



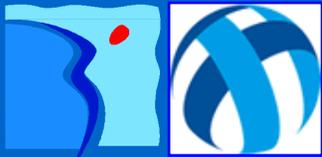
*IV International Symposium on Transboundary Waters*  
Thessaloniki - Greece, from October 15th to 18th, 2008



## 流域组织国际网

Международная сеть водохозяйственных организаций,  
Réseau International des Organismes de Bassin  
International Network of Basin Organizations  
Red Internacional de Organismos de Cuenca

الشبكة الدولية لهيئات الأحواض



*IV International Symposium on Transboundary Waters*  
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流域组织国际网

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**PROGRESS REPORT**

**of**

**Mr. Jean - François DONZIER**

**General Manager**

**International Office for Water**

**Permanent Technical Secretary**

**INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS**



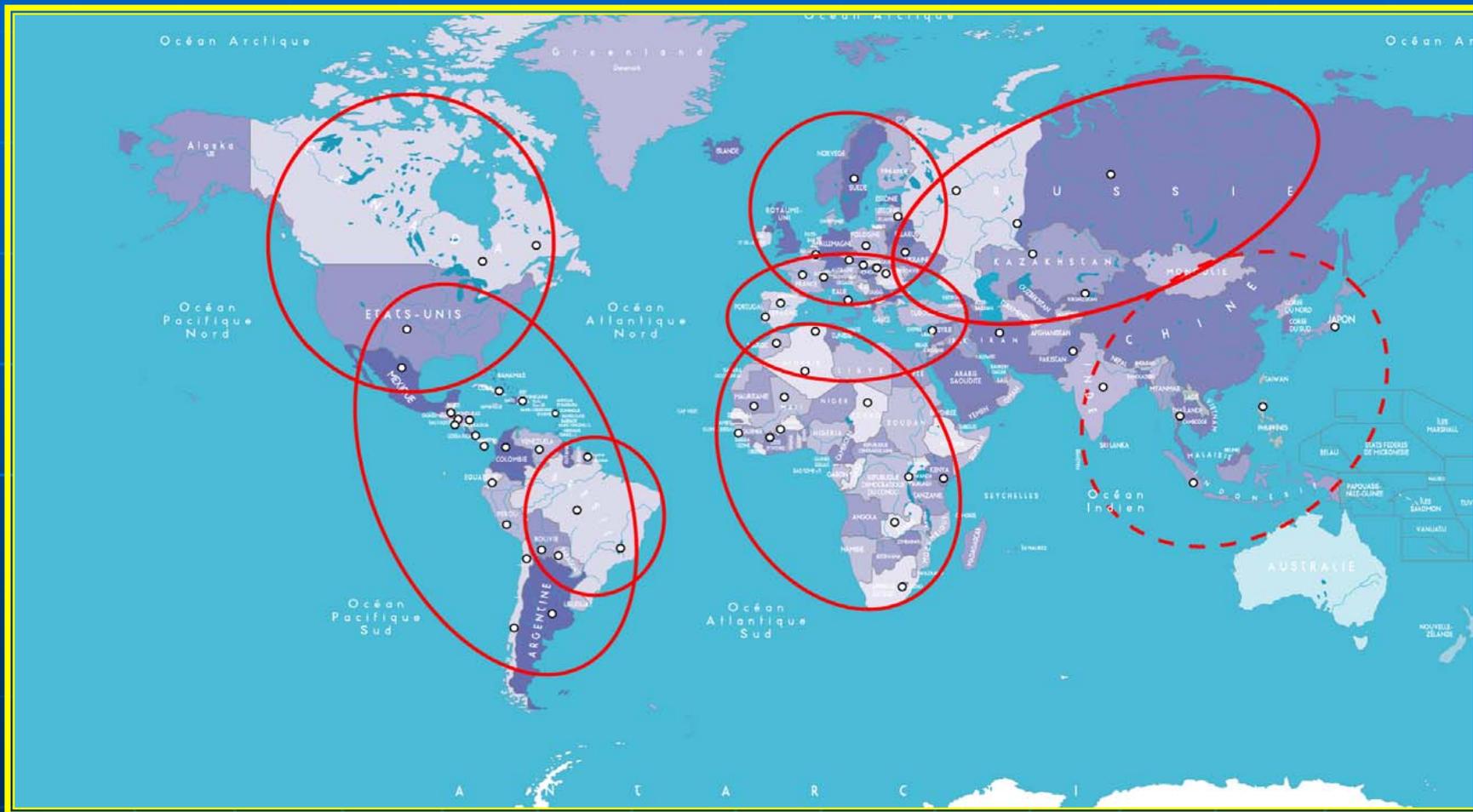
# International Network of Basin Organisations:



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Of Basin  
Organizations

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For Water  
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185 FULL MEMBERS or PERMANENT OBSERVERS  
in 68 COUNTRIES!



Permanent Technical Secretariat operated by International Office for Water, PARIS



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## **5th World Water Forum ISTANBUL 2009**

5th WORLD WATER FORUM  
ISTANBUL 2009



**BRIDGING  
DIVIDES  
FOR WATER**



**INBO and UNESCO serve jointly  
for the preparation, animation and coordination of topic 3.1:  
"Basin Management and Transboundary Cooperation".**



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# 4 questions were selected:



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**What are the success and failures stories of hydro solidarity and IWRM at basin level?**

**How to organize and enable stakeholders participation ?**

*How can transboundary water resources be managed more sustainably by all the riparian countries concerned?*

*What are the tools to be used for better basin management and transboundary cooperation over surface and ground water ?*



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# TOWARDS A GLOBAL WATER CRISIS?

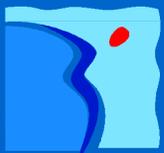


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## WATER OVER THE WORLD, A worrying situation!



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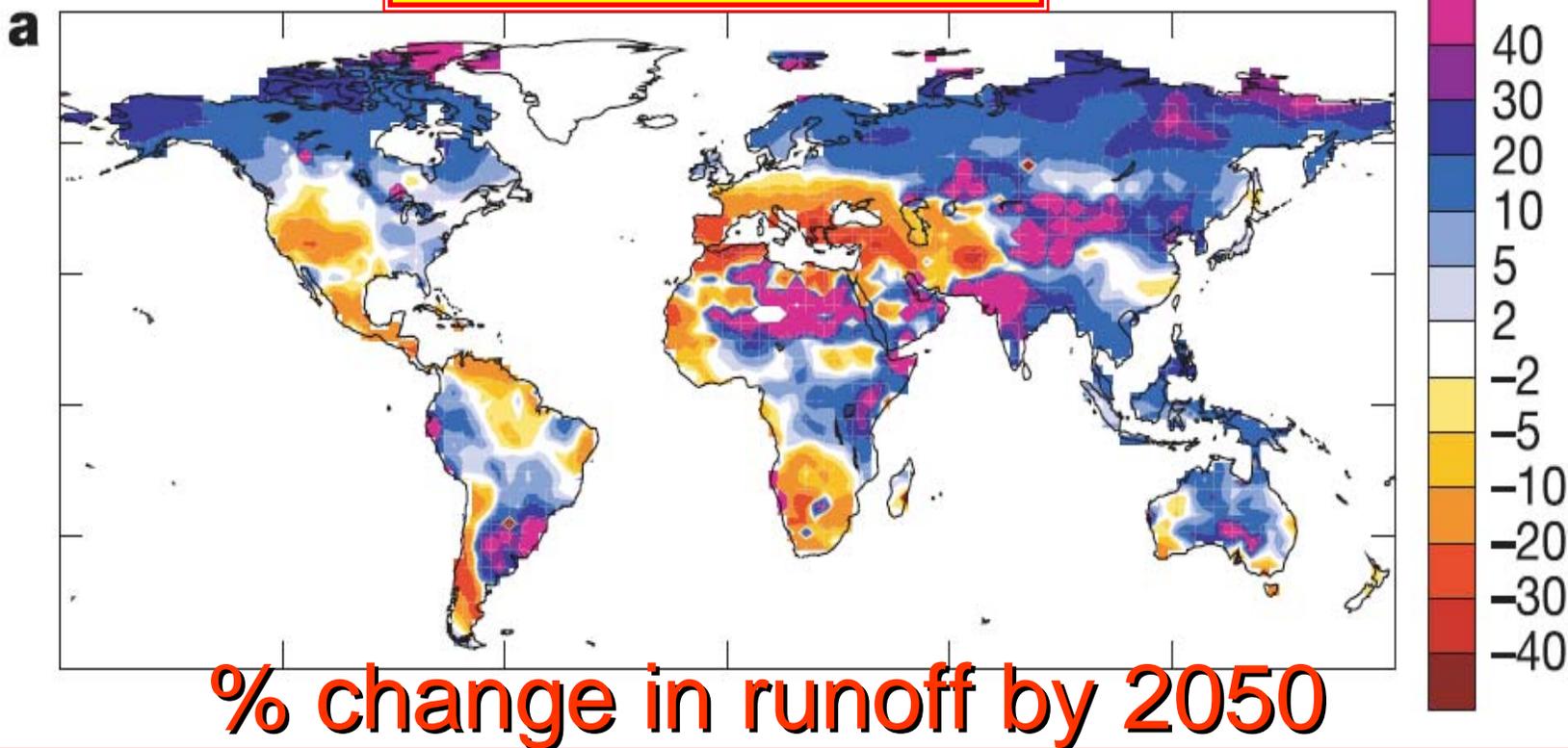
# Global warming cannot now be avoided.

Fresh water resources  
will be directly affected in the coming years!



