



**RESEAU INTERNATIONAL DES ORGANISMES DE BASSIN
INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS**

**Paper of
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AN URGENT Adaptation of water management to climate change is needed

Global warming cannot now be avoided.

Fresh water resources will be directly affected in the coming years, with announced consequences:

- **increase of extreme hydrological phenomena, such as droughts and floods, with the risk of human losses, destructions and catastrophic economic damage,**
- **melting of glaciers, reduction of the snow cover in mountains, which, then, will not be able to play their irreplaceable ROLE of « water towers of the planet », by ensuring flow regulation in the large rivers, which are born there,**
- **modification of the plant species and soil cover, which will result in increased erosion, and changes in agriculture production,**
- **increase of sea and ocean level, which is likely to drown the coral islands of the Indian and Pacific Oceans, but also coastal lowlands, especially the polders areas, as well as river deltas and mouths, the flow of which will be modified.**

Very wide areas of human and economic life will be seriously threatened,

- **inland salt water intrusion, such as salted water wedge in coastal aquifers,**
- **significant move of populations.**

The demographic, economic and ecological consequences are likely to be very significant.

It is thus essential to adapt water resources management policies, by taking into account the new elements of the climate change.

It is especially necessary to quickly evaluate the hydrological consequences of this change, according to various scenarios, to increase the thinking about and prospective, by developing adapted research programs.

In this respect, anticipation measures for these changes should be planned at the level of each river basin for the coming years, , within the framework, in particular, of basin management plans or master plans and of programs of measures for the practical implementation of their objectives.

the climate change is likely to increase the frequency of extreme events, such as floods and droughts:

With regard to floods:

- It is, first, necessary to make the « upstream-downstream » common cause a main item of consistent management on the scale of basins and sub-basins,
- In the transboundary basins in particular, cooperation between riparian States, for jointly looking for coordinated solutions and for sharing responsibilities, should be promoted,
- Protection against floods must pass through a coordinated approach, combining:
 - the protection of people and properties,
 - the reduction of vulnerabilities,
 - the restoration of the open flows of rivers,
 - the conservation and the re-building of the natural flood storage areas,
 - the forecasting of events,
 - the identification of zones at risk,
 - the publication of « atlases » of easily flooded zones,
 - the control of urbanization,
 - warning and education.
- International circles of exchanges on flood management are useful platforms to improve our common knowledge.

With regard to droughts:

- The availability of fresh water - in sufficient quantity and quality - MAY become, in a generation from now, one of the main limiting factors of the economic and social development in many countries.
- The prevention of recurring droughts can, no more, be done on a case-by-case basis, but must be planned in the long term, by solving the structural problems which occur, in order to prevent, in the best possible way, their effects and to avoid the total degradation of water resources.
- Mobilizing new resources should be planned when they are ecologically acceptable and economically reasonable.
- Plans for the Management of Water Scarcity should prioritize drinking water supply, making sure that water is equitably and soundly shared between the various uses, ensuring a better optimization of water and avoiding wastages.
- They must ensure a better optimization of existing water resources, before planning the launching of projects for the mobilization of new resources.
- Water saving, leak detection, recycling, the reuse of treated water, groundwater recharge, the desalination of sea water, research on low-consumption uses, must become priorities.

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It is essential to very quickly strengthen, on a worldwide scale, the actions necessary to ensure a true integrated water resources management: I – W – R – M.

Freshwater resources are limited and threatened all over the world and their better governance, respectful of the environment, is one of the main keys to sustainable development:

Freshwater is essential to sustain life on our planet and ensure the health, peace and socioeconomic progress of our societies.

Climate change, pollution, wastage, destruction of ecosystems...

The seriousness of the situation in many countries requires that comprehensive, integrated and consistent management of water resources - respecting the aquatic ecosystems and territories - is implemented to preserve the future and the human heritage.

The Millennium Goals for drinking water supply and sanitation can only be achieved with significant and simultaneous progress made to introduce "I.W.R.M." - organized on the relevant scale of basins of rivers, lakes and aquifers, either local, national or transboundary.

