



## 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

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**Mr. Jean - François DONZIER**

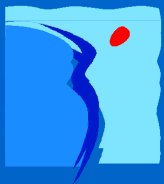
**General Manager**

**International Office for Water**

**Permanent Technical Secretary**

**INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS**





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# TWO HUNDRED AND SEVENTY SIX RIVERS OR LAKES AND HUNDREDS OF AQUIFERS ARE TRANSBOUNDARY ONES



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## *Transboundary basins per continent.*

			<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>TOTAL</b>		<b>276</b>	<b>45 %</b>



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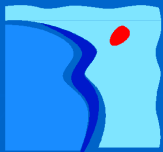
# In Europe a majority of basins being transboundary ones!



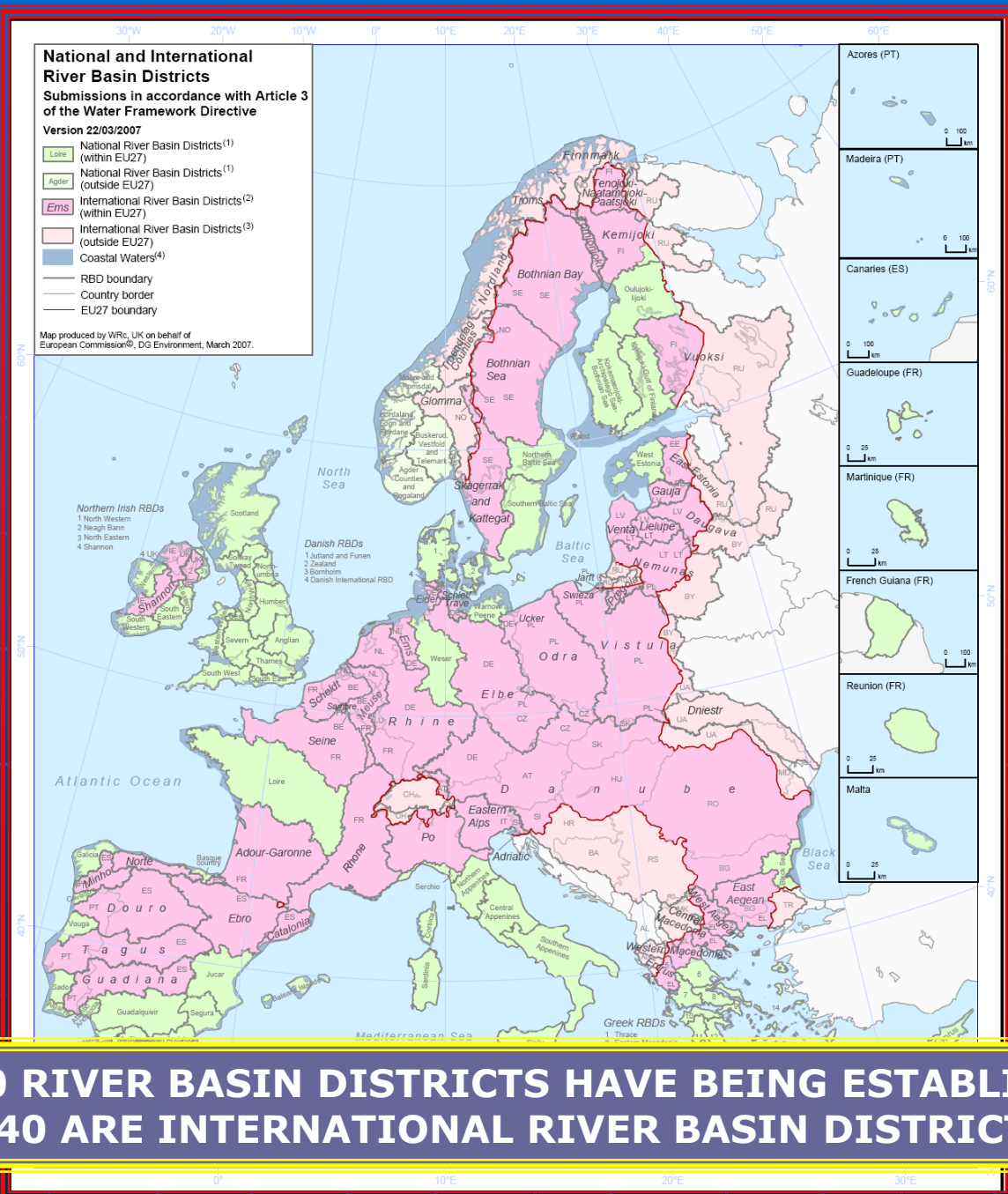
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**HUGE WORK IS STILL NEEDED:  
MANAGEMENT PLANS OF INTERNATIONAL RIVER BASIN DISTRICTS  
STILL TOO OFTEN LOOK LIKE A PATCHWORK OF NATIONAL ELEMENTS**

