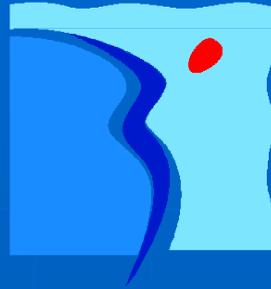




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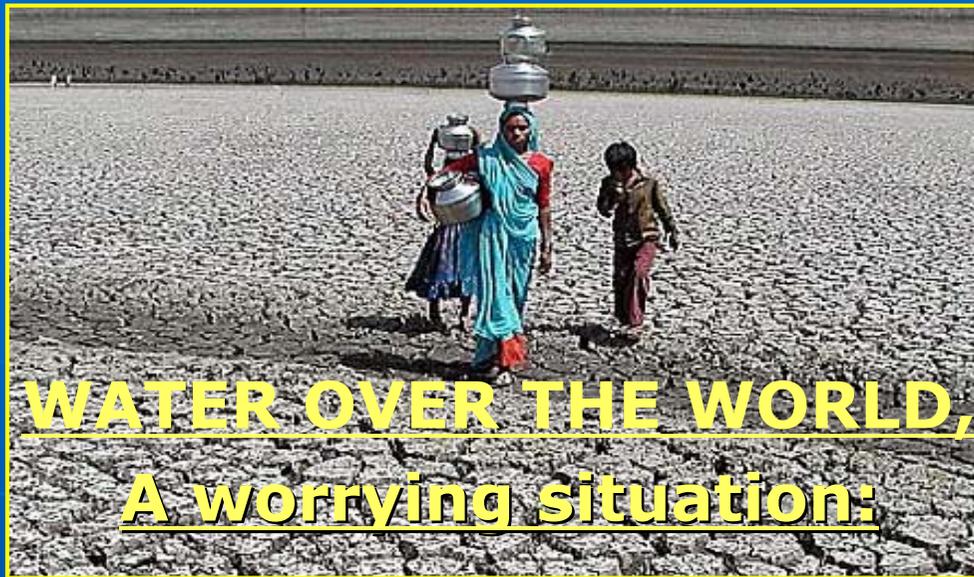
**PROGRESS REPORT**  
**of**  
**Mr. Jean - François DONZIER**  
**General Manager**  
**International Office for Water**  
**Permanent Technical Secretary**  
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**WATER OVER THE WORLD,**  
**A worrying situation:**

- Natural hazards are poorly controlled,
- Wastage is inadmissible,
- Water pollution is significantly increasing,
- The situation of the poorest people is intolerable,
- Ecosystems are destroyed...

