resources management, and make it possible to coordinate management strategies; finally, such studies would allow an objective assessment to be made of the quality and extent of real effective public participation, and of the information on which this is based, with the possibility of suggesting policies for improvement.

- For a variety of reasons the countries of the region are going through a process of decentralization of activities and competencies. Presumably, this process ought to keep in mind certain minimum aspects: the general culture and the capacities and resources available at the decentralized level, the culture of participation at the local level and its functionality, follow-up mechanisms, and the means available for protecting users and administered parties when the local level does not carry out its obligations effectively and fairly. In some examples of decentralization, it would seem that many of the processes have not been carried in the expected way, with the lack of a broad and participatory local government culture being detected as a possible failing. In this context it would be useful to have a list of relevant elements before, during and after decentralization that would make it possible to secure the essential aspects of the procedures, resources and effective democratization needed for decentralization to be successful.
- The most elementary texts on water economics stress the hybrid public/private good nature of water. In mature and structurally balanced judicial systems, this takes the form of laws that recognize the public ownership of water and grant private rights to use it. It also has a bearing on management systems, as the public-good characteristics of water require a degree of technical capacity to understand and administer the resource, and settle disputes.
- In private investment processes, investors make sure that the legal and operating conditions of the organizations in which they invest afford a performance that enables the investment to be recouped. International financing agencies might be able to play a similar instrumental role, designing and implementing programmes for the development of water policies and legislation, along with resource management systems and capacities.

Specific recommendations for legislation

Water rights

- Water laws should precisely define that water belongs to the public domain. At the same time, they should also clearly state that rights granted for using water, under conditions of effective and beneficial use, and provided they do not cause any environmental damage, are protected by the clauses on private property set out in the Constitution. However, laws may allow the modes of exercising those rights to be regulated in a general way, on the basis of social and environmental sustainability needs.
- Recent experiences suggest that certain water management norms, such as the requirements for granting concession rights, should be given the highest constitutional status so as to prevent them from being manipulated by special interests. In this context, water rights are granted when there are available flows, when they do not affect third party rights or ecological requirements, and when the water authority considers the request to be consistent with the public interest in water use.
- The only priorities in granting rights should be for drinking water and sanitation, notwithstanding the preservation of flows or streams for ecological reasons. Where there are competing uses, the water authority must assess each on its merits and, where these are equal, adjudicate on the basis of economic tender, priority of request or some other relevant criterion.
- In the case of pre-existing rights, these should normally be recognized, provided their use is effective and beneficial, historical and current, notwithstanding standards being set for appropriate use.
- Methods for implementing substantive procedures must ensure their enforcement.

Water administration

- The water authority should be a non-sectoral body, separate from administrative units of sectoral nature. In general, administrative bodies of a collegiate type have not given good results, for which reason policies ought to aim at creating non-collegiate entities, while enabling sectoral agencies or interests to be brought in for purposes of consultation or participation.
- Adequate administration presupposes precise definition of its functions, duties and faculties, and the rights of administered parties and the public in general, under supervision of the judicial system for legality and arbitrariness. The basic functions of water administration include applying the law, valuing the resource, granting rights of use and discharge permits, maintaining a

registry of uses, and determining and collecting financial charges. In addition the administration should be responsible for monitoring and controlling water use, with the possibility of carrying out inspections and demanding relevant information, applying quality standards, drafting plans and settling disputes relating to water use at the administrative level, except for certain matters such as water ownership, and always with resort to the justice system for better protection of administered parties.

- Water-related decision-making has economic content, and special interest group pressures can promote or dissuade such decisions. Accordingly, water authorities should have independent budgets and chief executives with minimum tenure periods. In addition, they should be personally responsible for compliance with the laws and liable for damage arising from non-fulfilment of their functions.
- Critical requirements in the creation of river basin organizations include a precise definition of their specific exclusive functions and their own basic resources. Their effective capacities should also be defined, and they need to be given sufficient funds.
- Once decentralization processes have been carried out, it is advisable to keep a residual capacity in the hands of the central agency, to promote or implement the necessary activities or measures itself in the event of decentralized bodies being negligent or unable to carry out their functions.