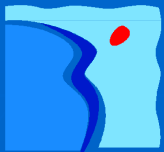


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**Implementation of  
the European Water Framework Directive  
in the 28 countries  
of the enlarged European Union,  
as well as in the candidate countries for accession,**

**Directive 2000/60/EC of 23 October 2000  
*establishing a framework for the Community action in the field of water policy.***



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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:**

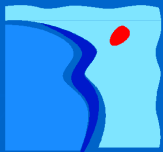
- not only the problems of quality of water and the environments,
- **BUT**, all the aspects of water management and their impacts,
- **AND**, in particular, obvious interfaces with navigation, energy production, agriculture, the prevention and protection against floods and droughts...



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## ■ **Directives:**

- **Water Framework Directive**
- **Groundwater Directive**
- **Directive on Environmental Quality Standards (EQS)**
- **Urban Waste Water Directive**
- **Nitrates Directive**
- **Floods Directive**

## ■ **+ quantitative and adaptive water management issues:**

- **Communication on Water Scarcity and Drought**
- **Policy paper accompanying the White Paper on Adapting to Climate change on Water, Coasts and Marine Issues.**



# « 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

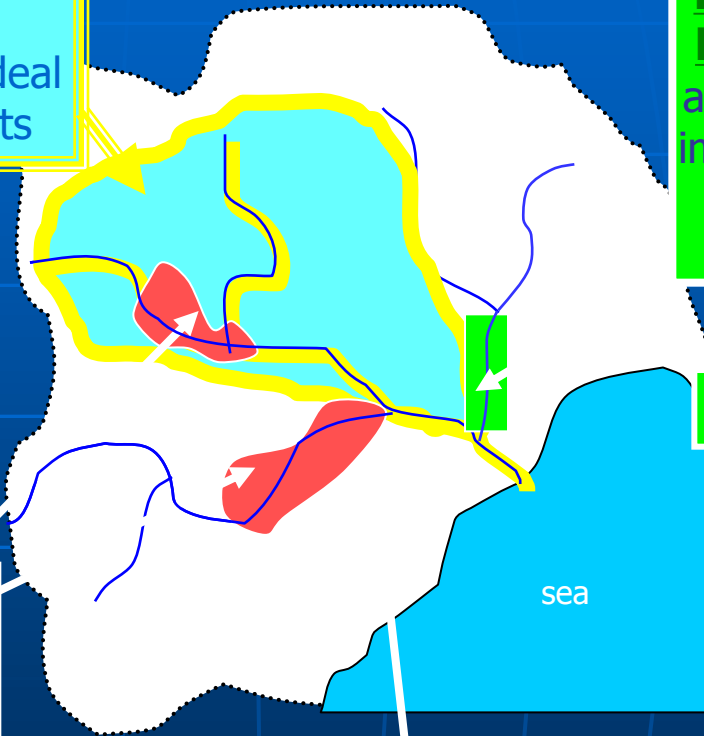
**Heavily modified water  
bodies (HMWB):** human  
activity carried out makes it  
impossible to reach the goal  
without disproportionate  
costs (change activity...)