**Wastage and pollution of inland freshwater  
might limit development  
in most countries of the world!**



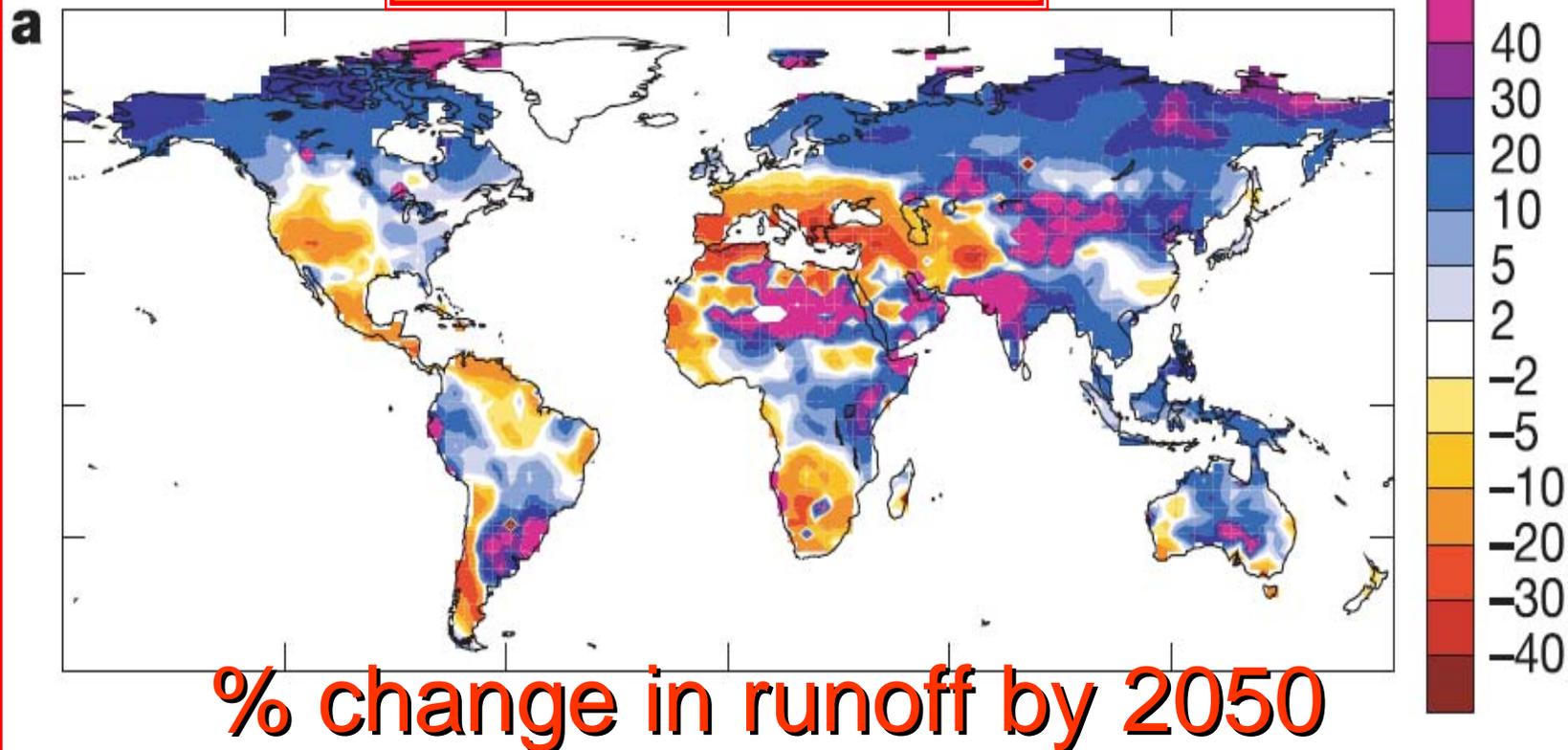
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# Global warming cannot now be avoided. Fresh water resources will be directly affected in the coming years!



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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)



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**TECHNICAL SOLUTIONS DO EXIST,**

***BUT :***

**THE PROBLEMS ARE ABOVE ALL**

**INSTITUTIONAL ONES:**

**The necessary reforms  
are slow to appear,**

- **centralisation,**
- **bureaucracy,**
- **sectoral approaches,**
- **no legislative, regulatory and normative framework,**
- **insufficient means for the administrations & local authorities,**
- **poor knowledge of the resources, uses and pollution,**
- **basic and continuing training and education are deficient,**
- **no dialogue,**
- **financial resources are too low,**
- **lack of financial guarantees and contractual systems, etc.**



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**IF WE ARE NOT ABLE TO MOBILIZE ENOUGH MONEY,  
WE SHALL NOT HAVE THE FRESH WATER WE NEED!**