Participation by users and citizens

- The laws should specify the information to be made available to the public on the quality and quantity of water resources and the conditions of its ownership. Preparing and publishing this report should be an obligation for the water management authority.
- As regards special projects and programmes, it should be mandatory to publish results for the public to make informed judgements on the costs, impacts and benefits of the activity.
- The process should be implemented in such a way that the public and interested parties can participate in a timely and meaningful way in the different processes: namely, compilation of information, evaluation, verification of information accuracy and follow-up to ensure that that assessments made are effectively used in decision-making.
- When participation is not forthcoming, it is important to have laws that lead water authorities to make extra efforts to seek information and adequately publicize it.
- Non-fulfilment of the obligation to provide complete and true information in accordance with current legal guidelines for promoting participation, and to handle consultative processes in an impartial, meaningful and

timely fashion, should be considered a breach of the duties of the public official responsible for administering the resource.

Water charges

- Water laws should establish, as a condition for the acquisition and maintenance of water rights, that the holders of such rights have to pay the corresponding financial charges.
- As regards the specific content of water charges, there may be different payments and systems. In some cases, the charge should reflect the costs of administering the resource plus the specific costs of special services or projects. In others, the charge should be used as an incentive towards more efficient water use or its conservation.
- No system of charges is effective in managing the demand for water or the protection of water quality, in a context of general subsidies. However, it should be born in mind that targeted subsidies are socially necessary for economically marginal sectors of the population.

Centralization and decentralization

- Depending on the activities involved, determine the appropriate level for decentralization, in accordance with technical considerations and economies of scale and scope.
- Separate the requirements of decentralized activities and their technical management from political influences, in order to ensure viability and effectiveness through the necessary legal, financial and control methods.
- Keep in mind that successful decentralization models have promoted decentralization as opposed to autonomy.
- Preserve a residual monitoring capacity at the central level, including a capacity for reabsorption where necessary, or intervention in activities in cases of mismanagement.
- Design systems in which administered parties and users have swift and expeditious access to justice.
- Clearly establish the legal obligations of the decentralized system and make its incumbent director personally responsible for violations thereof.

Clear definition of customary rights

- Water laws, as a system, should include the principle that the customary rights of indigenous ethnic groups be legislatively recognized. When water projects that are in the general interest do not allow such uses to be respected, the indigenous people should be compensated.
- Indigenous groups can seek registration of customary rights and their formalization at any time, and where they have been assigned

to third parties, this may be annulled. Rights must be susceptible to expansion, as the conditions and size of the population change. If annulment is not granted, the indigenous people shall be compensated, and the amount of compensation must reflect not only the pecuniary value of the rights, but also their importance to the ethnic groups for subsistence purposes.

- In areas where ethnic groups are living, the water authority must survey and officially register the off-stream and in-stream uses and rights pertaining to them.
- The implementation of these processes must guarantee hearing, participation, defence of ethnic rights and the proof of rights and uses. In the event of doubt, a presumption will be made in favour of the indigenous people.

Data and planning

- Water legislation must define the minimum data that water authorities need for adequate management. Holders of water rights must register them, and their transfer, in the corresponding registry. Unregistered water rights cannot be defended against third parties.
- For purposes of compatibility between the administration and the planning of water resources, these both functions should be carried out by the same body.
- Existing water rights should be adjustable in line with planning targets. When such adjustments aim at preventing or repairing damage to third parties, or ensuring the sustainability of sources, they will not be subject to compensation, provided they are general requirements and do not imply the functional destruction of the right.
- Planning should include structural and non-structural measures, and take the role of water markets into account. It should be participatory and based on procedures that provide time for significant participation by all agents with an interest in water resources. Water management should provide criteria for adequate decision-making to users, interested parties and the public in general.

Dispute settlement

- Water legislation should enable interested parties to settle disputes by agreement, or by appeal to arbitration, adjudication by communities or user associations, or other friendly means. However, when the parties are unable to reach agreement, the legislation should permit the water authority to make a ruling in the first instance, except where the dispute relates to certain essentially legal matters, such as the public or private nature of water, on which there is direct recourse to the judicial system. The decisions of the water authorities and those of the arbitration process should both have recourse to justice.

Evaluation standards

- The legislation should make it mandatory to carry out ecological, economic and social evaluations of water use projects. Mechanisms should also be established for interested and affected parties to participate in such evaluations in a timely and meaningful way. Finally, the legislation should define the threshold above or below which projects will not be approved, and establish mechanisms for administrative and judicial remedies that enable parties to take action where they feel the legal requirements of the system have not been complied with.