⇒ *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



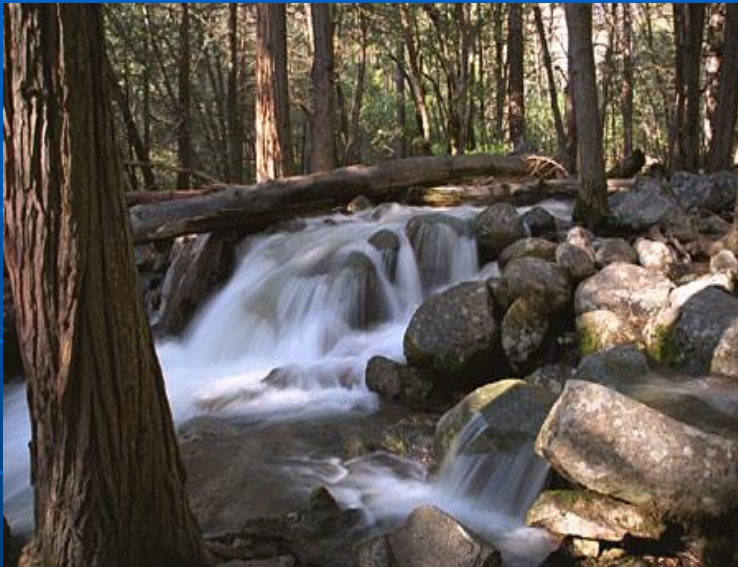


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# All kinds of water Are taken jointly into consideration



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- \* surface waters
- \* groundwater



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





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What do we consider as a *Basin* ?



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the concept includes all

**SURFACE and**



**Groundwater**



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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:

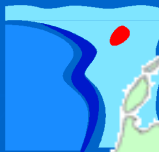


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- **A clear legal framework** must specify, in each country, the rights and obligations, the possible levels of decentralization, the institutional responsibilities of the different stakeholders, the processes and means needed for good water governance,