These basins are the relevant natural geographical territories, in which to organize this sound management.

Indeed, basins are the natural territories, in which water runs on the soil or in the sub soil, whatever are the national or administrative boundaries or limits crossed.

Significant progress has already been made since the ninety/s:

The gained experience allows now to say that "I.W.R.M.", Is a real advantage for governance, AND should be organized:

1) on the scale of local, national or transboundary basins of rivers, lakes and aquifers;

2) based on integrated information systems, allowing knowledge on resources and their uses, polluting pressures, ecosystems and their functioning, the follow-up of their evolutions and risk assessment.

These information systems will have to be used as an objective basis for dialogue, negotiation, decision-making and evaluation of undertaken actions, as well as coordination of financing from the various donors;

3) based on management plans or master plans, that define the medium and long-term objectives to be achieved;

4) through the development of Programs of Measures and successive multiyear priority investments;

5) with the mobilization of specific financial resources, based on the « polluter-pays » principle and « user-pays » systems;

6) with the participation in decision-making of the concerned Governmental Administrations and local Authorities, the representatives of different categories of users and associations for environmental protection or of public interest.

Indeed, this concerted participation will ensure the social and economic acceptability of decisions, taking into account the real needs, the provisions to be acted upon and the contribution capabilities of the stakeholders in social and economic life.

Decentralization is the basis for effectiveness in water policies.

Legal and institutional frameworks should allow the application of these six principles.

Water has no national or administrative boundary:

It is especially necessary to take into account the particular situation of the 274 rivers or lakes and hundreds of aquifers, the basins of which are shared by at least two riparian countries or more.

Cooperation agreements need to be initiated or signed between the riparian countries of transboundary basins to achieve indispensable common cause at this level.

It seems necessary to support the creation of International Commissions, or similar organizations, and to strengthen those already existing.

in particular, Agreements for transboundary aquifer management should be developed, taking into account their fragility,

Improving knowledge, of water resources, aquatic environments and of their uses, is essential to allow decision-making.

It is recommended to the Public Authorities to consider the setting-up of comprehensive information systems, as a preliminary obligation and to promote their creation.

Systems for warning against floods, droughts and pollution should be developed and coordinated, for better facing the natural disasters caused by water and for protecting human lives and properties.

It is essential to specify the institutions responsible for the organization and the permanent operation of such systems and to guarantee not only sufficient means for the corresponding investments, but also, and in an imperative way, financial mechanisms, allowing their continuous operation on the long term.

It is necessary to promote the emergence of competences in this field and to support any work aiming at defining common standards and nomenclatures for data administration, in order to allow exchanges, comparisons and syntheses of information between partners at all the relevant levels of observation.

In particular, the islands are systems, which offer a wide range of biodiversity. Their ecosystems and socioeconomic entities are usually fragile;

Cooperation between the islands, in relation to this matter, should be strengthened.

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In this context, the International Network of Basin Organizations – “I – N – B – O” – is a non-profit association, which has the following objectives:

□ to develop lasting relations between the organizations interested in, and favor exchanges of experiences and expertise among them,

□ to promote the principles and means of sound water management to reach sustainable development,

□ to facilitate the implementation of THE suitable tools,

□ to promote information and training programs,

□ to encourage education of the population,

□ to evaluate ongoing actions and disseminate their results.

The Network relies on its members' willingness to work together.

The following legal entities may be members of INBO:

- “Basin Organizations”, indeed,
- the governmental administrations interested in applying “I.W.R.M.” at basin level,
- bi and multilateral co-operation agencies supporting activities related to “I.W.R.M.”.

INBO members, belonging to the same geographic region, may create their own “Regional Network”,

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Conclusion;

Integrated and sound water resources management is more than ever a priority, if we do not want this scarce resource to become one of the limiting factors for sustainable development in many countries of the world.

Organizing this management on the basin scale seems efficient.

However, the time lost becomes worrying and unprecedented mobilization becomes essential so that humanity wins the water battle and prepares the future.