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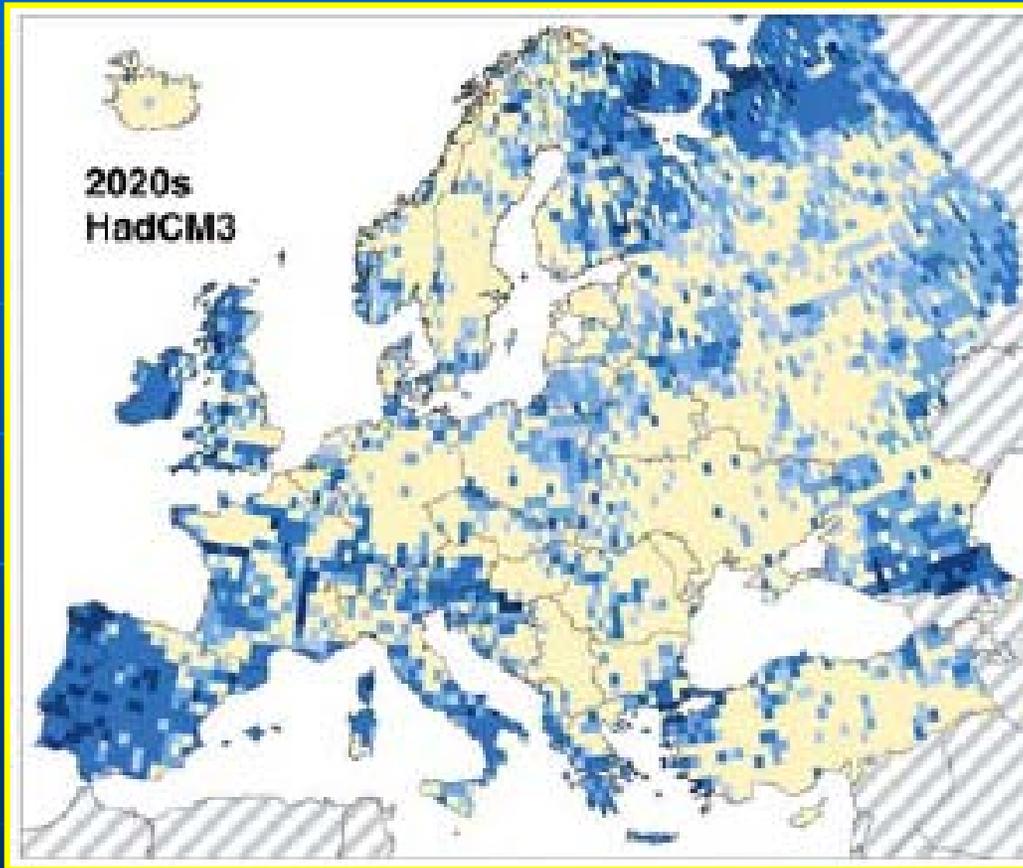
water availability



- Many of the major “food-bowls” of the world are projected to become significantly drier
- Globally there will be more precipitation
- Higher temperatures will tend to reduce run off
- A few important areas drier (Mediterranean, southern South America, northern Brazil, west and south Africa)



# Europe: Changing flood frequency



- Over much of Europe ,  
“ one in a hundred year floods”  
will occur  
every couple  
of decades





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# Global warming

- A few important areas drier:
  - Mediterranean,
  - southern South America,
  - northern Brazil,
  - west and south Africa...

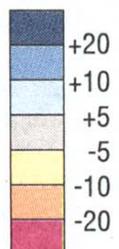


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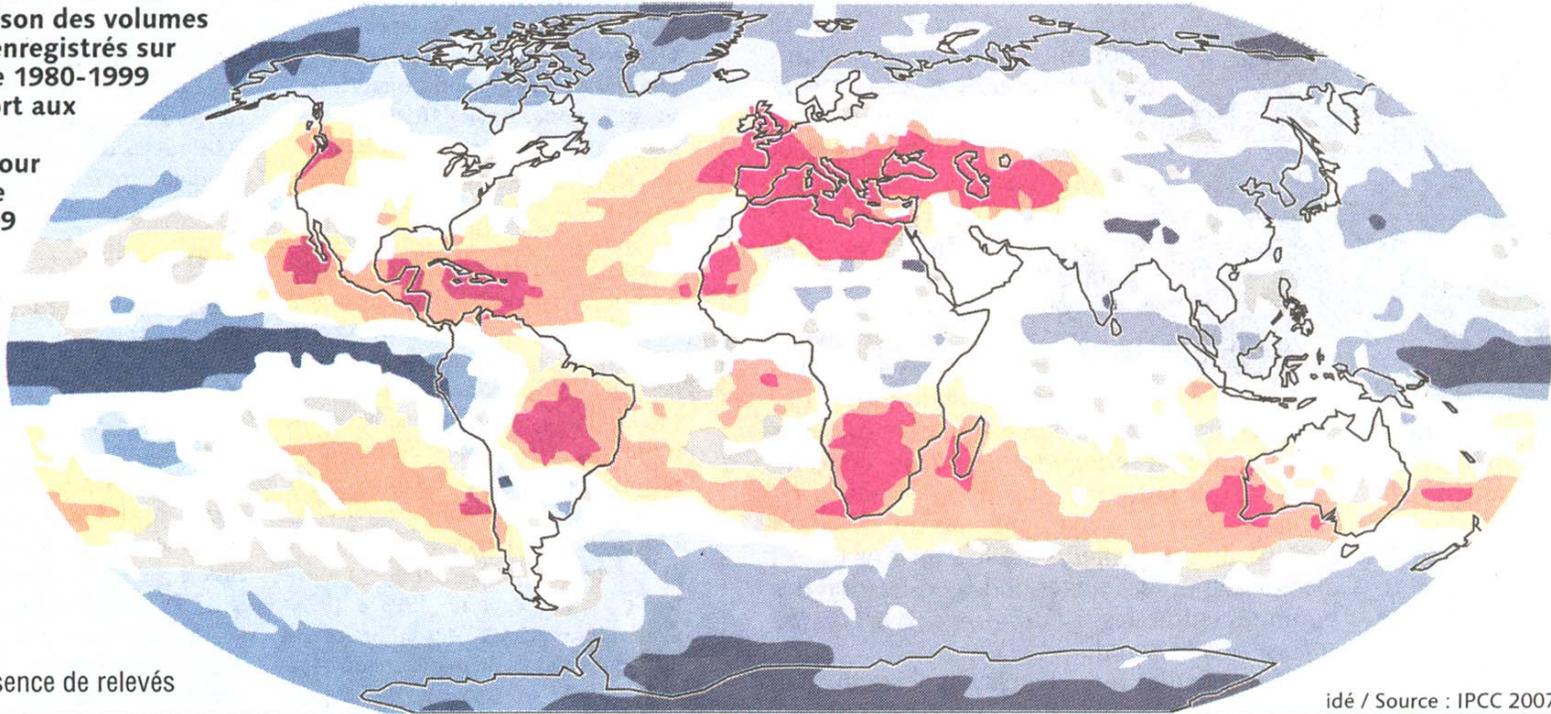
## Projection de précipitations estivales pour 2099

Comparaison des volumes  
de pluie enregistrés sur  
la période 1980-1999  
par rapport aux  
volumes  
évalués pour  
la période  
2090-2099

En %



Absence de relevés



idé / Source : IPCC 2007

Tous les modèles convergent pour prédire une forte chute des précipitations dans le pourtour du bassin méditerranéen en été.



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**water resources management should be organized:**



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

**A solution?**

**IWRM: Integrated Water Resources Management**



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**water resources management should be organized:**



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- 4) through the development of Programs of Measures and 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.

**A solution?**

**IWRM: Integrated Water Resources Management**



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**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.**



**An overall approach should be organized  
on the relevant scale  
of basin areas of rivers, lakes and aquifers,**



# « UPSTREAM-DOWNSTREAM » COMMON CAUSE ON THE SCALE OF BASINS AND SUB-BASINS



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Sub-basin/Sector/  
Water type

element of district to deal with particular aspects

Heavily modified water bodies (HMWB): human activity carried out makes it impossible to reach the goal without disproportionate costs (change activity...)

⇒ *no link with pollution*

## THE DIFFERENT HYDROLOGICAL SCALES:

Water bodies  
scale of evaluation of the achievement of good status

District =  
river basins + associated groundwaters and coastal waters





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# TWO HUNDRED AND SIXTY THREE RIVERS OR LAKES AND HUNDREDS OF AQUIFERS ARE TRANSBOUNDARY ONES



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## *Transboundary basins per continent.*

		<i>2002</i>	<i>Pourcentage du territoire</i>
<i>Afrique</i>		<b>59</b>	<b>62 %</b>
<i>Asie</i>		<b>57</b>	<b>39 %</b>
<i>Europe</i>		<b>69</b>	<b>54 %</b>
<i>Amerique du Nord</i>		<b>40</b>	<b>35 %</b>
<i>Amerique du Sud</i>		<b>38</b>	<b>60 %</b>
<b><i>TOTAL</i></b>		<b><i>263</i></b>	<b><i>45 %</i></b>



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# In Europe a majority of basins are transboundary ones!