Accountability for water-related environmental damage

- Liability for damage should be objective; in the case of legal entities there should be personal and joint liability between the legal entity and the executive in charge, in cases of negligence, deception or non-compliance with the law. Once damage has been caused, the burden of proof should rest with the party claiming non-liability, and remedies should include not only the payment of compensation but also the restoration of affected resources.

Disputes between decentralized authorities

- National legislation should recognize the two basic principles that govern this issue: (i) equity and reasonableness; and (ii) not causing significant harm.

Competency of environmental agencies regarding water management

- When water administration is part of the general system of environmental or natural resource ministries, it should have some degree of functional autonomy to make it easier to carry out its functions. Such autonomy would include the administration of funds collected from water charges.

Water markets

- Countries should allow the trading of water rights between or within user sectors.
- Subject to the requirement that water rights that have not been effectively used cannot be traded or marketed, and that water rights cannot be traded outside their historical uses. Subject to the right of hearing and the possibility of intervention by interested third parties. Keeping in mind the environmental and social impacts of water rights and the public interests linked to them. Subject to approval by the water administrator and to registration.

- Keeping in mind that markets will not operate in the absence of good records of water rights and databases.

Competency to sue on the part of members of the public

- One of the most pertinent problems in administrative inertia or incorrect decision-taking is that members of public generally have difficulty accrediting their legal standing. Here the legislation should streamline the requirements for effective accreditation of competency to sue, so as to enable non-governmental organizations and private individuals to challenge illegal or arbitrary public actions.



From 16 to 18 November 1998, the **Third Workshop for Managers of River Basin Organizations in Latin America and the Caribbean** was held in Buenos Aires, Argentina. The event was organized by the Water Resources Commission and by the Ecology and Human Development Commission of the Senate of Argentina, ECLAC, and the Federal Investment Council (CFI). Those attending included delegates from Argentina, Brazil, Bolivia, Chile and Mexico, along with representatives from ECLAC and the Regional Delegation for the Southern Cone of the French ministry of foreign relations.

The central themes of the workshop included the creation and operation of river basin organizations, together with the formulation of master plans and municipal participation in river basin management. There was a general consensus on the urgent need to create and strengthen water management systems at the river basin level and keep them operational. The experiences of river basin organizations in operation fully support this consensus, in view of the economic, environmental and social results obtained. What was clear, however, was that not enough emphasis has been put on investigating and disseminating information on such benefits.

The ECLAC Natural Resources and Infrastructure Division presented two working papers: “**Guía para la creación de entidades de cuenca: marco de referencia para su elaboración**” by Axel Dourojeanni, Guillermo Dascal and René Salgado, and “**Participación municipal en actividades de gestión a nivel de cuencas**” by Axel Dourojeanni and Guillermo Acuña.

The aim of the first report was to present a basis (reference framework) for preparing a guide for the creation of authorities to manage multiple water use at the river basin level, based on selected regional experiences. It was written in response to a regional demand manifested at the Second Workshop for Managers of River Basin Organizations in Latin America and the Caribbean (Santiago, Chile, 11 to 13 December 1997) (see Circular N° 8), the report from which states the need to systematize, edit, publish and circulate a reference guide on river basin management in order to permit the dissemination of multi-sectoral water management processes and methods and the establishment of water resource priorities, as a pivotal topic in environmental management. The document has three parts and an annex.

- The first part corresponds to the theoretical concepts that define a water management authority at the river basin level.
- The second draws together aspects that are relevant for the creation of river basin organizations. It provides a framework for defining the stages and technical specifications needed for creating such authorities.
- The third part sets out the technical specifications that were available for carrying out river basin studies, and provides a primer for making comparative studies of river basin organizations.
- The annex draws together the results of a comparison of six case studies (the Mapocho river basin in Chile, the Rímac in Peru, the Piracicaba, Capivari and Jundiai river basin in Brazil, the Huasco river basin in Chile and the Río Doce basin in Brazil).

