

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



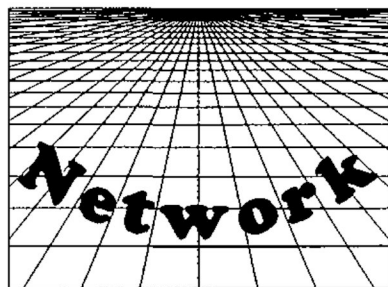
United Nations Economic Commission for Latin America and the Caribbean (ECLAC)

Nº 2 June 1995

## CIRCULAR Nº 2

*Santiago de Chile*

The second issue of the Circular marks the first milestone in the life of the Network, because it fulfils our intent to publish it on a regular basis at least twice a year. The emphasis in this issue is on planning at the level of the river basin.



Recently a number of countries in the region have demonstrated a renewed awareness of the river basin as the most appropriate unit for water resource management. It is at the river basin level that it should be possible to bring together all those concerned in the management of water resources in the public and private sectors, both those who are interested in the using water resources for production and those who are struggling to preserve them.

A major aspect of the changes that have taken place in traditional approaches to decision-making is the participation of users in the management of irrigation systems through the transfer of responsibility from government agencies to users or the improvement of traditional user participation systems. In some countries the change in responsibility for administration of irrigation systems has been accompanied by far-reaching changes in the assignment of water rights. Moreover, the development of institutions at the river basin level allows for greater management participation by users of all kinds. The World Bank document setting forth its water resource management policy

stresses the importance of user participation in the management of water systems. A recent Food and Agriculture Organization (FAO) report also emphasizes the need to delegate responsibility for the administration of irrigation projects to the actual users.

There is considerable evidence of efforts in a number of countries to increase social participation in decision-making. There is legislation in many countries proposing the creation of water resource administrations based on new, decentralized institutions. The specific proposals vary, but all of them contemplate institutions with representation of all sectors of society with an interest in water management. Past experience has shown that user-controlled water management institutions can successfully administer water systems, but it has also shown the difficulties decentralized autonomous institutions face in countries with traditions of centralized government.

The change in attitude necessary to ensure that administrations of water systems are based on a partnership between the public sector and society as a whole is not one that can be brought about solely by the need to improve water management. This does not mean that water management cannot play a leading role in the development of decentralized and autonomous institutions. It cannot be expected, however, that such institutions can come into being easily or that their development will not produce friction with existing institutions within both central and local governments and perhaps in other areas of society.

What is abundantly clear, however, is that unless there is considerable local political support for managing water resources locally and acceptance of the responsibilities that this involves, then such initiatives cannot prosper. Earlier attempts to establish water system administrations failed largely because they were imposed centrally and had no real local roots.

Finally, the hope is that this Circular will not be more than merely a vehicle for communicating ECLAC ideas. Once again we are calling on organizations in the region to pass along information on activities executed and planned, courses, seminars, publications and any observations on integrated water resource management.

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Note: This is an abridged version of Circular Nº 2 which was originally published in Spanish in March 1995.



The University of Costa Rica (Universidad de Costa Rica) (UCR) has recently joined the Network for Cooperation in Integrated Water Resource Management for Sustainable Development in Latin America and the Caribbean. UCR has set up a university committee to maintain contact with the Network, and Mr. Luis B. Villalobos, Director of the Master's Programme in Public Health, has been designated the chief contact person at UCR. The committee is responsible for disseminating information and coordinating university activities related to the Network.

UCR is part of the State University Education System of Costa Rica. It was founded in 1940, and in addition to its central Rodrigo Facio campus, it has four regional locations at various strategic points around the country.

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Among its goals, UCR aims to foster good teaching, social action, higher learning, artistic achievement, continuing education and the intellectual and professional advancement of the citizens. In order to achieve these goals, the institution offers undergraduate programmes culminating in a course work completion diploma; degree programmes leading to a bachelor's and/or licentiate degree; and postgraduate programmes leading to a master's or doctoral degree in a specialized field. In addition, under special programmes it gives extension, training and non-credit courses in a variety of areas, including the basic sciences, engineering and health.