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International River Basins of

## EUROPE



© Copyright Transboundary Freshwater Dispute Database, 2000

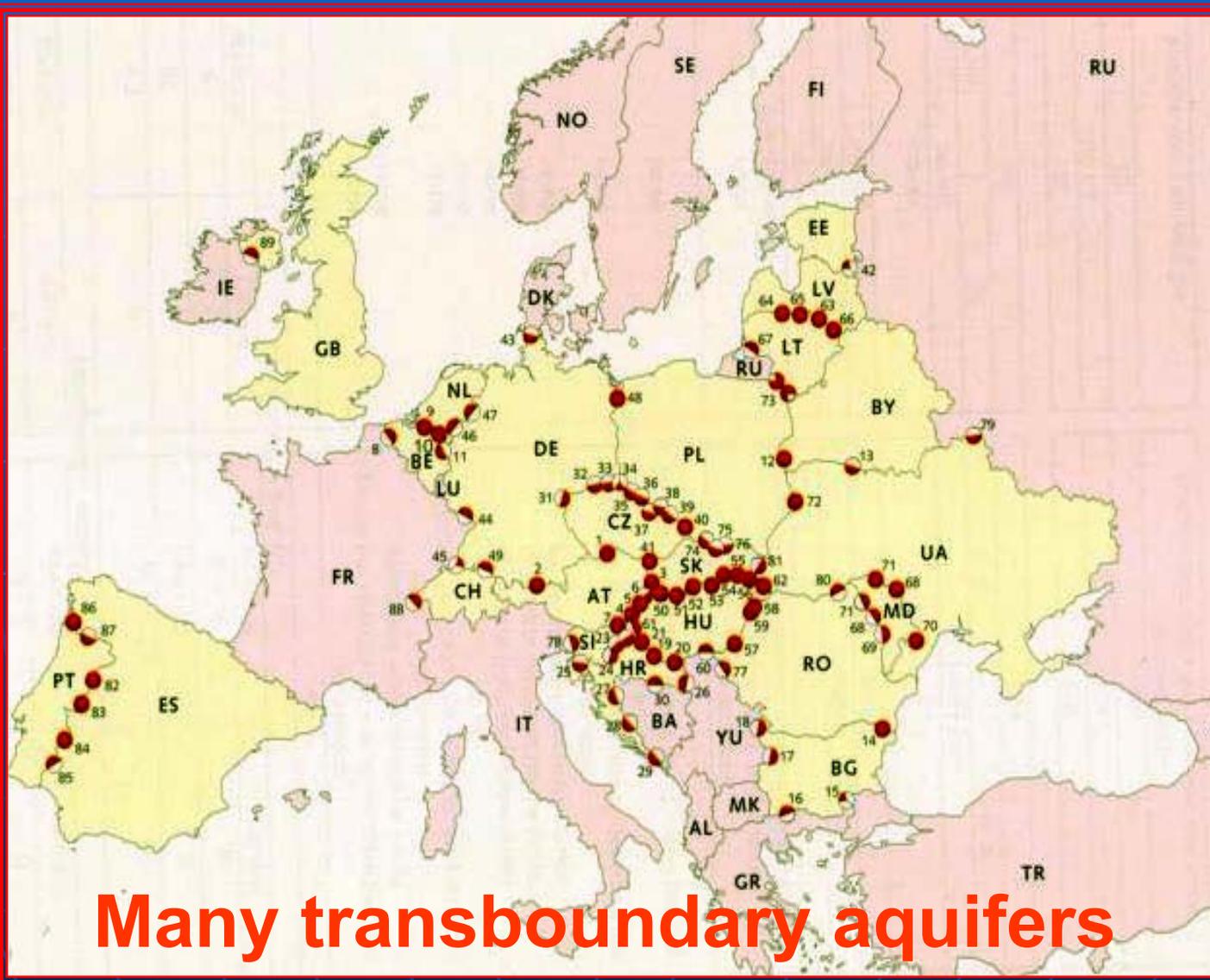
# The aquifers in Europe are also concerned:



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# INTEGRATED WATER RESOURCE MANAGEMENT :



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## DEFINING ROLES AND RESPONSIBILITIES OF EACH:



**basin organizations?**



**Multilateral organizations**

**International commissions**

**Central or federal government**

**Local authorities = states (Federation)  
= municipalities  
= villages**

**Large public regional planners**

**Water users : = community**

**= individuals**

**Civil Society : = enterprises  
= researchers  
= NGOs**



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## DEFINING ROLES AND RESPONSIBILITIES OF EACH:



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- **A clear legal framework** must specify, in each country, the rights and obligations, the possible levels of decentralization, the institutional responsibilities of the different stakeholders, the processes and means needed for good water governance,



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# GENERAL ASSEMBLY

*The Martinique, 24 – 28 January 2004*

## « DECLARATION OF TROIS-ILETS »



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- As regards large transboundary rivers, lakes or aquifers cooperation agreements should be signed by riparian countries and management plans designed at the level of all the basins, especially in International or transboundary Commissions, Authorities or Organizations.



# BASIN ORGANIZATIONS AND IWRM



According to the needs, local situations and history,

- Various formulas were adopted to organize some of the functions useful for water management at the level of the basins (Organizations listed by INBO),
- There is a great diversity in the mandates and selected options.
- One can mention:



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## DIFFERENT TYPES OF BASIN ORGANIZATIONS:



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- **Administrative Commissions, with or without permanent secretariat,** in which mainly participate representatives of the « ministries » concerned to coordinate their various projects on the same river or aquifer, to exchange information or data, formalized or not, on emergency situations in particular, to define common rules (navigation, etc.), and whenever necessary, to allocate the available resources between the categories of uses, the countries or regions, especially in periods of crisis or when regulation structures do exist, etc.,
- **Arbitration « Authorities »,** to which the interested « parties » refer for decision-making on the conflicts which arise; this is the case of the **Joint International Commission** (IJC) between the USA and Canada, for example.



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## DIFFERENT TYPES OF BASIN ORGANIZATIONS:



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- **Organizations taking charge of contracting large structuring or combined installations;** this is the case for navigation, flood control, the building of reservoirs, especially for irrigation, hydropower production, etc.  
These organizations, often created as public or private « companies » have usually the concession of community facilities for which they are responsible for their construction and long-term management, generally for providing services, raw water or by levying specific taxes.
- **« Agencies »,** which are in charge of carrying out tasks for medium-term planning and for collecting taxes on abstractions and discharges to finance or support the investments necessary for achieving the set objectives. In some cases, they can also be responsible for water policing, studies, data production or collection, etc.



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## DIFFERENT TYPES OF BASIN ORGANIZATIONS:



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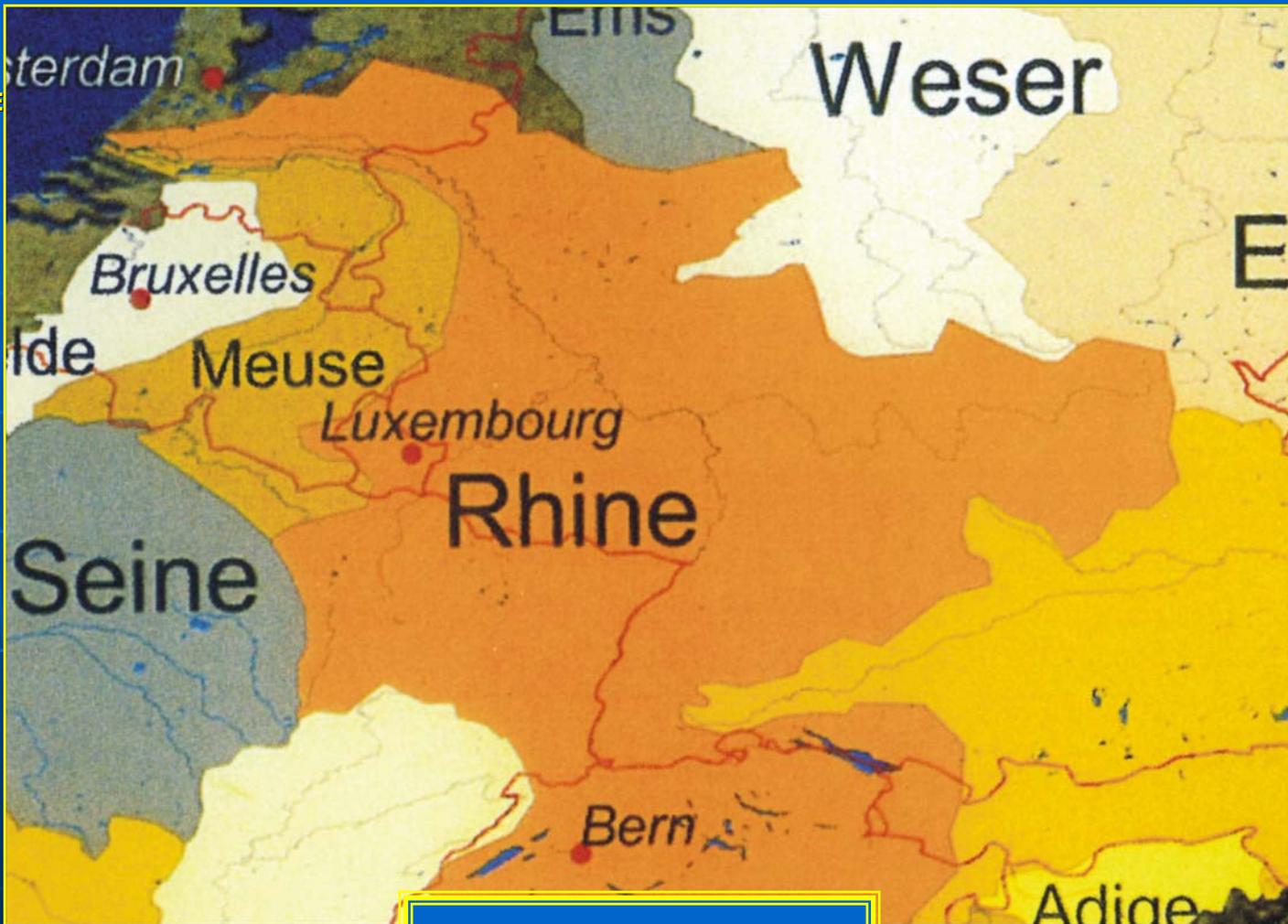
- **« Basin Committees or Councils »**, which gather, at the side of administrations, representatives of local authorities, economic sectors using water, the civil society, etc. They can be advisory or decisional, especially regarding planning, the definition of taxes, the allocation of available resources, etc.
- **« Associations, unions or consortiums »**, of local authorities, users or NGOs, which are often spontaneously organized to solve a common problem or to have some influence in water management.
- **« Projects »**, which are usually temporary for specifically implementing and action plan with specific financing.