The second report argues that rapid urbanization is aggravating the already serious environmental problems in the vast majority of urban areas in the countries of the region. The municipalities are unable to deal with the situation because, despite having generated institutional spaces for local environmental management, these have not been able to systematically incorporate the environmental dimension into municipal administration. Participation by municipalities in river basin management at the local level can contribute to efficient management of the natural resources within

their jurisdiction, particularly in the case of water resources. The document is in five parts:

- The first part presents a conceptual approach to the relation between municipalities and river basin management. It analyses topics such as environmental management and water administration at the river basin level, approaches to river basin management in the countries of the region and the importance to municipalities of river basin protection.
- The second provides a theoretical conceptualization of the topic of the municipality vis-à-vis river basins (water, a vital but conflictive resource; reconciling municipal administration and river basin management; and necessary conditions for municipal participation in river basin management processes).
- The third part deals with setting up an inter-municipality coordinating mechanism (principles for the creation of river basin organizations in the region and tasks to facilitate the creation and functioning of river basin organizations).
- The fourth analyses the benefits and obligations arising from municipalities' participation in river basin management (effective management of river basins for the provision of surface water and best practices in river basin protection).
- The fifth part gathers experiences of municipal participation in river basin management in Brazil (the Intermunicipal Consortium of the Piracicaba and Capivari River Basin and the Intermunicipal Consortium for the Sustainable Development of the Taquari River Basin), Colombia (the Chicamocha River) and Peru (the municipality of Cajamarca).



From 18 to 19 November 1998, the **First Latin American Parliamentary Session on Water Policies** was held in Buenos Aires, Argentina, organized by the Senate of Argentina, CFI and ECLAC. Discussions centred around the following topics:

- “**Comparative analysis of water policies and legislation in Latin America**” by Miguel Solanes of the ECLAC Natural Resources and Infrastructure Division, whose presentation dealt with recommended practices in drafting laws and regulations relating to water resources and the issue of public services and regulation. He added that, on the issue of administration and management, there was a tendency for water not to be managed by

sectoral bodies. However, there was still very little participation by the public in water policy-making. He argued that public participation should be encouraged through the provision of relevant information, and that water cannot be managed unless it is charged for, as governmental budgets do not have the resources to administer it. Another important topic is the settlement of water-related disputes. These ought not to be resolved between private individuals, and the State should establish regulatory frameworks for this.

• **“Economic instruments in water management”** by Carl Bauer of the University of Berkeley, who in his presentation referred to the economic instruments and the 1992 Dublin Principles, which state that water should be treated as an economic good as well as a social one. He stated that there are very important economic aspects that legislation has ignored. Economic instruments are important in integrated water resource management, and water markets are one of these; they are a good response to certain problems but not to others. It is important to stress a pragmatic and non-ideological approach. He indicated that water markets should be used as part of the institutional framework, and that economic instruments should be accompanied by an appropriate regulatory framework. Property rights in water cannot be redefined without adequate debate, and disputes cannot be resolved in the absence of appropriate institutions. The main thing is to seek balance between the private and the public aspects.

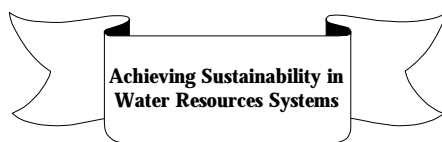
• **“Private participation in the public water service”** by Terence R. Lee of the ECLAC Natural Resources and Infrastructure Division, who argued that the extent of private participation in water-related public services should not be exaggerated. In the region as a whole, private participation is still incipient, and in most countries the public sector still administers essential infrastructure. Experience of private participation in water management is very limited, though there is much more experience with service contracts. He indicated that opening up water-related public services to private participation had been limited partly because most countries do not have a regulatory framework to control the functioning of monopoly activities. Many countries are developing regulatory systems, but few have yet had any experience of the way they really operate. Finally, he stressed that opening water-related public services to private participation has created many and varied investment opportunities. This has attracted

many firms to Latin America and the Caribbean from other regions of the world. However, perhaps one of the most interesting phenomena has been the expansion abroad of Chilean electricity companies.