"Management procedures for sustainable development (applicable to municipalities, micro-regions and river basins)" (LC/G.1769) is a participative planning

method developed by Axel Dourojeanni, Chief of the ECLAC Natural Resources Unit, which was originally published in 1989 by the Latin American and Caribbean Institute for Economic and Social Planning (ILPES) under the name of "Guía para orientar procesos de gestión para el desarrollo en cuencas y microrregiones de alta montaña" (Ensayos series, N° 89/05).

The method, here presented in highly condensed form, is a planning tool to assist in achieving the political goal of sustainable development within a well-defined planning sphere (e.g., a micro-region, river basin, municipality), using a highly participative approach. The method covers four interrelated management processes and describes how the different objectives of economic growth, social equity and environmental sustainability can be reconciled. The goal of a sustainable development policy is to achieve a dynamic equilibrium between the objectives of economic development (economic growth), social development (equity) and environmental development (environmental sustainability).

#### *The process of executing actions*

The chief engine of development is economic growth. In many countries experience has shown that without a minimum of economic growth it is impossible to reach greater levels of equity and environmental sustainability. Therefore, the process of executing actions, which is, in essence, what economic growth is about, is the pivotal element of the method. The process is illustrated in chart form in a vertical sequence involving ten steps:

- Identifying the **actors** (the individuals, groups or organizations actively or passively involved in management within the planning sphere) and choosing genuine representatives who will directly participate in planning as part of a negotiating forum.
- Listing and ranking the **criteria** (standards, terms of reference) that underlie the views of the actors. This determination is vital for understanding the positions the actors represent in the management process.
- Listing and ranking the **problems** (areas of disagreement) expressed by the actors on the basis of their needs and desires.
- Determining and ranking the **objectives** (goals) the actors would like to attain and establishing a **target image** (reflecting a synthesis of the objectives of the actors).

- Making an inventory, assessment and diagnosis of socio-economic factors and environmental sustainability within the planning sphere, thereby generating an **abstract shared sphere** (a multifaceted model of the planning sphere).
- Comparing the target image with the abstract shared sphere to identify the **constraints** (obstacles) that make it difficult to move directly from the actual situation to the desired situation.
- Generating and ranking alternative **solutions** (what to do?) to overcome the constraints that have been identified.
- Developing **strategies** (how to do it?) to implement solutions.
- Drawing up a timetable for the actions to be taken (**operational programmes**).
- Putting actions into effect within the planning sphere (**real shared sphere**).

#### *The process of transaction between actors*

The method is based on a participative approach aimed at enhancing equity (equality of opportunity) in regional planning. To accomplish that aim, a mechanism is needed to facilitate active participation by all actors. The process involves organizing and holding ongoing negotiations between actors.

Actors representing the various forces, both active and passive, within the planning sphere meet around a "negotiating table" to attempt to reconcile their differences as they work through the sequence of executing actions. The negotiations are coordinated by a support group, consisting of a multidisciplinary team.

It should be pointed out that the process of transaction between actors takes place through a cycle of consensus-building. Starting at a very general level of perception, at which the actors share their experiences in a round-table discussion, negotiations proceed, paralleling the action-execution sequence, until they reach the level of detailed formulation at which the definitive steps to be taken are formulated and agreed upon.

#### *The process of incorporating the environmental dimension*

The goal of maintaining the environmental sustainability of a planning sphere is addressed by this process, which essentially consists of identifying and attempting to resolve in a group context environmental problems that are often not perceived as problems by actors individually. The sequence to be followed is:

- Identifying the *actors* involved in environmental conflicts;
- Analyzing the environmental *criteria* proposed by the actors;
- Identifying the *environmental conflicts* between actors resulting from environmental impacts;
- Selecting and ranking the *conflicts to be avoided*;
- Establishing *land use priorities* in order to manage environmental conflicts;
- Identifying *constraints* in order to resolve environmental conflicts;
- Developing *solution options* for overcoming constraints;
- Designing *strategies* for applying technical solutions;
- Designing *programmes and projects* for resolving environmental conflicts; and
- *Executing* programmes and *monitoring* the environment on an on-going basis.