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**RHINE**



# The Rhine :

## an international river basin district

(WFD, art 3.3)

### 9 States involved

- Austria
- Belgium
- France
- Germany
- Italy
- Liechtenstein
- Luxemburg
- Switzerland
- The Netherlands

9 working sectors ...

185 000 km<sup>2</sup>  
50 millions inhabitants



**Secretariat**

**Plenary assembly (PLEN)  
Coordination Committee (CC)**  
Delegation Head

**Strategy Group (SG)**  
Editorial Group



**Riparian states \***

\*cf. Diagram 2: Expert coordination / Coordination of reporting

**RHINE**



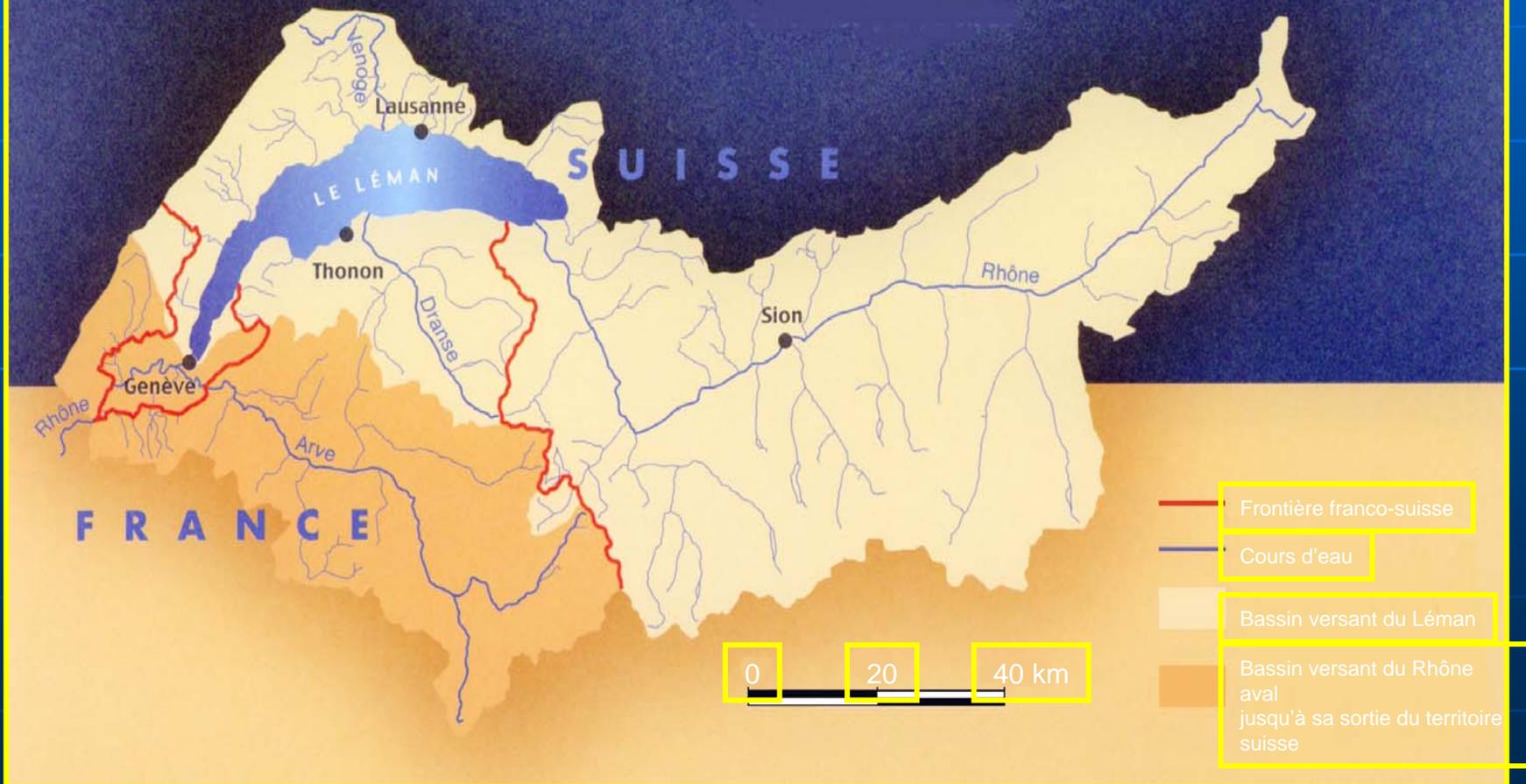
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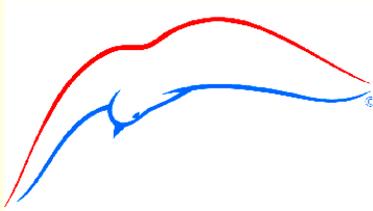
# International Commission for the Léman Lake



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## Zone géographique concernée par la CIPEL





Vaud  
Valais  
Genève



Secrétariat  
permanent

Collaboration F - CH  
en cas de pollution

Relations  
publiques

International  
Commission  
for  
the Léman Lake

**Sous-commission technique**

Comité  
opérationnel

Bureau

Conseil  
scientifique

Programme de surveillance

Pollutions  
domestiques

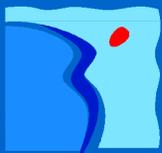
Pollutions  
agricoles

Pollutions  
industrielles

Renaturation

Méthodologie

Subvention à la  
déphosphatation



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# INTEGRATED WATER RESOURCE MANAGEMENT

- OVERALL MEETING OF RATIONAL AND LEGITIMATE DEMANDS
  - Agriculture
  - Domestic uses
  - Industry
  - Fish farming
  - Electricity
  - Transports
  - Leisure
  - Fishing
- WASTEWATER TREATMENT AND RECYCLING,
- CONSERVATION OF ECOSYSTEMS:  
rivers, lakes, wetlands, aquifers, costal areas,
- RISK PREVENTION :
  - Erosion
  - Drought
  - Floods



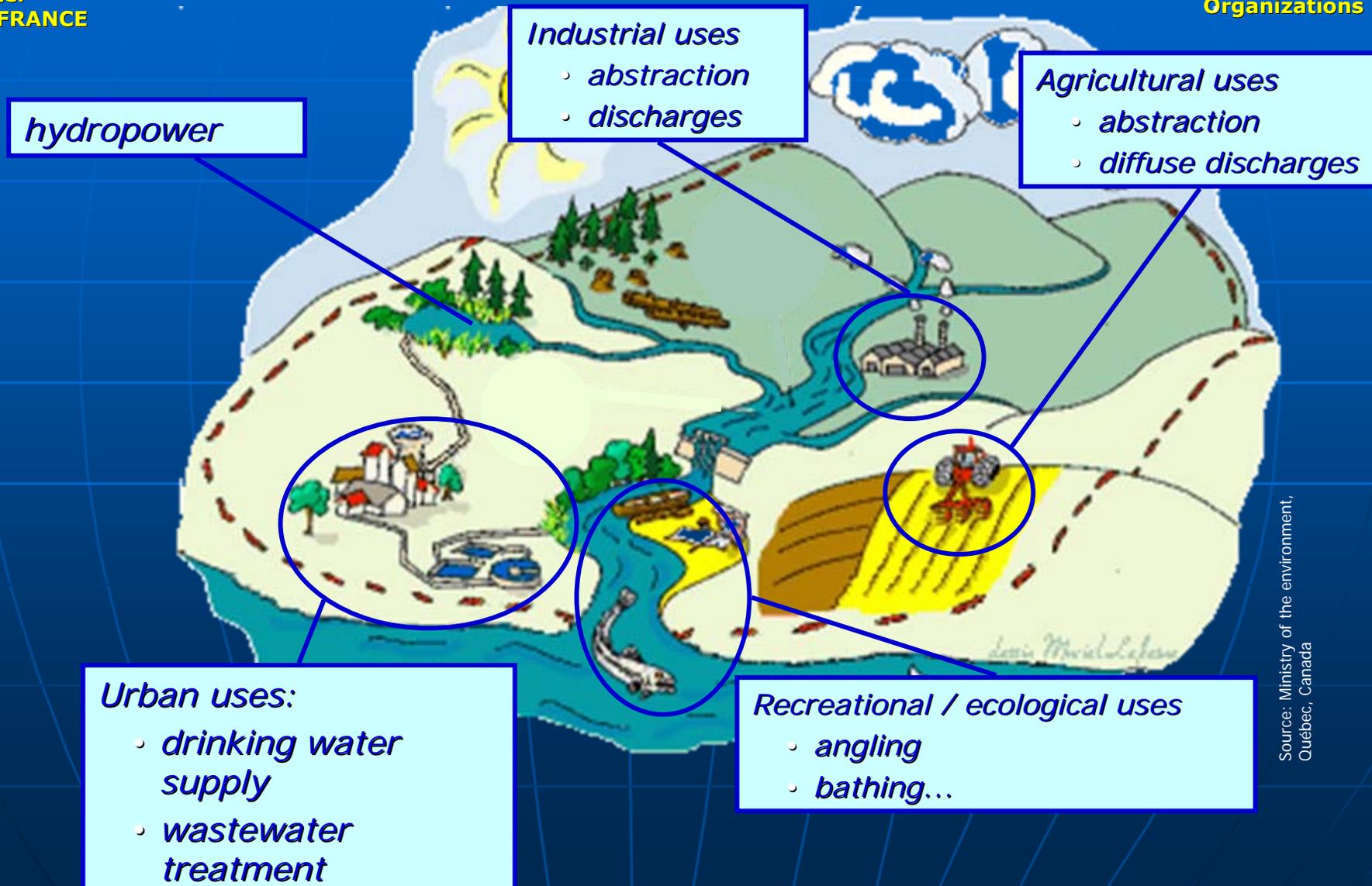
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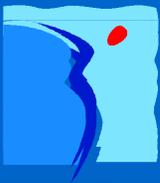
# IWRM CONCERNS