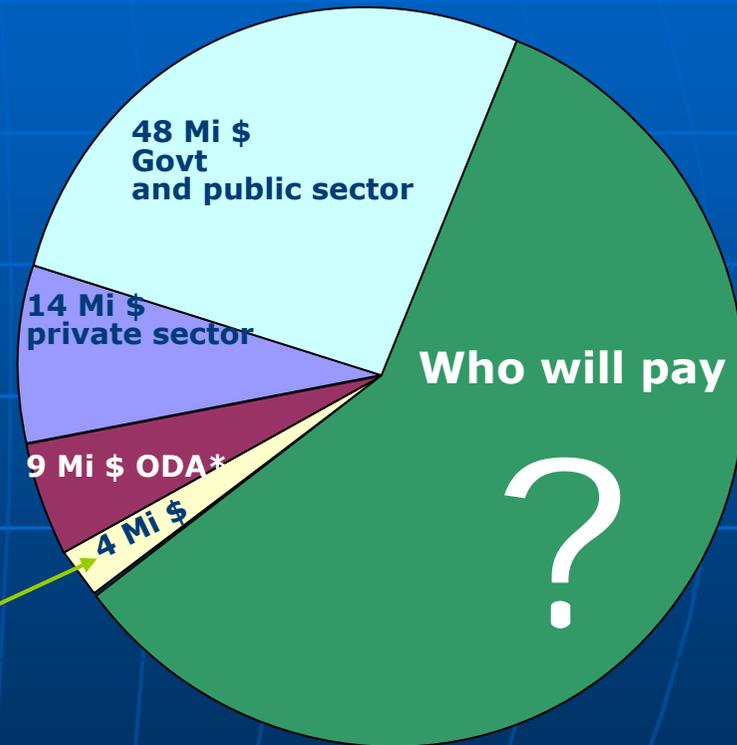
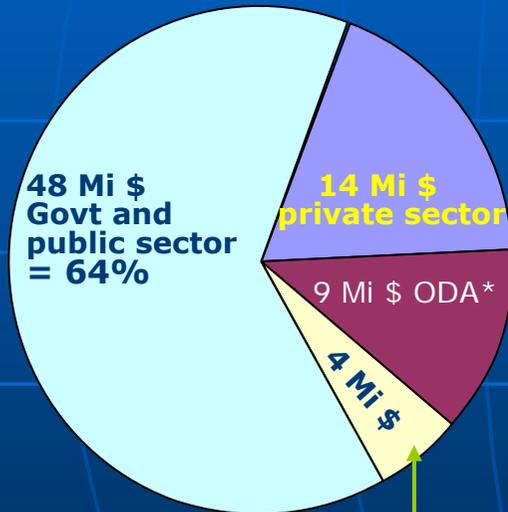


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**Who will pay ?**

**FOR THE NEXT 25 YEARS**

**NOW**



**75 milliards \$ / year**

**180 milliards \$ / year**

\* Official Development Assistance



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## FINANCING WATER POLICY:

- ◆ **The international official aid only represents 10% of the investments made worldwide.**
- ◆ **Public budgets cannot bear alone all the investment and operating costs.**
- ◆ **The users must contribute according to the "polluter-pays" principle and the "users-pay" systems.**

= WATER MUST PAY FOR WATER



**A solution?**

**IWRM: Integrated Water  
Resources Management  
at rivers, lakes and aquifers  
basins' level**



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## RIVER BASIN MANAGEMENT EXPERIENCED A QUICK DEVELOPMENT IN MANY COUNTRIES



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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