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





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PART**

# The Rhine : an international river basin district

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



- 9 States involved**
- Austria**
  - Belgium**
  - France**
  - Germany**
  - Italy**
  - Liechtenstein**
  - Luxemburg**
  - Switzerland**
  - The Netherlands**



**Secretariat**

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

Delegation Head

**Strategy Group (SG)**

Editorial Group

**Riparian states \***

**WG Flooding  
(H)**

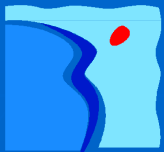
**WG Water  
Quality /  
Emissions (S)**  
incl. Groundwater (GW)

**WG Ecology  
(B)**

**Expert Groups  
GIS  
Economy (E)**

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

**RHINE**



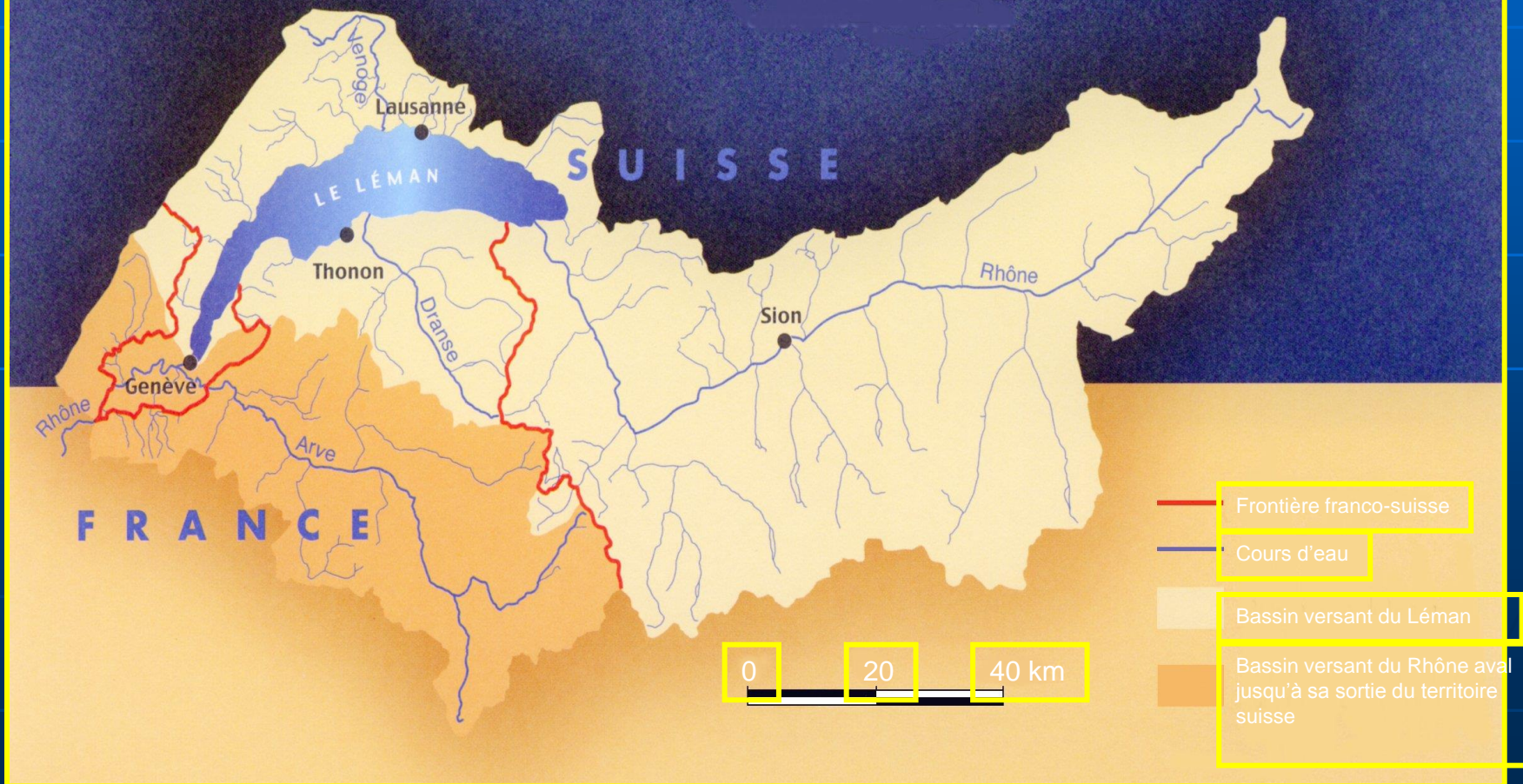
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# International Commission for the Léman Lake