## ALL MAJOR WATER USES



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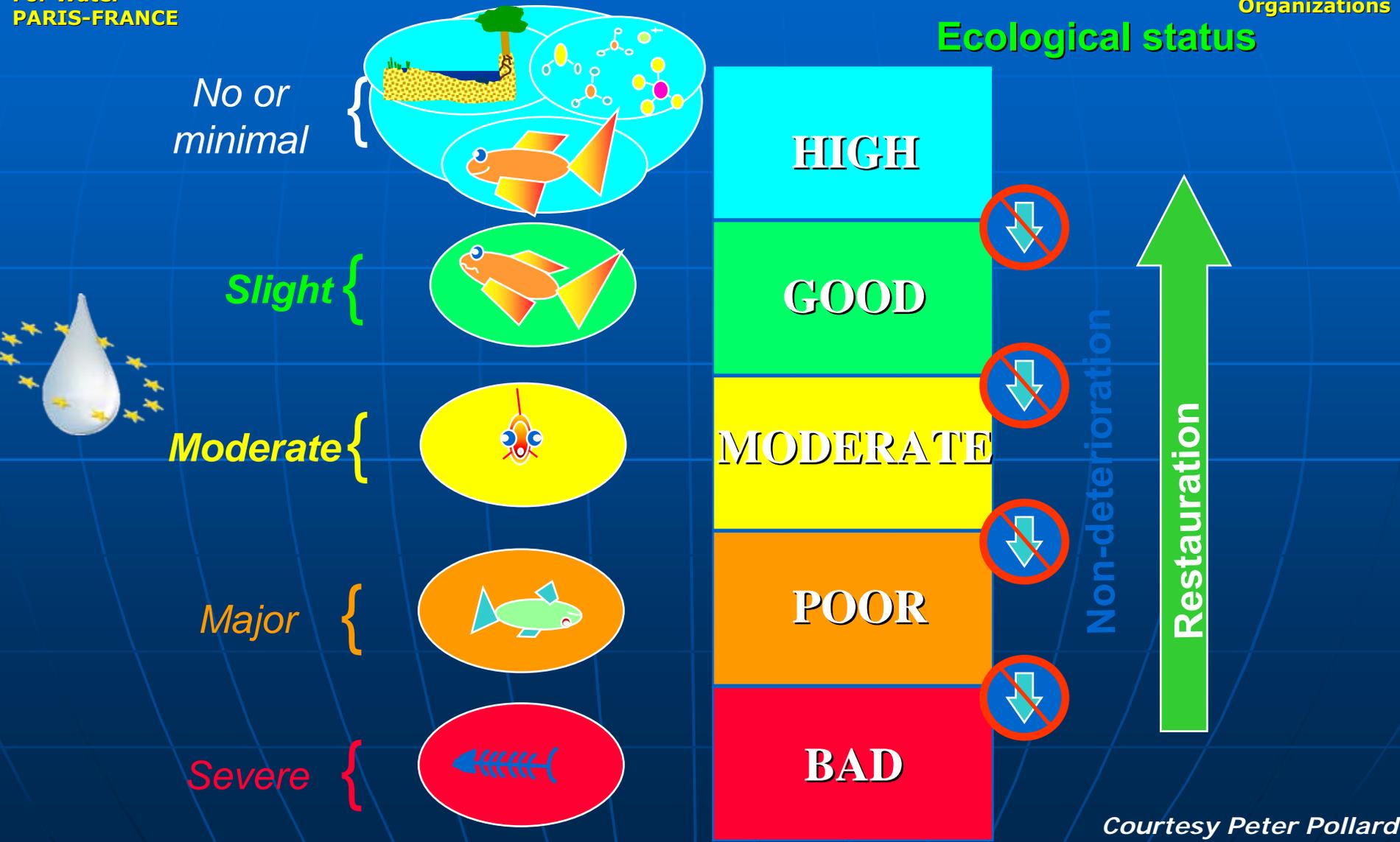


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# Ecological objectives



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# **FLOOD CONTROL: FORECAST, PREVENTION, PROTECTION**

- **Foreseeing hazardous events,**
- **Reducing vulnerabilities,**
- **Protecting people and properties,**
- **Warning and educating.**



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## **WITH REGARD TO DROUGHTS:**



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- **WATER SAVING,**
- **AVOIDING WASTAGES,**
- **LEAK DETECTION,**
- **RECYCLING,**
- **THE REUSE OF TREATED WASTE WATER,**
- **GROUNDWATER RECHARGE,**
- **THE DESALINATION OF SEA WATER,**
- **RESEARCH ON LOW-CONSUMPTION USES...**

**... MUST BECOME PRIORITIES.**



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# GENERAL ASSEMBLY

*The Martinique, 24 – 28 January 2004*

## « DECLARATION OF TROIS-ILETS »



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- The representatives of populations and local authorities, water users or organizations representing collective interest should participate in this management beside administrations, especially, **in Basin Councils or Committees.**
- Information, awareness and education of populations or users and of their representatives are essential,