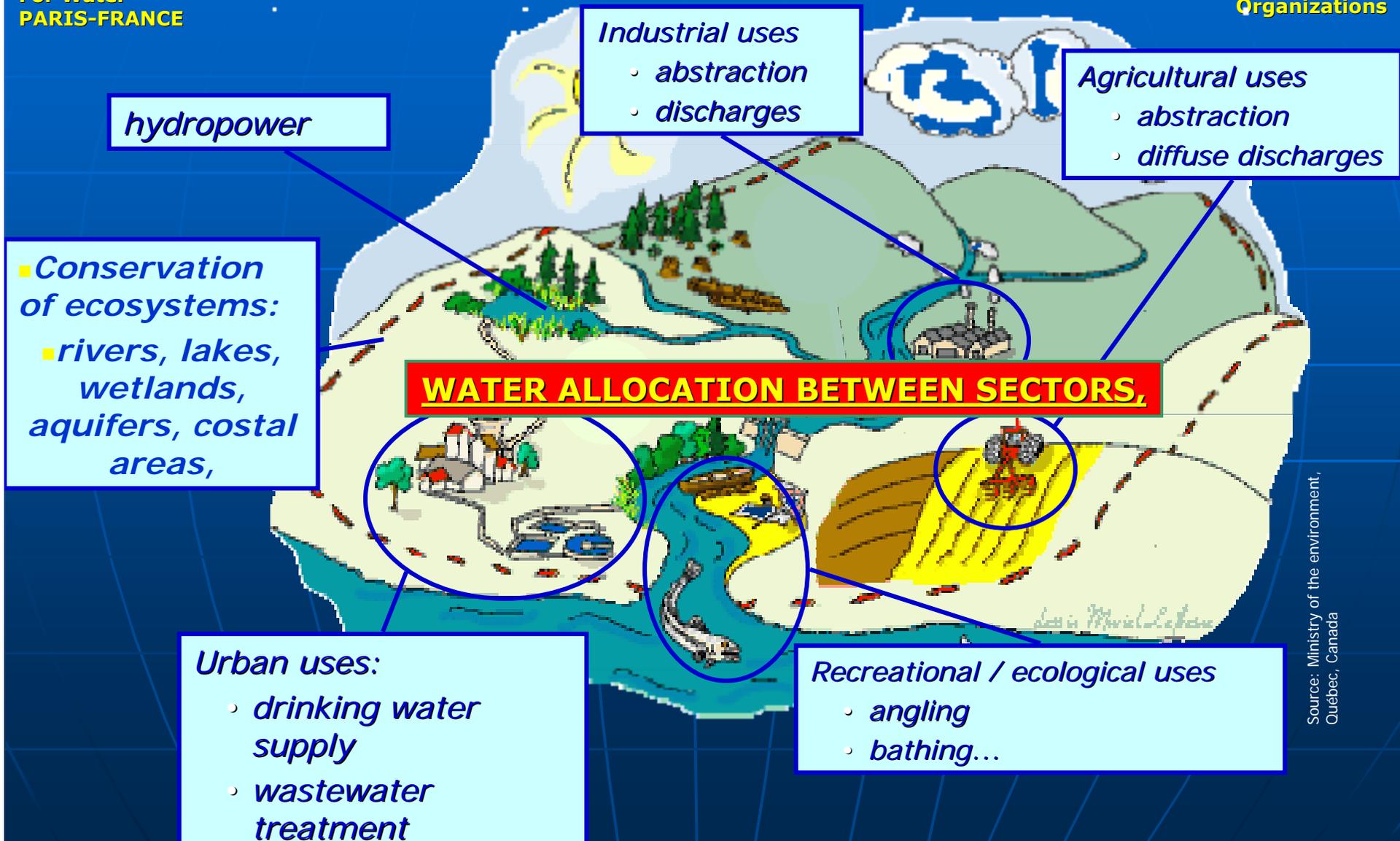
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# IWRM CONCERNS

## ALL MAJOR WATER USES



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Source: Ministry of the environment,  
Québec, Canada