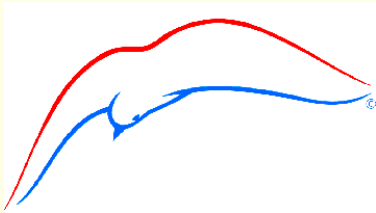


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Zone géographique concernée par la CIPEL







Vaud  
Valais  
Genève

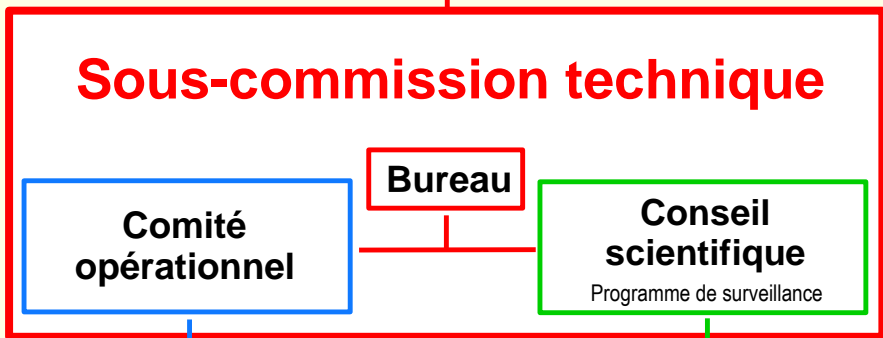


Secrétariat  
permanent

Collaboration F - CH  
en cas de pollution

Relations  
publiques

**International  
Commission  
for  
the Léman Lake**



Pollutions  
domestiques

Pollutions  
agricoles

Pollutions  
industrielles

Renaturation

Méthodologie

Subvention à la  
déphosphatation



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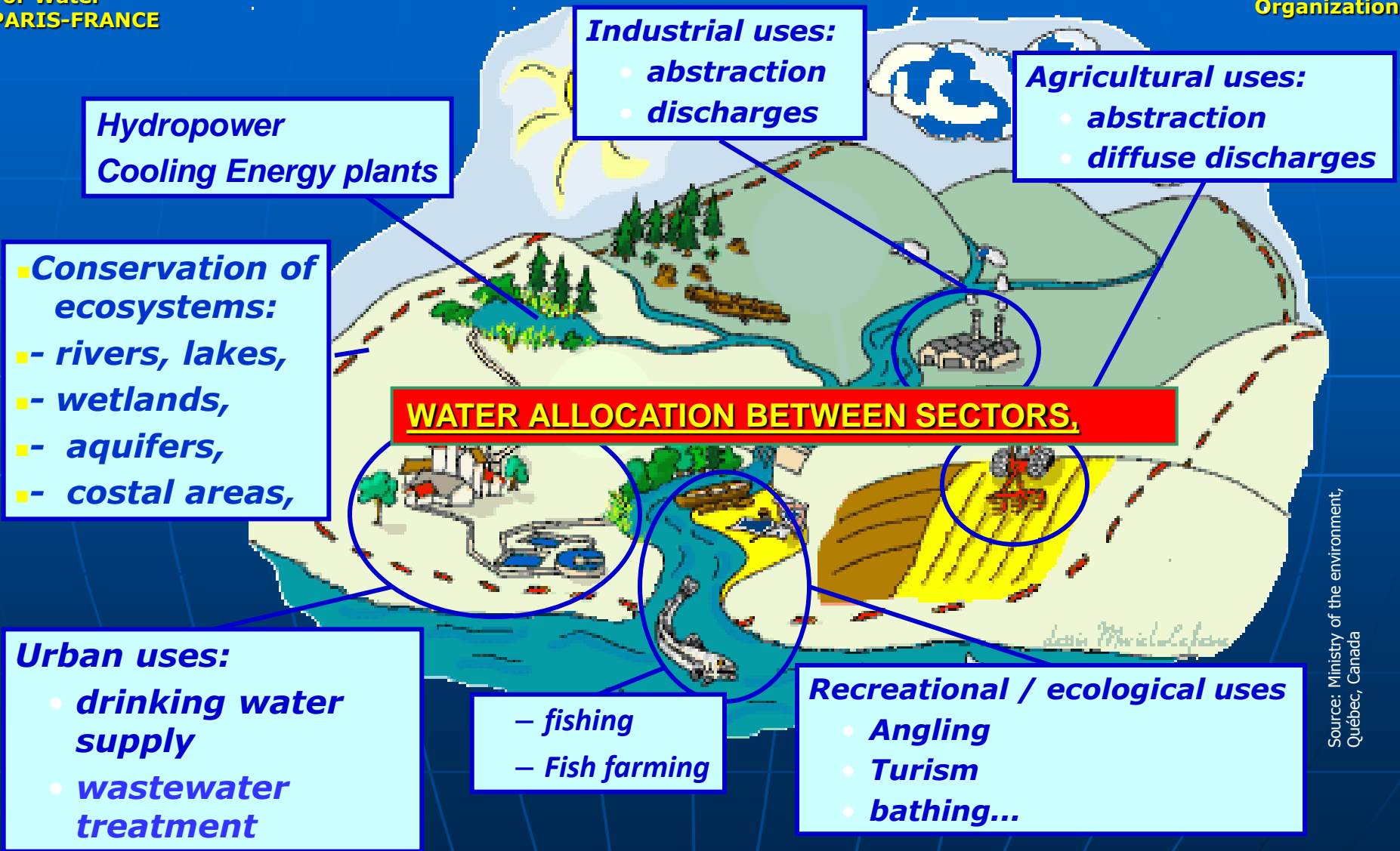
# INTEGRATED WATER RESOURCE MANAGEMENT

- 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



# IWRM CONCERNS

## ALL MAJOR WATER USES





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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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# Conflicts