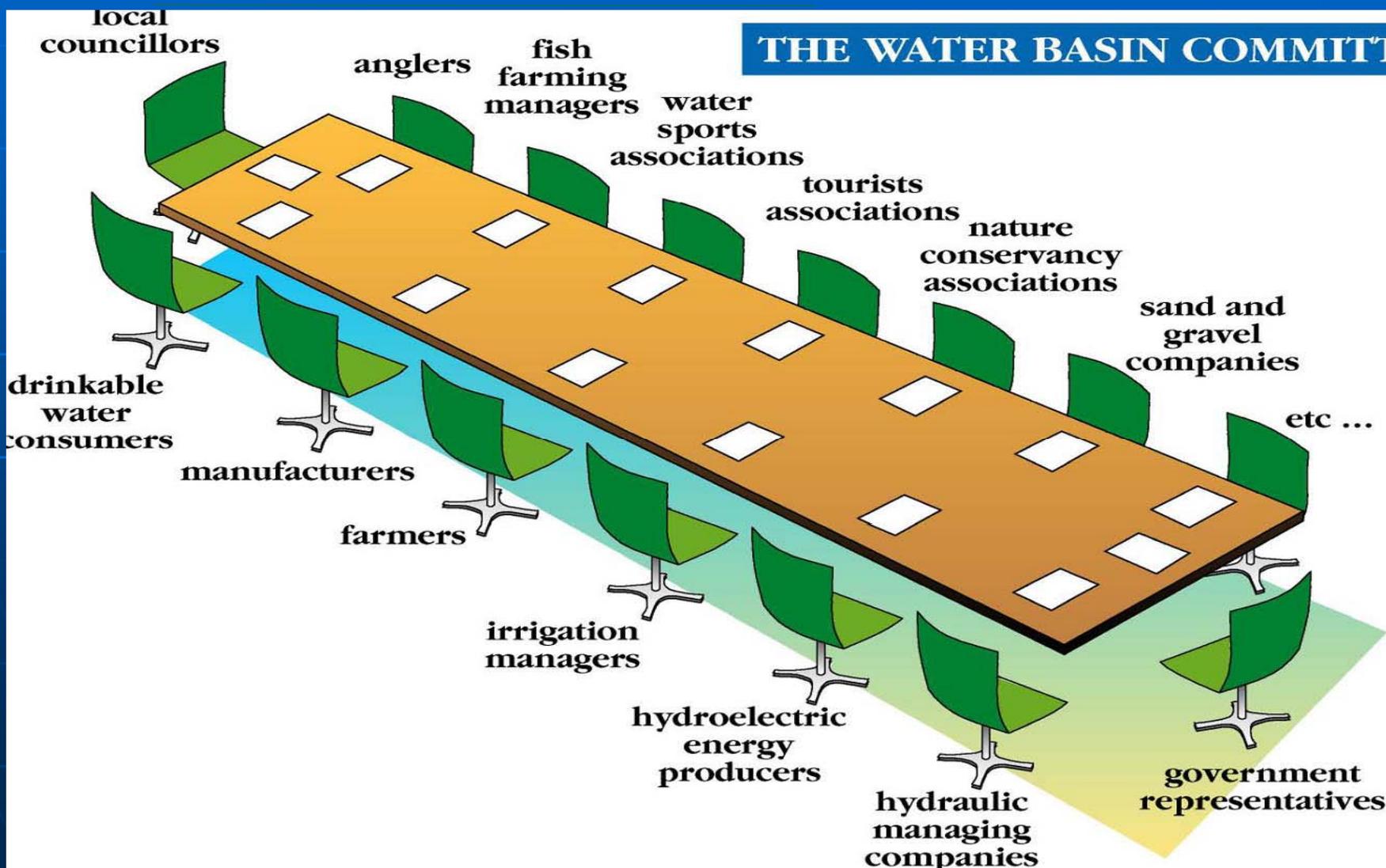


# A River Basin Agency is integrating various stakeholders



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# Conflicts

requirements collected  
from each point of view



Designing a program  
through **dialogue**

Reaching **agreement**  
with an ambitious program





# Integrated information and monitoring systems



International

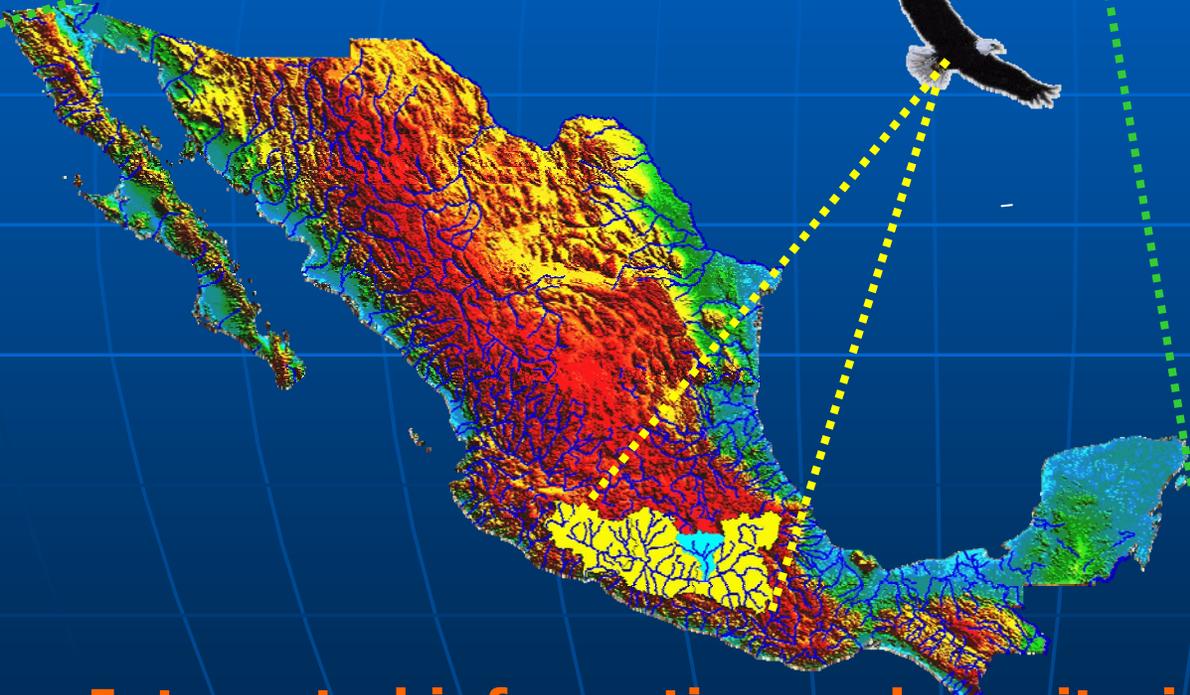
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## The National Water Commission

- Allows consistency at national level,
- Defines policy directives,
- Deals with inter-basin strategies and national security.

## The Basin Organizations

- Prepare the basin plan,
- Manage the national waters in the basin,
- Coordinate integrated management,
- Harmonize specific actions,
- Facilitate and assist in the involvement of the society through the Basin Council Assembly.



- Integrated information and monitoring systems which are reliable, representative, harmonized and easily accessible, and specific research should be organized in each basin,



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# GENERAL ASSEMBLY

*The Martinique, 24 – 28 January 2004*

## « DECLARATION OF TROIS-ILETS »



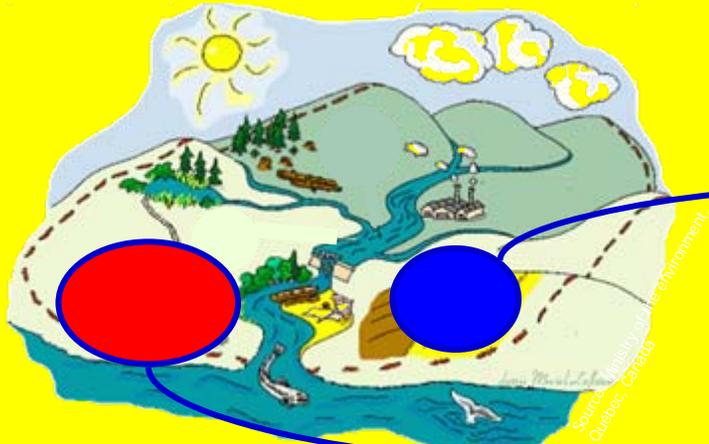
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- The establishment of specific financing systems, based on the consumers and polluters' contribution and common cause, is required in each basin to ensure the implementation of successive priority action plans and guarantee the smooth operation of the necessary community utilities.
- These contributions, defined by consensus in Basin Committees, should be mainly managed at the basin level, in a decentralized manner, by a specialized, technical and financial basin organization.



2004

### Description of the initial situation

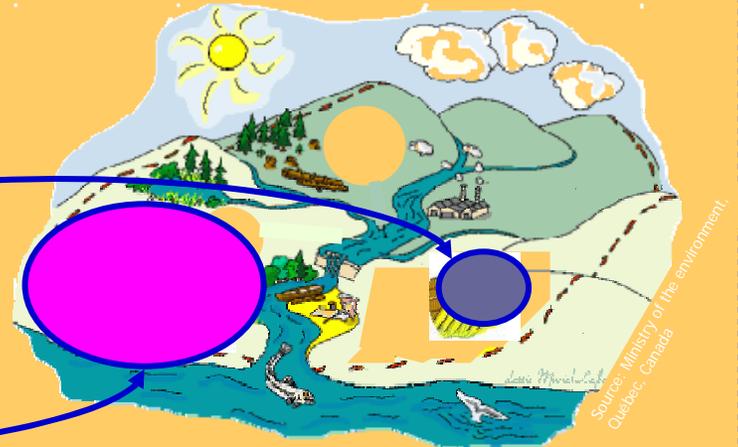


Focus on economic aspects:

- estimate the economic "weight" of water uses and services
- assess the level of recovery of costs of water services

2015

### Baseline scenario: projection for 2015



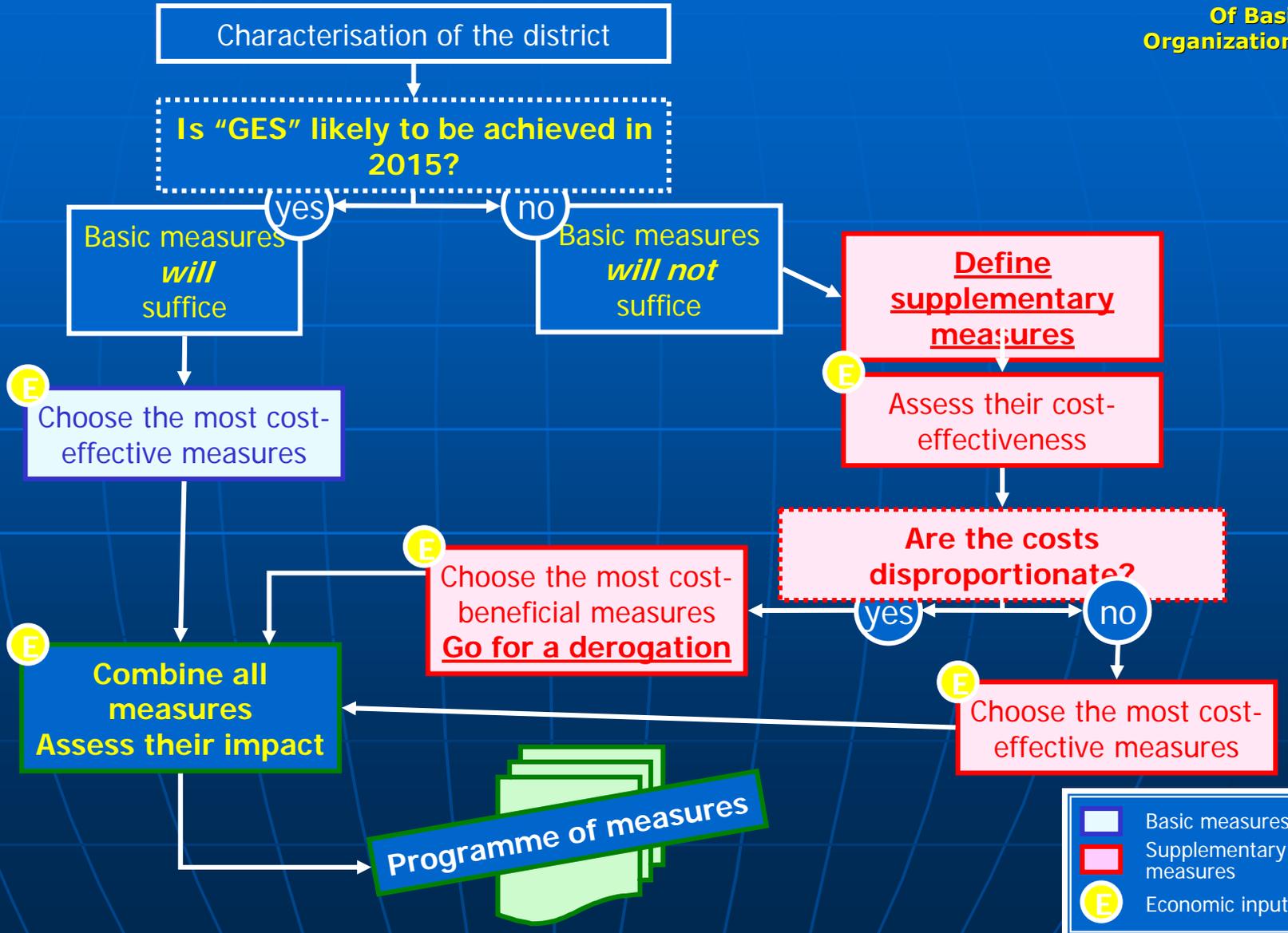
Baseline scenario:

- appraisal of evolutions of uses, pressures...
- identification of potential gaps in water status with GES





# FLOW CHART OF THE CONSTRUCTION OF THE PROGRAMME OF MEASURES





# TRANSPARENCY OF COSTS AND POLLUTER-PAYS PRINCIPLE:



Costs	Definition	Example
Direct cost	Capital costs	<i>Principal and interest, depreciation</i>
	Operating costs	<i>Wages, electricity, maintenance of equipment, analyses of the quality of water...</i>
Environmental cost	Costs of the damages to the environment caused by a given activity	<i>Contamination of an aquifer, destruction of wetlands...</i>
Resource cost	Value of the alternative foregone by choosing a particular activity (= opportunity costs)	<i>Cost of electricity that could have been produced if water would be available instead of being pumped for irrigation</i>