• **“Thoughts on the importance of interdisciplinary aspects and inclusion of the multisectoral dimension in drafting water laws”** by Cesar Magnani, who stressed the importance of interdisciplinary aspects of water issues. He argued that legislative bills on water management cannot be carried forward in the absence of political resolve. Another crucial aspect is acknowledging the multisectoral dimension. Participation by all the actors involved enables increasingly consolidated water legislation to be developed. He added that water laws in a federal country are doubly complex, and it is essential to establish the big national objectives before anything else. Consequently, it is necessary to think in terms of principles and, even more important, respect natural laws (the hydrological cycle) and understand that water defines a boundary that transcends a region's political borders. In summary, the law should enable the management of multiple water uses to become operational at the river basin level.

Future activities

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The **International Seminar on Achieving Sustainability in Water Resources Systems** will be held in Panama, June 2000. The seminar is for the Latin American and Caribbean region and is designed to be of particular benefit to practicing water resources managers, planners and educators.

The objective of the seminar is to involve the participants in discussions with a cadre of internationally respected experts on subjects such as: what is meant by sustainable development; the importance of “change” in sustainability; examples of indices and guidelines in use today; the role of modeling and decision support systems; considering “risk” in planning; public and stakeholder

involvement; case studies; and the practical applicability of the concept of sustainability.

Additional information is available from:

Dr. John S. Gladwell, President
Hydro Tech International
P.O. Box 40504 Waterfront Centre
#11 -- 200 Burrard Street
Vancouver, BC V6C 3L0, Canada

Tel.: 1 (604) 885-0188
Fax: 1 (604) 885-0181
E-mail: John_Gladwell@Sunshine.Net



The **International Conference on the Challenges Facing Irrigation and Drainage in the New Millennium** will be held from 20 to 24 June 2000, at Colorado State University in Fort Collins, Colorado, the United States. The conference is sponsored by the U.S. Committee on Irrigation and Drainage (USCID). **Watershed Management 2000**, a conference to be organized by the American Society of Civil Engineers, will be held concurrently with the USCID Conference.

The topic for discussion at the USCID Conference will be **“Meeting Human and Environmental Needs through Sustainability, Rehabilitation and Modernization”**. The main objectives of the conference are to provide an opportunity to learn of the latest solutions, innovations and technological advances practiced in the United States, and to discuss the newest developments in research and practical applications in the international arena.

The discussions to be carried out will be directed towards the following issues: competing interests in water resources; irrigation with recycled water; operation and maintenance; rehabilitation and modernization; participatory irrigation management; irrigation water management; drainage water management; managing agricultural return flows; sustainable irrigation; privatization of irrigation delivery systems; application of new technologies; and planning new developments to meet future water supply needs.

Additional information is available from:

United States Committee on Irrigation and Drainage (USCID)
1616 Seventeenth Street, Suite 483
Denver, Colorado 80202, U.S.A.

Tel.: 303-628-5430
Fax: 303-628-5431
E-mail: stephens@uscid.org



**Riparian Ecology and
Management in Multi-Land
Use Watersheds**

The **International Conference on Riparian Ecology and Management in Multi-Land Use Watersheds** will be held from 27 to 31 August 2000, in Portland, Oregon, the United States. Its objective is to provide an integrated forum for the presentation and discussion of biological, physical, chemical, and social aspects of riparian areas and stream corridors in multi-land use watersheds. The discussions to be carried out will be organized around three themes to maximize interdisciplinary interactions.

- Processes, functions and structure of riparian areas (disturbance regimes, landscape and watershed scale processes, vegetation-hydrology interactions, plant-animal interactions, biogeochemistry, and fluvial processes and hydrology).
- Multiple human influences on riparian areas; focus on past and present effects (cumulative effects at watershed scale, ecosystem trajectories, case studies from urban, agricultural, forest, and rangeland settings, and social and economic valuations).
- Future management of riparian areas — use and restoration; focus on future options for management of riparian ecosystems (restoration and protection strategies, assessment approaches, alternative future analyses, watershed analyses, monitoring, reference conditions, sustainability, and ecological constraints and opportunities).

Additional information is available from:

Dr. Jim Wigington
U.S. EPA, 200 SW 35th St.
Corvallis, OR 97333, U.S.A.

Tel.: (541) 754-4341
E-mail: pjw@mail.cor.epa.gov



**First World Congress
of the International
Water Association**

The new International Water Association (IWA), formed by the merger of the International Association on Water Quality (IAWQ) and the International Water Services Association (IWSA), will hold its **First World Congress**, from 3 to 7 July 2000, in Paris, France. The congress will consist of several parallel sessions on both theoretical or research-oriented (science and technology) and applications oriented topics (operation and management). The discussions to be carried out will centre on water resources

management, drinking water production and distribution, wastewater collection and treatment, and managerial and economic aspects of these activities.