### *The process of integrating subject areas*

The difficulty that actors with differing professional and cultural backgrounds may have in communicating with one another is a particular problem in participative planning. The process of integrating subject areas helps actors from different disciplines (e.g., economics, sociology, ecology) to find a common ground for communication, dubbed the "plane of articulation". To do so, in the initial phase of negotiations the actors must acquire some basic multidisciplinary knowledge and define a common terminology to serve as the basis for effective negotiations.

As work progresses, an effort will be made to interweave the various disciplines to achieve a truly interdisciplinary undertaking. The idea is that each discipline involved in the project will incorporate the progress made by the others and build on it. Another way in which subject areas can be integrated is in economic terms. Economic integration entails an economic valuation of the factors that go into a particular decision, so that the negotiators have figures on which to base their decisions.

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In order to evaluate the level of acceptance of the documents it prepares, ECLAC does periodic follow-ups with questionnaires submitted to potential users of the documents. The preliminary results of the evaluation on the document, "Management procedures for sustainable development (applicable to municipalities, micro-regions

and river basins)" are in general very positive. Possibly the most important finding of the exercise was that 60 per cent of those surveyed responded that they did not have available any materials or methods like those presented in the document.

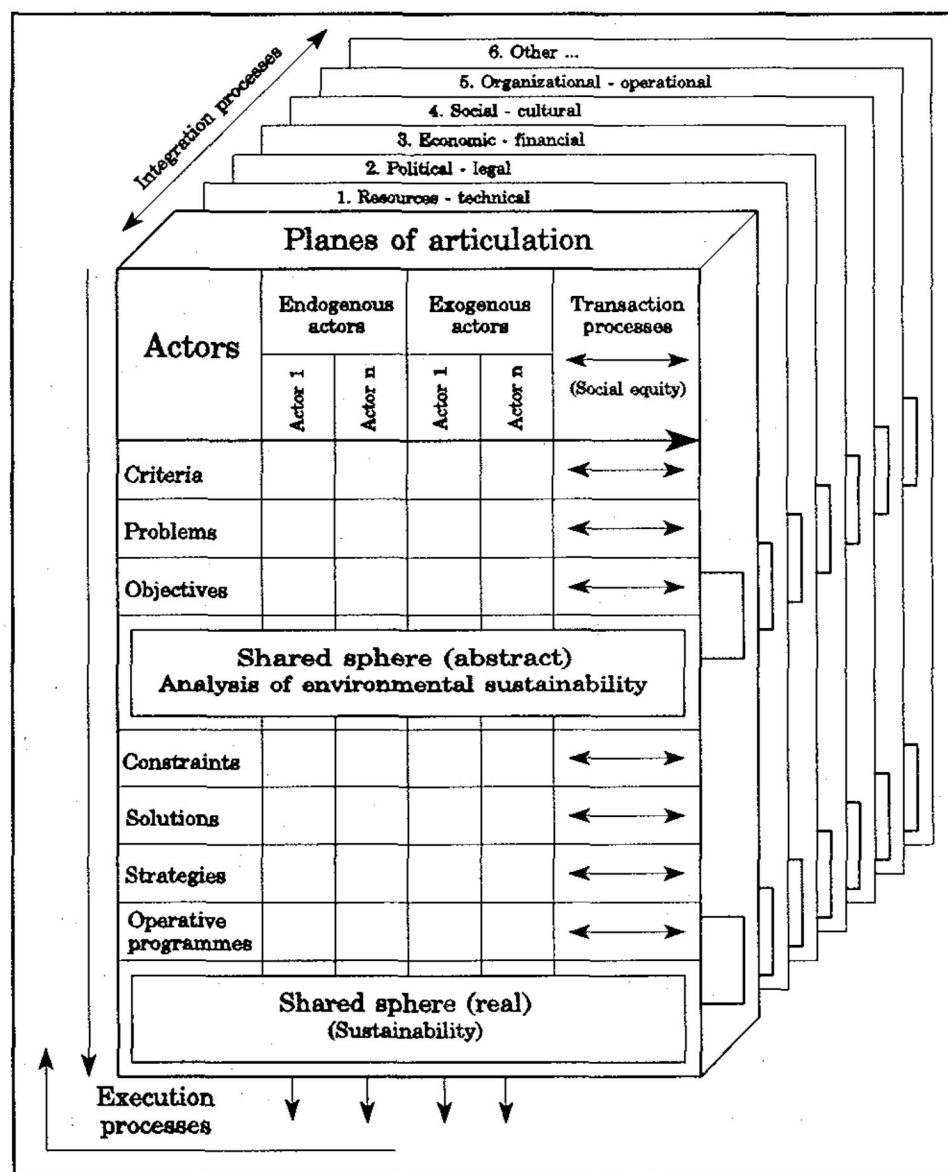
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A few months ago, for the occasion of the Second Latin American Congress on River Basin Management (Mérida, Venezuela, 1994), Axel Dourojeanni, with the collaboration of other staff members of the Natural Resources Unit, prepared a document entitled "Políticas públicas para el desarrollo sustentable: la gestión integrada de cuencas" (LC/R.1399, 21 June 1994). Although its author considers it a preliminary effort, but very necessary in order to tackle the topic in a systematic fashion, the work compiles and organizes material usually