Sum = full cost

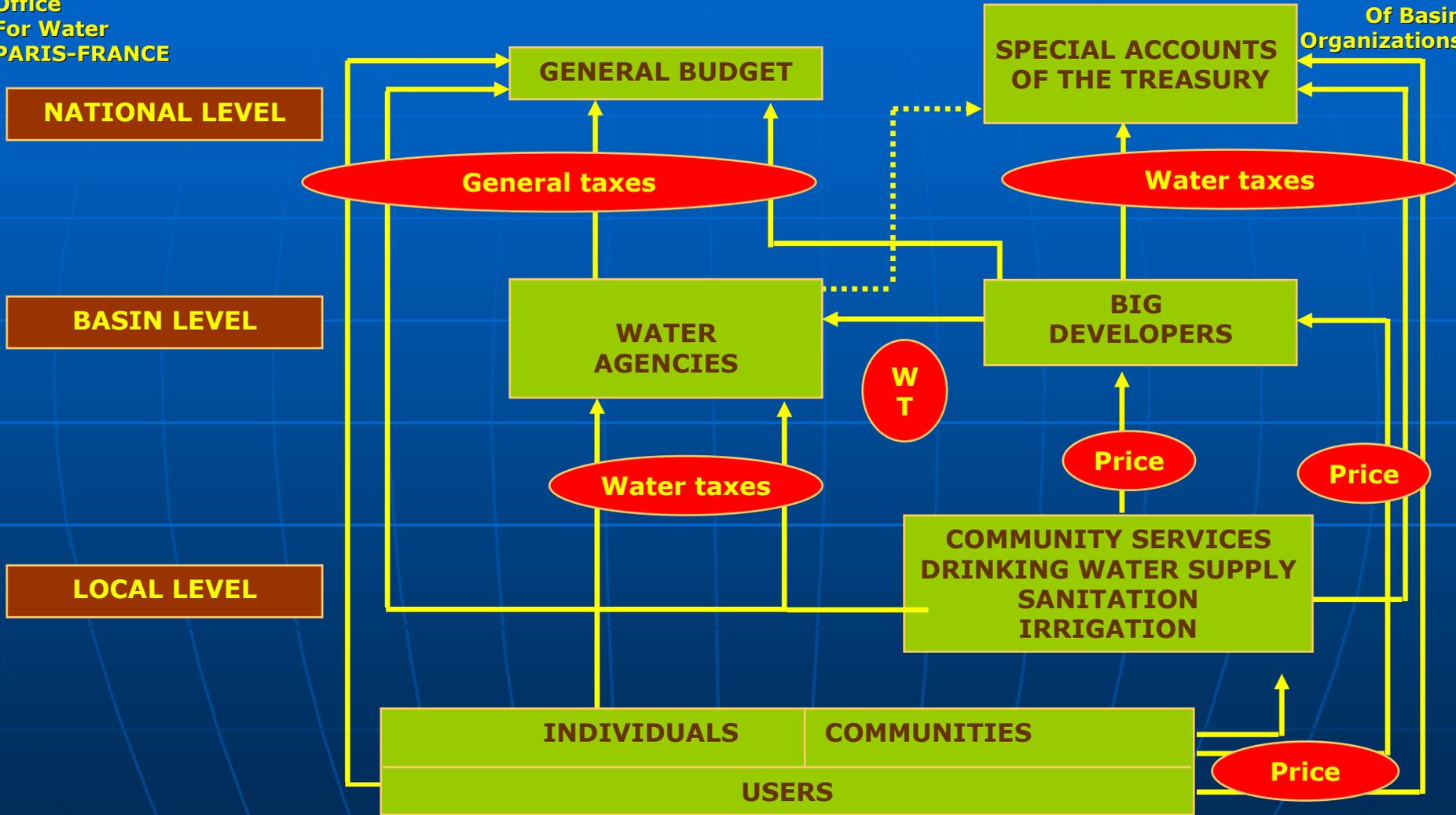


# VARIOUS FINANCING SYSTEMS :



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# THE « POLLUTER - USER – PAYS » PRINCIPLE

**Abstraction  
taxes**

**Pollution  
taxes**

**The Water Agency's Budget  
adopted by the Board of Directors  
with approval of the Basin Committee**

10 %

**Studies & Research**

**Operation**

**Measurement networks**

90 %

**Aid = 5-year Program**

**Big developers**

**Local authorities**

**Farmers**

**Industrialists**



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**23 October 2000**



**The European Framework Directive:  
the future of water resource management  
In the European Union.**



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# The European Water Framework Directive



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## *VERY AMBITIOUS CHALLENGES:*

- PREVENTING THE DETERIORATION OF WATER RESOURCES,
- REDUCING THE EMISSIONS OF SUBSTANCES,
- ACHIEVING A "GOOD STATUS" FOR WATER AND AQUATIC ENVIRONMENTS.



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As everything is linked in each Water Body,  
for a real implémentation of the WFD,

**it's important to take into account:**



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- not only the problems of quality of water and the environments,
- **BUT**, all the aspects of water management and their impacts,
- **AND**, in particular, obvious interfaces with navigation, energy production, the prevention and protection against floods and droughts,

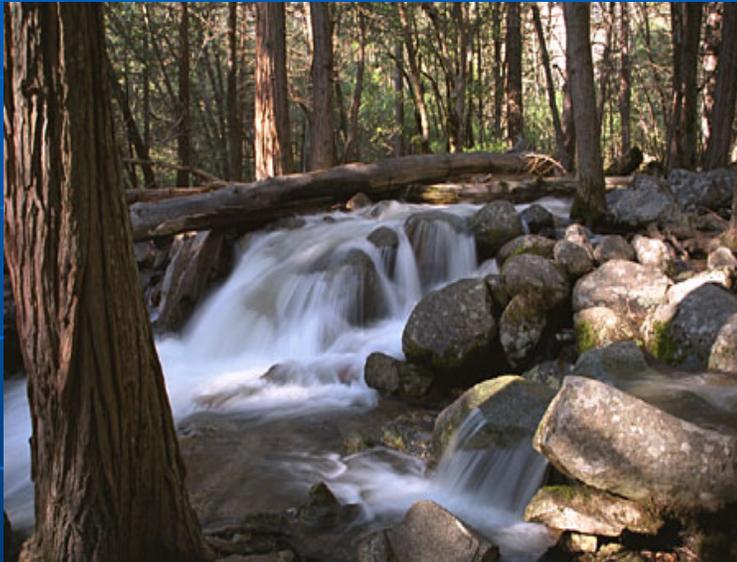


# All kinds of water Are taken into consideration



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- \* surface waters
- \* groundwater



- \* transitional water
- \* coastal waters...



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# All the river basins in Europe are concerned:



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# **ASSESSING WATER QUALITY:**



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*TODAY, THE SYSTEMS FOR ASSESSING WATER QUALITY AND FOR FORMULATING THE OBJECTIVES TO ACHIEVE VARY CONSIDERABLY FROM ONE COUNTRY TO ANOTHER, WITHIN THE EUROPEAN UNION.*

\*

*THE DIRECTIVE REQUIRES:*

- **THE IDENTIFICATION OF "WATER BODIES",**
- **THE DEFINITION OF COMMON FRAMES OF REFERENCES.**



# **ASSESSING WATER QUALITY:**



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*In Europe,*

**50,000 "WATER BODIES" have been identified:**

- **River WB = 27 455**
- **Lake WB = 10 060**
- **Groundwater WB = 7 719**
- **HMWB/AWB = 5 783**

➤ **IN FRANCE :**

- **River WB = 3 522**
- **Lake WB = 471**
- **Groundwater WB = 539**
- **HMWB/AWB = 912**
- **Good Status = 984**
- **At Risk = 941**