Additional information is available from:

Aghtm-cfrp
83, avenue Foch
BP 39.16
75761 Paris Cedex 16, France

Tel.: + 33 1 53 70 13 51 or 53
Fax: + 33 1 53 70 13 40
E-mail: aghtm@aghtm.org



**Ambiente
Ecológico**

The magazine **Ambiente Ecológico** has its website at <http://www.ambiente-ecologico.com>. Its articles cover a wide range of topics, including water resources, environmental protection, ecosystems, legislation, climate change, sustainable development, soils and economic aspects of environmental management. Much of the contents relates to problems being faced by the countries of the region. Its most recent water-related articles include, "*Agua potable y desagües cloacales*" by Luis Fernández (Edition N° 47 of June 1998) on the drinking water and sewerage sector in Argentina.



**Transboundary
Agreements Infobase**

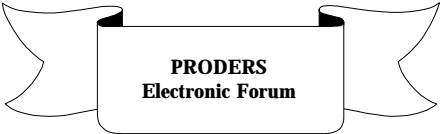
The **Commission for Environmental Cooperation (CEC)** (<http://www.cec.org>), an international organization created under the North American Agreement for Environmental Cooperation to address regional environmental concerns, whose members include Canada, Mexico and the United States, has recently announced the launch of a new **Transboundary Agreements Infobase**, giving access to information on agreements and treaties on transboundary environmental cooperation in North America. Searches can be made by subject, agreement

name or by the parties to an agreement. The database has links to the full text of agreements, and to other Internet sites offering additional related information. This new resource can be explored at the following address: <http://www.cec.org/infobases/agreements/>.



**CAMAREN
Project**

The **CAMAREN Project** (Training System for the Management of Renewable Natural Resources), in Ecuador, was created in response to two needs: firstly, to improve the effectiveness of actions by staff responsible for managing natural resources, and secondly, a recognition that a training process requires the provision of highly specialized teaching. The central aim of the project is to put a training system into operation for field workers and technicians in the management of renewable natural resources in the Andes. The project chose five central themes for its training activities: small plot irrigation, agroforestry, high-altitude pastures and animals, soils and water for human consumption. Further information can be obtained at <http://www.camaren.org>.



**PRODERS
Electronic Forum**

One of the big goals of the Secretary of Environment, Natural Resources and Fisheries (SEMARNAP), in Mexico, is to introduce the sustainability factor into national development. In this way, the ministry aims to take steps to achieve sustainable economic growth, reduce the poverty in which a large part of the population finds itself and prevent a continuing deterioration in the natural resource base of economic development. Also set in this context is the proposal for the design and implementation of "**Sustainable Regional Development Programmes**" (PRODERS), catering to a set of priority regions in Mexico.

PRODERS is a development programme that aims to generate processes to enable economic growth to be balanced with a better quality of life and conservation of natural resources. It aims to achieve this by promoting mechanisms for resources management which extend regional planning and decision-making capacities and enable investment and public spending policy to be made on the basis of agreed aims and in a coordinated way, in view of the different

social, economic and political actors that have to be involved in its preparation, implementation and evaluation. Information on PRODERS is available at <http://www.semarnap.gob.mx/proders/>.

The PRODERS electronic forum was created as a space for the interchange of opinions and discussion mainly among the academic community, but with the possibility of including members of other sectors that participate or are interested in sustainable regional development programmes. To subscribe, send an e-mail message to majordomo@hp.fciencias.unam.mx with the words *subscribe proders*.



The "**AMBIENTAL**" mailing list is intended to be a vehicle for exchanging all kinds of information relating to environmental protection in different ecosystems. Any type of policy for environmental protection and sustainable development can be discussed on this list: environmental planning tools, environmental law (from its various viewpoints, including administrative, criminal and international law), natural resource economics and ecological economics, techniques of habitat and species conservation, environmental engineering and other environmental sciences. Of special interest for the list is the debate on the activities carried out at all levels by the different public agencies involved in environmental protection: world, regional, national and local. Further information can be obtained at <http://listserv.rediris.es/archives/ambiental.html>.