found widely scattered and hence hard to obtain for those involved in river basin management, and it also makes some original contributions, such as a new classification of the various ways of approaching the subject of river basins.

The chief reason for summarizing in one document the experience garnered from over 30 years of work on river basin management is the renewed interest demonstrated by national and regional authorities in organizing river basin authorities. There are a number of legislative bills being considered and others that have already been passed that support the creation of river basin authorities.

The motivating forces are essentially the intensifying competition for water and the increasingly catastrophic impact of natural



phenomena on human life and economics. Moreover, the environmental issue has reached a point where it requires a concrete response that can only be provided through adequate systems of management. In terms of its practical application, the document complements "Management procedures for sustainable development" and will be discussed in greater detail in one of the upcoming issues of the Circular.

## Meetings



Below is the schedule of ECLAC meetings in 1995 related to water resource management (some dates are still to be confirmed):

- Workshop on *"The need of the insurance industry for meteorological and hydrological data"*, September 1995 (ECLAC/World Meteorological Organization (WMO)).
- Workshop on *"The privatization of water utilities in the Americas"*, October 4-6, 1995 (Task Committee on Privatization of Water Utilities in the Americas; International Water Resources Activities Committee; Water Resources Planning and Management Division, American Society of Civil Engineers; ECLAC).
- Workshop on *"The effects of Agenda 21 on integrated water resource management"*, November 1995 (ECLAC/United Nations Environment Programme (UNEP)).

## Courses



INCYTH/CELAA

The Network for Cooperation in Integrated Water Resource Management for Sustainable Development in Latin America and the Caribbean is pleased to inform its members about the following courses and activities scheduled for 1995 by the National Institute of Water Sciences and Technologies

(INCYTH), Centre for Water Resource and Environment Economics, Legislation and Management (CELAA):

### *Developing methods for an economic assessment of environmental impacts*

**Date:** 10-15 July 1995  
**Place:** INCYTH - CELAA headquarters in Mendoza, Argentina  
**Objective:** To improve the tools available for making an economic assessment of the environmental impact of projects and formulating measures to mitigate it.  
**Description:** An interdisciplinary encounter between specialists on water resources and the environment and experienced economists, at which they can work systematically at identifying the relevant problems, developing assessment methods and improving the design of investment and sustainable development projects. In all cases the emphasis will be on tools for the legal, economic, institutional and administrative aspects of management.  
**Coordinator:** Armando Llop

### *Course on law, economics and administration in relation to integrated water resource management at the watershed level*

**Date:** 2-6 October 1995  
**Place:** INCYTH - CELAA headquarters in Mendoza, Argentina  
**Objective:** To provide interdisciplinary training in system-wide (inter-institutional, intersectoral and interregional) management of natural resources (particularly water resources), environmental systems and strategic components of hydrographic basins and to utilize methodological tools to improve the management of organizations involved in such activities. The course is intended for administrators and technical managers of the various institutions (public or private) in charge of managing natural resources and the

environment, generally those responsible for setting guidelines or standards, for planning, evaluation or advisory functions, or for directing particular projects or programmes. Individuals involved in the field as instructors or in other professional capacities will also be included.