requirements collected  
from each point of view



Designing a program  
through **dialogue**



Reaching **agreement**  
with an ambitious program

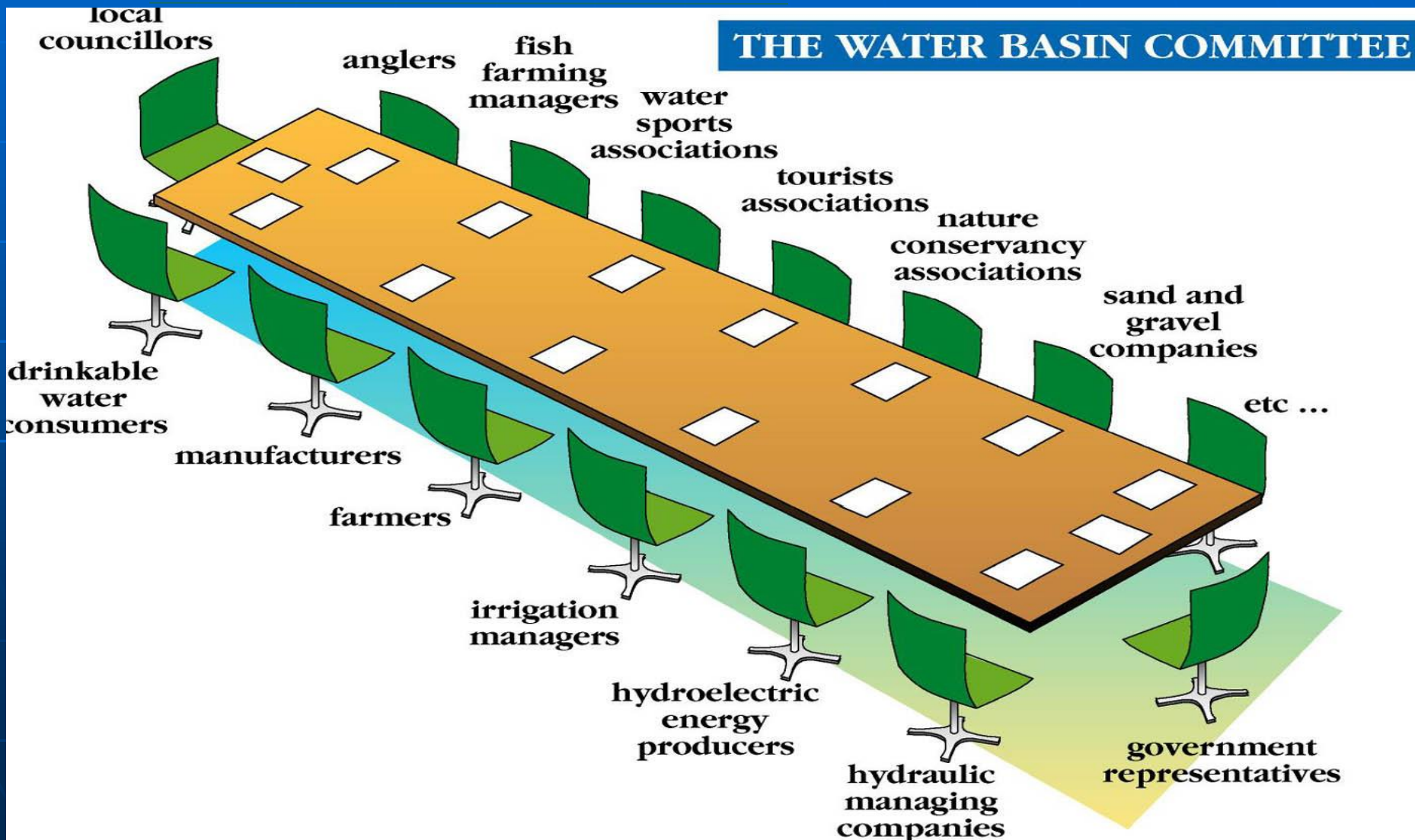


# A River Basin Management is integrating various stakeholders



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If we cannot measure, we cannot manage!!



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## DIALOGUE



## INFORMATION



### Resources

- Surface water  
(Rivers –Lakes)
- Groundwater
- Wetlands



### Uses



### Seasonal variations



### Geographic locations



### Economical informations

- Quantity
- Quality
- Ecology
- Requirements
- Abstractions
- Discharges
  - Flowrates
  - Pollution

- Frequencies

- G.I.S

- Cost, budget...