The **Environmental Health Project (EHP)**, sponsored by the United States Agency for International Development, assists development organizations to address environment related health problems and provides technical assistance in the areas of water supply, etc. (<http://www.crosslink.net/~ehp/>). It has recently established an information network (DECNET) and an electronic mailing list on the decentralization of water and wastewater organizations in Central America and the Caribbean. The purpose of the network is to promote the exchange of information and collaboration among water and wastewater organizations involved in decentralization efforts and

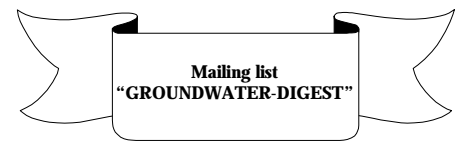
research, and to provide a discussion forum for all those working or interested in this topic. It focuses on experiences learned, current or proposed projects and research, and provides a periodic bulletin on news from network members. Information on its activities is available at <http://www.access.digex.net/~ehp/decint.html>.



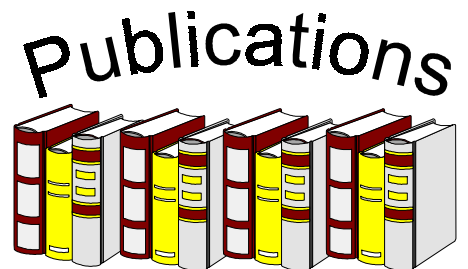
The Office of Arid Lands Studies, College of Agriculture, the University of Arizona, publishes semiannually for an international readership the **Arid Lands Newsletter**. Its objective is to explore events and issues of interest to arid lands researchers, educators, resource managers, and policy makers in all countries of the world. The latest issue of the newsletter is devoted to conflict resolution and transboundary water resources. It contains articles on "Openness, sustainability, and public participation in transboundary river-basin institutions", "Toward jointly managing a transboundary aquifer: creating a binational dialogue through community participation and education" and "Water as an instrument for sustainable regional development", among others. The Arid Lands Newsletter website is located at <http://ag.arizona.edu/OALS/ALN/ALNHome.html>. The full but unillustrated text of each issue is also available by way of an e-mail subscription. To subscribe, send the command *subscribe aridlands-nl* to majordomo@ag.arizona.edu and leave the rest of the message blank.



The **WaterWeb** consortium has been created to promote the sharing of information concerning water and the environment. It seeks to bring together educational, governmental, nonprofit, and commercial entities interested in water-related research, conservation, and management. It seeks to advance water related issues, promote the use of quality information, and share information with water use stakeholders and decision makers. Information on the WaterWeb consortium is available at <http://www.waterweb.org/>. One highlight is an extensive database of water and environmental websites (<http://www.waterweb.org/linksdbs/>). The database is fully annotated and searchable by phrases, established keywords, geographic coverage and language.



The **GROUNDWATER-DIGEST** mailing list was created to facilitate the discussion of groundwater and related topics by interested parties around the globe. There are thousands of subscriptions worldwide, from more than 60 countries. Some of the topics discussed on GROUNDWATER-DIGEST include: groundwater software, groundwater pollution, groundwater models, groundwater cost estimating, automation of groundwater readings, conferences and courses, leakage detection methodology, market pricing of groundwater, public water supply (ground vs. surface), proper well maintenance, water law, and agricultural chemicals. Further information can be obtained at <http://www.groundwater.com/gwlist.html>.



Recent ECLAC publications on water resources management:

- "**Regulating the private supply of drinking water and sewerage services**" by Terence R. Lee and Andrei S. Jouravlev (*ECLAC Review*, N° 65, LC/G.2033-P), August 1998 (also available in Spanish). Ever since the 1970s, the governments of the region have been transferring public enterprises and other State institutions to the private sector in one manner or another. Privatization has now spread to all sectors of the economy, including drinking water supply and sewerage services. Private sector participation in the provision of such services may bring important efficiency gains, but will not on its own guarantee a lasting improvement in social welfare as these services are not provided in a competitive market. Consequently, the results will depend on effectiveness of the regulatory regime under which the privatized industries operate, and this in turn will depend on the capacity of governments to design institutional and regulatory conditions that oblige provider firms to be efficient and responsive to customers' needs. This article focuses on questions that have to be dealt with in preparing an appropriate regulatory framework for the drinking water and sewerage sector.