For further information about scheduled events, contact INCYTH-CELAA headquarters at the following address and telephone numbers:

INCYTH-CELAA  
 Casilla de Correo 589  
 5500 Mendoza, Argentina  
 Belgrano 210 Oeste 5500  
 Mendoza, Argentina

Tel: 287921 and 288420 Fax: 285416

**Description:** The course/workshop will approach the problems of watershed management through an interdisciplinary, intersectoral and inter-institutional analysis. To accomplish this, two types of activities are planned. First, CELAA professors will give presentations on specific topics relating to the strategic components of watershed systems in arid zones, such as managing the quality and quantity of water, soil conservation, managing environmental hazards (floods, mudslides, etc.). They will also take up specific aspects of the management of such systems, such as economic assessment of environmental impacts, management techniques for complex systems, inter-institutional coordination, legal issues, etc. The second type of activity planned will involve the formation of working groups to deal with specific topics and cases. These groups, which will be interdisciplinary and intersectoral, will put together the principal methods for approaching the problems considered most serious and will suggest courses of action. The



subjects dealt with will comprise the most important elements in achieving economic development while preserving the environment (sustainable development). From the sectoral standpoint, the issues covered will include the following: environmental systems; problems of mountain watersheds and broad river basins; environmental systems of arid zones; environmental impacts on complex systems; irrigation, salinity and contamination; urban pollution; industrial pollution; reuse of effluents for irrigation; drinking water and sanitation; degradation of natural resources; and agriculture and sustainable development.

Coordinator: Armando Llop

### International Irrigation Center

The following are the courses scheduled by the International Irrigation Center for 1995 and 1996:

#### Course schedule for 1995

Course: *Water management; field trip through the western United States*  
Date: 30 July - 19 August  
Duration: 3 weeks  
Place: Utah, Colorado, Arizona, California  
Cost: US\$ 3,000.00

Course: *Transferring water system management and organizing users*

Cost: US\$ 4,500.00

#### Course schedule for 1996

Course: *Designing drip and sprinkler irrigation systems (in combination with the course on microcomputers)*  
Date: 2 January - 16 March  
Duration: 11 weeks  
Place: Logan, Utah  
Cost: US\$ 7,195.00 (non-credit course)/US\$ 7,595.00 (credit course)

Course: *Using microcomputers for irrigation and drainage; communication networks*  
Date: 7 January - 17 February  
Duration: 6 weeks  
Place: Logan, Utah  
Cost: US\$ 4,375.00

Course: *Optional two weeks of the previous course*  
Date: 20 February - 4 March  
Duration: 2 weeks  
Place: Logan, Utah  
Cost: US\$ 1,350.00

Course: *Designing, assessing and programming irrigation on the ranch*  
Date: 26 April - 6 June  
Duration: 6 weeks  
Place: Logan and Delta, Utah  
Cost: US\$ 4,375.00

For further information contact:

International Irrigation Center  
Department of Biological and Irrigational Engineering  
Utah State University  
Logan, Utah 84322-4501  
USA

### CIDIAT

In a previous issue of the Circular (see Circular Nº 1a (supplement)), the Network had the pleasure of informing its participants about the 1995 schedule of activities for the "Regional Training Programme in the Management of the Environment and Conservation of Natural Resources" to be given by the Inter-American Center for Environmental and Territorial Development and research (CIDIAT) as part of a technical cooperation agreement with the Inter-American Development Bank (IDB).

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### University of Concepción

The Centre for Resource Economics of the Faculty of Economic and Administrative Sciences and the European/Latin American Centre for Research and Training in the Environmental Sciences (EULA) at University of Concepción, in a effort to meet the demand in the region for a highly advanced postgraduate programme in the economics of natural resources and the environment, have decided to develop a *Master's Programme in Natural Resource and Environmental Economics* intended primarily for professionals and academics in Latin America and the Caribbean.

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_3538](https://www.yunbaogao.cn/report/index/report?reportId=5_3538)