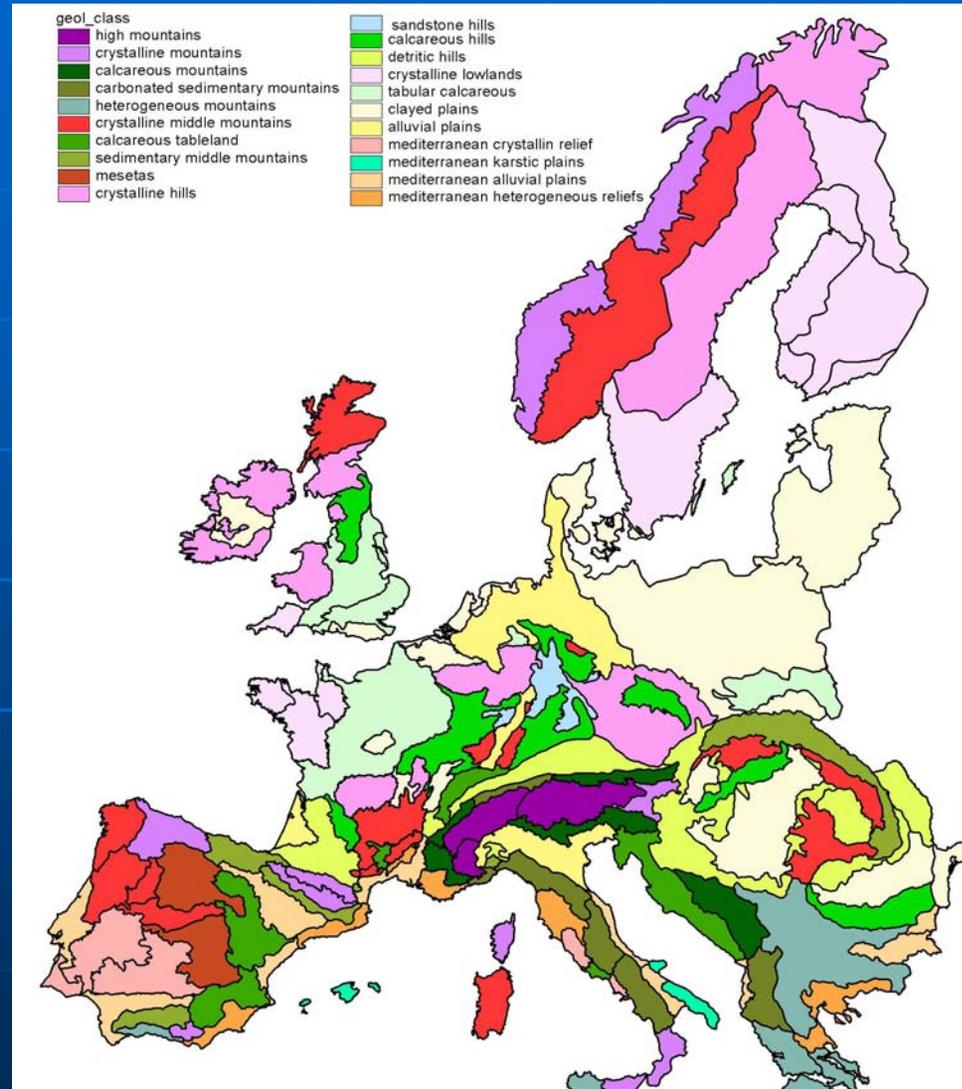


# A typology of water bodies: European Hydro - ecoregions



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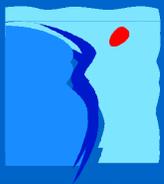
**THE DEFINITION OF COMMON FRAMES OF REFERENCES.**



## the European Water Framework Directive



- **FOR EACH DISTRICT,  
MUST BE FORMULATED:**
  - A **"MANAGEMENT PLANS"**,  
DEFINING THE OBJECTIVES TO ACHIEVE,  
**AND**
  - **"PROGRAMS OF MEASURES"**,  
DEFINING THE NECESSARY ACTIONS.



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# The WFD introduces an obligation of results:



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*General obligation*

*Actions defined with regards to the goal*

*Good status*

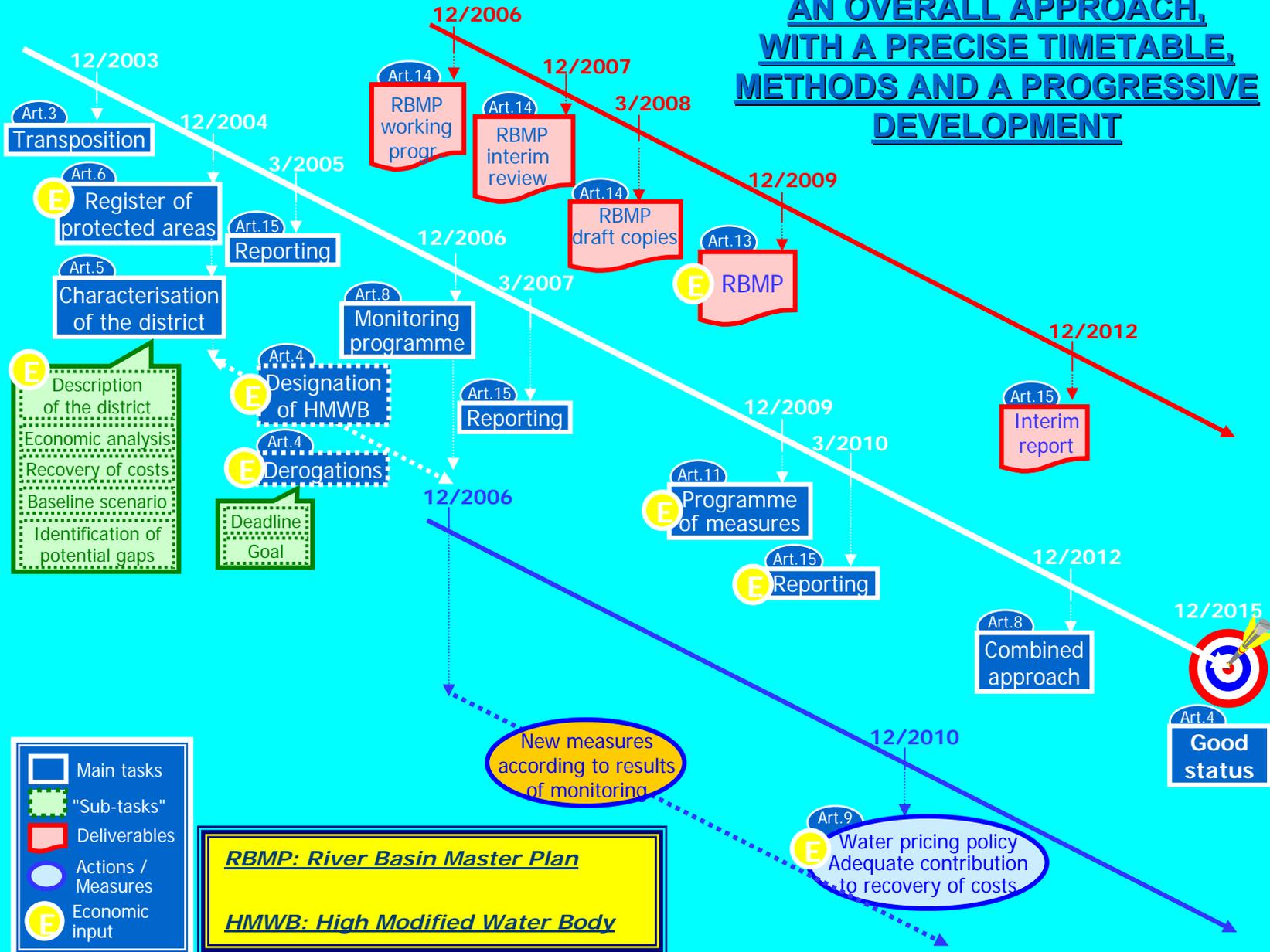
*Derogations to be justified*

**Achieving a "good status" for surface and ground waters before 2015**



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Technical  
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**The WFD:**  
**AN OVERALL APPROACH,**  
**WITH A PRECISE TIMETABLE,**  
**METHODS AND A PROGRESSIVE**  
**DEVELOPMENT**



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**A PARTICIPATORY  
WORKING METHOD:**



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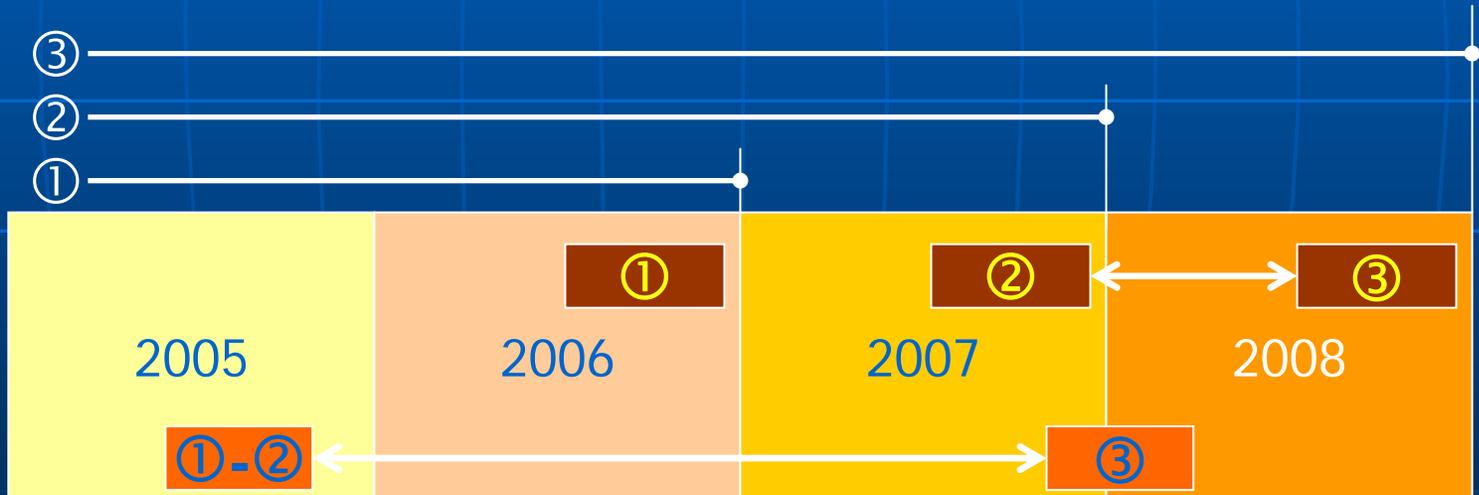
**THE PREREQUISITE  
TO REAL TRANSPARENCY  
IS THE EFFECTIVE PARTICIPATION  
OF THE PUBLIC,  
THROUGH PLANNED  
CONSULTATIONS  
DURING THE WHOLE PROCESS.**



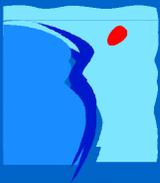
# Obligations of the directive

**Member States have to consult the public on :**

- ① the timetable and work programme,
- ② an overview of the significant water management issues identified in the river basin
- ③ draft copies of the river basin management plan



**In France a operational national timetable**



# CIS Achievements



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## Seventeen Guidance Documents

- 1) Economics and the Environment
- 2) Identification of Water Bodies
- 3) Analysis of Pressures and Impacts
- 4) Artificial and Heavily Modified Water Bodies
- 5) Transitional and Coastal Waters – Typology, Reference Conditions
- 6) Intercalibration Network and the Intercalibration Process
- 7) Monitoring
- 8) Public Participation
- 9) GIS and the WFD
- 10) Rivers and Lakes Typology
- 11) Planning Process
- 12) Wetlands
- 13) Classification
- 14) Reporting...





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**International Network of Basin Organizations**

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