- “*Los precios, la propiedad y los mercados en la asignación del agua*” by Terence R. Lee and Andrei S. Jouravlev (LC/L.1097), October 1998 (*Serie Medio Ambiente y Desarrollo* N° 6). Spanish translation of the report “*Prices, property and markets in water allocation*” (see Circular N° 8).
- “*Recomendaciones de las reuniones internacionales sobre el agua: de Mar del Plata a París*” (LC/R.1865), 30 October 1998 (available in Spanish only). This report has been prepared as a contribution to the First Latin American Parliamentary Session on Water Policy and the Third Workshop for Managers of River Basin Organizations in Latin America and the Caribbean (see “*Meetings*”). The report is in two parts. The first analyses current trends in water resources management in the countries of the region, dealing with the complexity and some of the other factors that make progress towards an integrated and sustainable water resources management more difficult, in the present wave of institutional reforms in the water sector. The second part brings together information on the main international conferences on water, namely: (i) United Nations Conference on Water (Mar del Plata, Argentina, 14 to 25 March 1977); (ii) International Conference on Water and the Environment: Development issues for the 21st century (Dublin, Ireland, 26 to 31 January 1992); (iii) United Nations Conference on the Environment and Development (Rio de Janeiro, Brazil, 3 to 14 June 1992); and (iv) International Conference on Water and Sustainable Development (Paris, France, 19 to 21 March 1998).
- “*Report on the Second Workshop on Private Participation in Water Supply and Sanitation Utilities in the Americas (San José, Costa Rica, 3 to 6 February 1998)*” (LC/R.1868), 9 November 1998. This report contains a summary of the debates, along with the conclusions, programme and participant list of the Second ASCE-ECLAC Workshop on Private Participation in the Administration and Operation of Public Drinking Water and Sanitation Services (see Circular N° 8). It also contains some of the papers presented at the workshop, namely: “*Trinidad and Tobago - the stepping stones to privatisation*” by John Banyard, “*Contracting goods and services from the private sector as a means for promoting the modernisation and transformation of the public sector in Costa Rica*” by Ronaldo Calvo, “*Recent progress with cost-effective water resource activities in the Great lakes Region of North America*” by Jack Day and Douglas McTavish, “*Water and sanitation services and utilities privatisation in Latin America*” by Vinio V. Floris, “*Private sector participation in the Indian urban water supply and sanitation sector*” by Richard Franceys, “*Designing water concessions: case studies from Latin America*” by Henry Lee, “*The state of private provision of water-related services in Latin America*” by Terence R. Lee, “*Regional water supply planning - the work of the Capital Region Water Board*” by Walter R. Lyon, “*Public-private contracts: analysis and formulae for sustainability. Development and application in Mexico*” by Javier I. Morales-Reyes, and “*The law for the regulation of public water-related utilities*” by Miguel Solanes.
- “*Women in water-related processes in Latin America: current situation and research and policy proposals*” (LC/R.1864), 28 October 1998 (also available in Spanish). This report was presented by Maria Nieves Rico, of the Women and Development Unit, at the Eighth Stockholm Water Colloquium, in the workshop entitled “*Contributions of women in the field of water resources*” held from 8 to 12 August 1998 in Stockholm, Sweden. This report describes the main issues in the relationship between gender and water, either as a resource or a service, such as access to drinking water, community actions undertaken and methodologies developed to increase the active participation of women, focusing on the poverty that affects a significant proportion of the female population of Latin America. Apart from this, the report presents new areas where gender analysis has been introduced, such as the impact of global processes on public policies, water rights, investment and infrastructure, and women’s access to and participation in sectoral training and decision-making processes. Finally, some key issues for institutionalizing the gender approach in social, political, economic and environmental water problems are discussed.

The publications of the Natural Resources and Infrastructure Division are available in two formats: (i) electronic files distributed directly over the Internet as “attachments” (the most recent publications are in Microsoft Word 7.0 format, and older ones in WordPerfect 5.1 for DOS); and (ii) as printed documents, single copies of which are sent free of charge by post. Requests for copies should be sent to: ajouravlev@eclac.cl.

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Economic Commission for Latin America and the Caribbean
Natural Resources and Infrastructure Division

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Chile

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