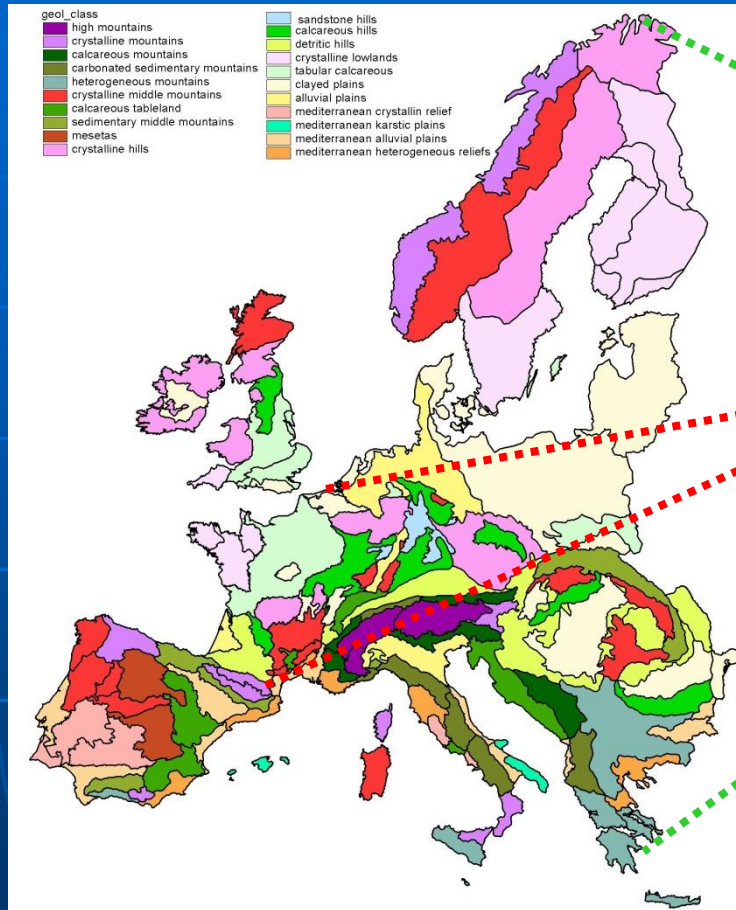




# Integrated information and monitoring systems



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



# ASSESSING WATER QUALITY:



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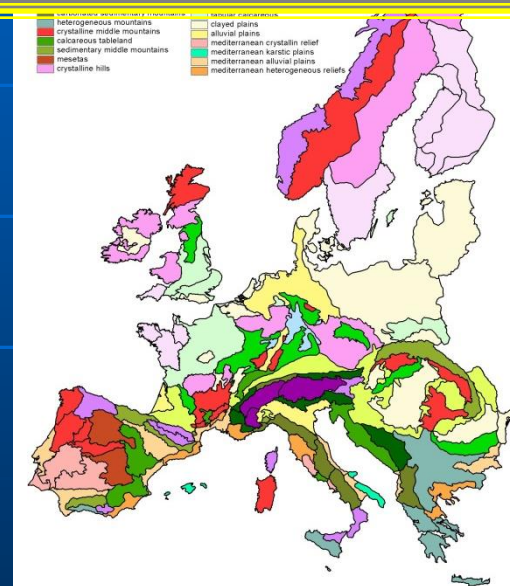
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## *In Europe,*

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

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

### European Hydro - eco-regions



### ➤ IN FRANCE :

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

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



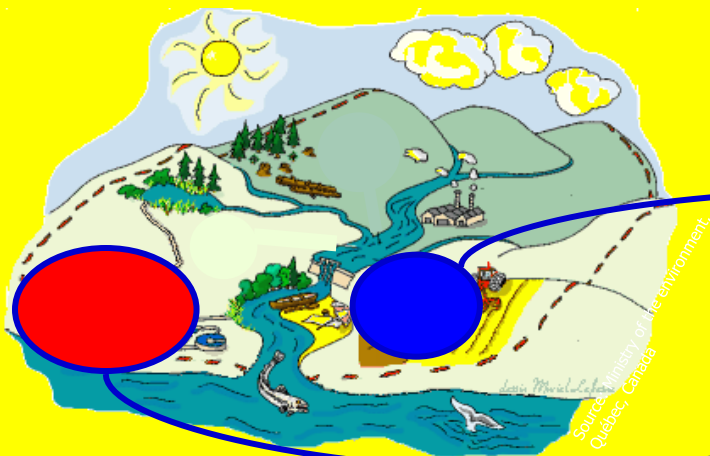
# water resources management should be organized:



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*Description  
of the initial situation*

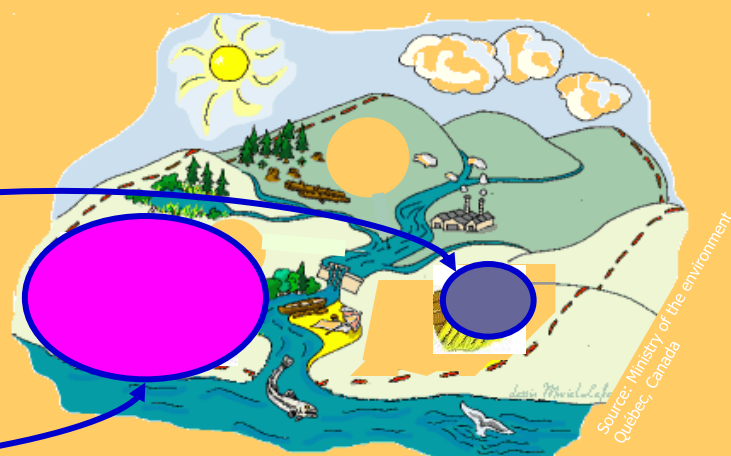


Focus on economic aspects:

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

2025

*Baseline scenario:  
projection for 2025*



Baseline scenario:

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

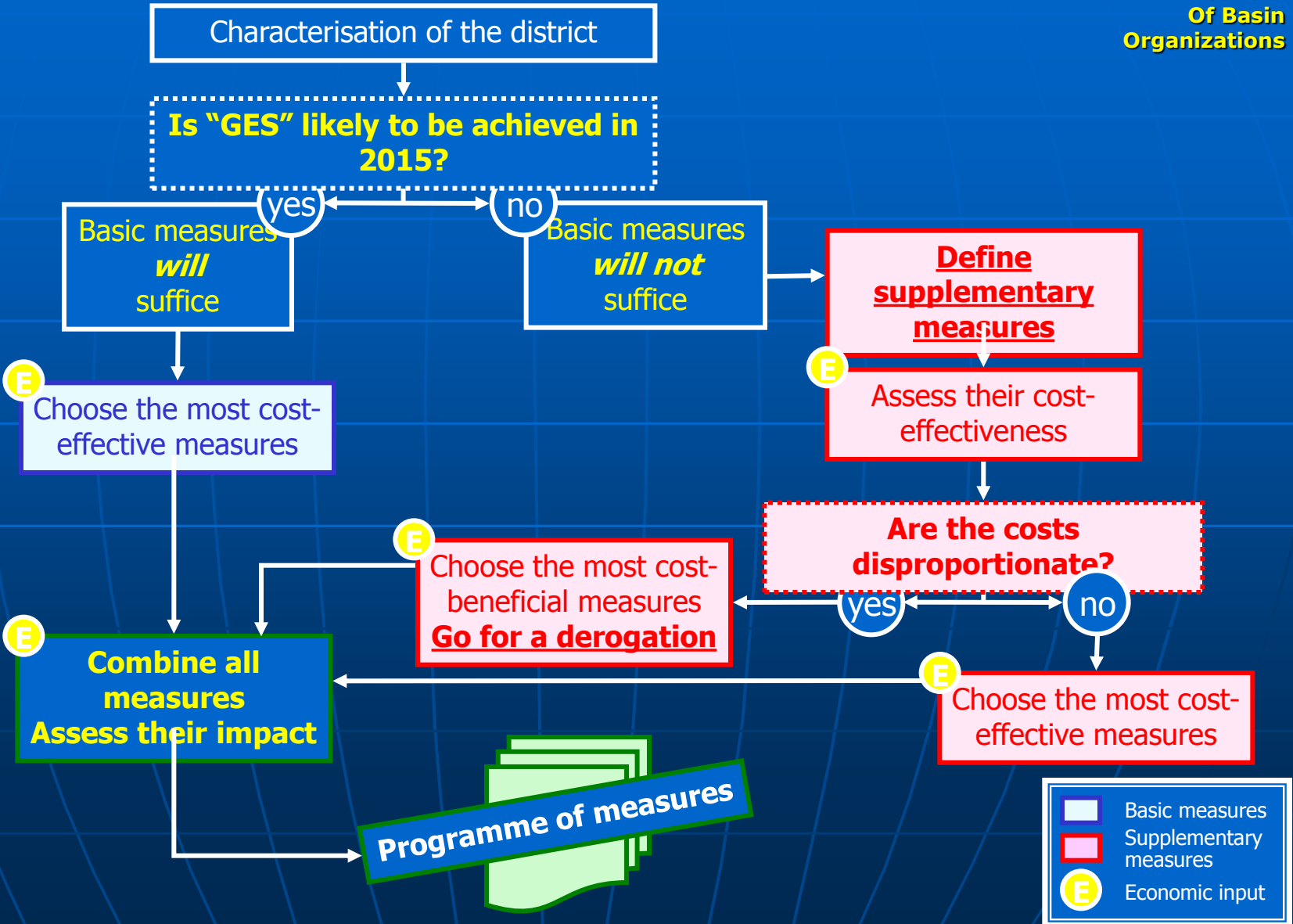
based on management plans or master plans

that define the medium and long-term objectives to be achieved;

**As adaptation actions will take several decades  
before having a visible and significant effect**



# 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 -**

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