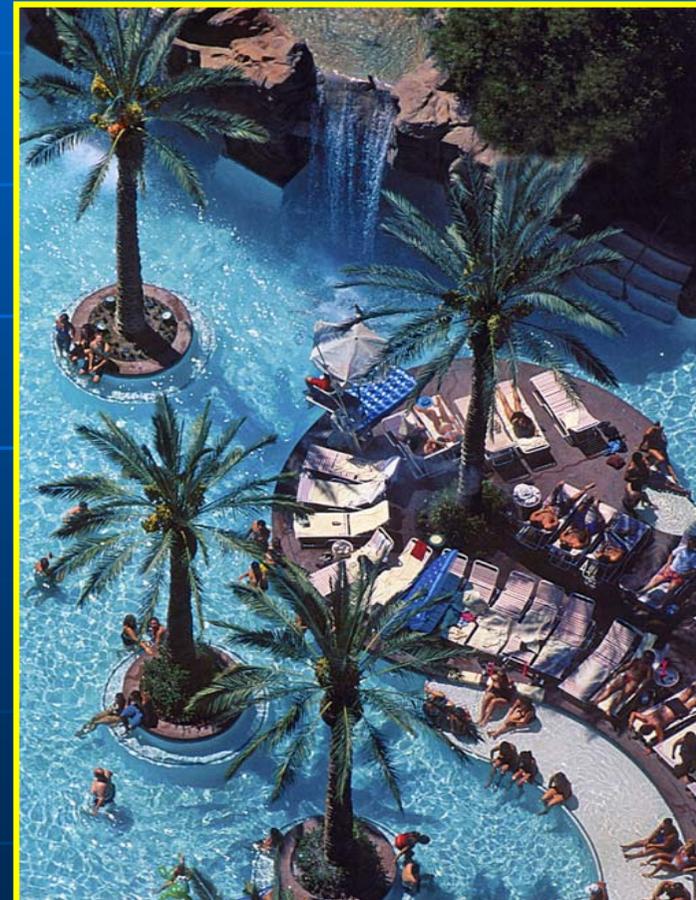
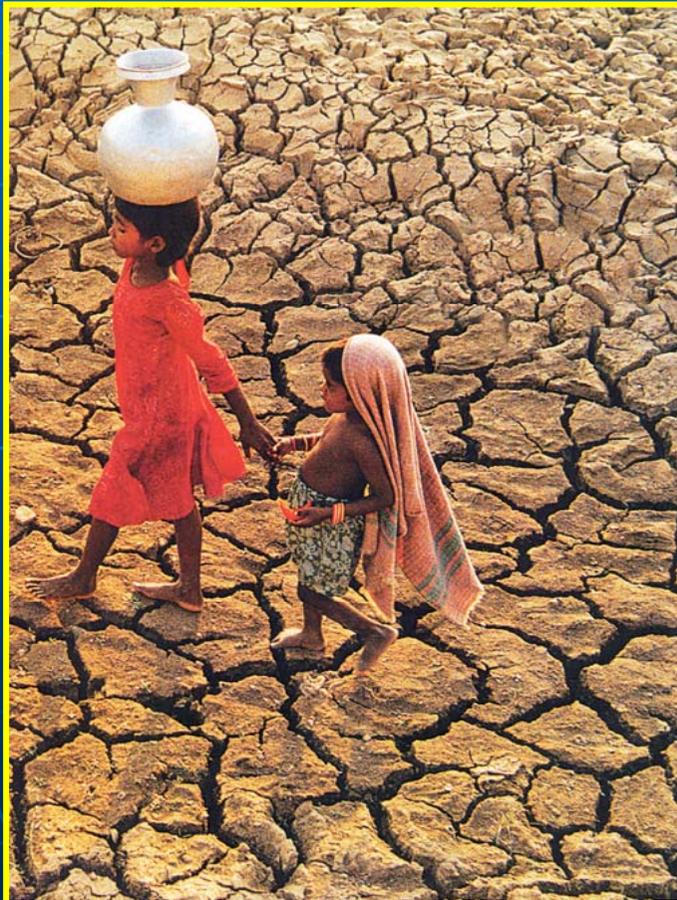


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# **IS WATER EQUITABLY AND SOUNDLY SHARED BETWEEN THE VARIOUS USES, ENSURING A BETTER OPTIMIZATION OF WATER AND AVOIDING WASTAGES?**



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**MOBILIZING NEW RESOURCES  
SHOULD BE PLANNED  
WHEN THEY ARE ECOLOGICALLY ACCEPTABLE  
AND ECONOMICALLY REASONABLE.**





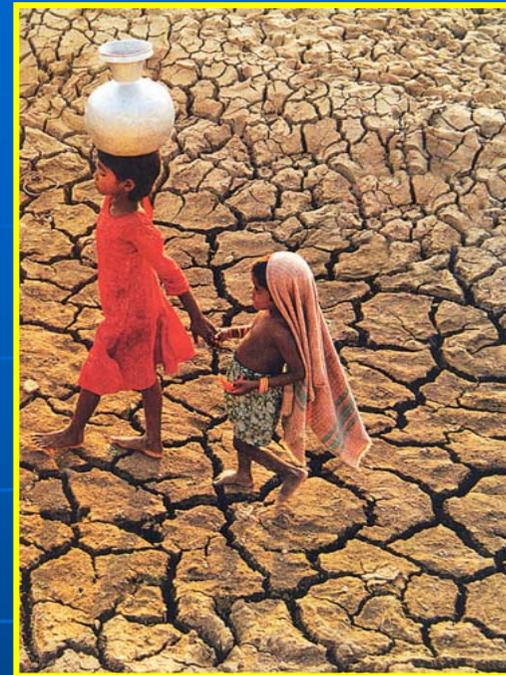
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## **WITH REGARD TO DROUGHTS:**



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**AVOIDING WASTAGES!**



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

**... MUST BECOME PRIORITIES.**



# A NEW APPROACH TO WATER USES IN AGRICULTURE SHOULD BE LOOKED FOR.



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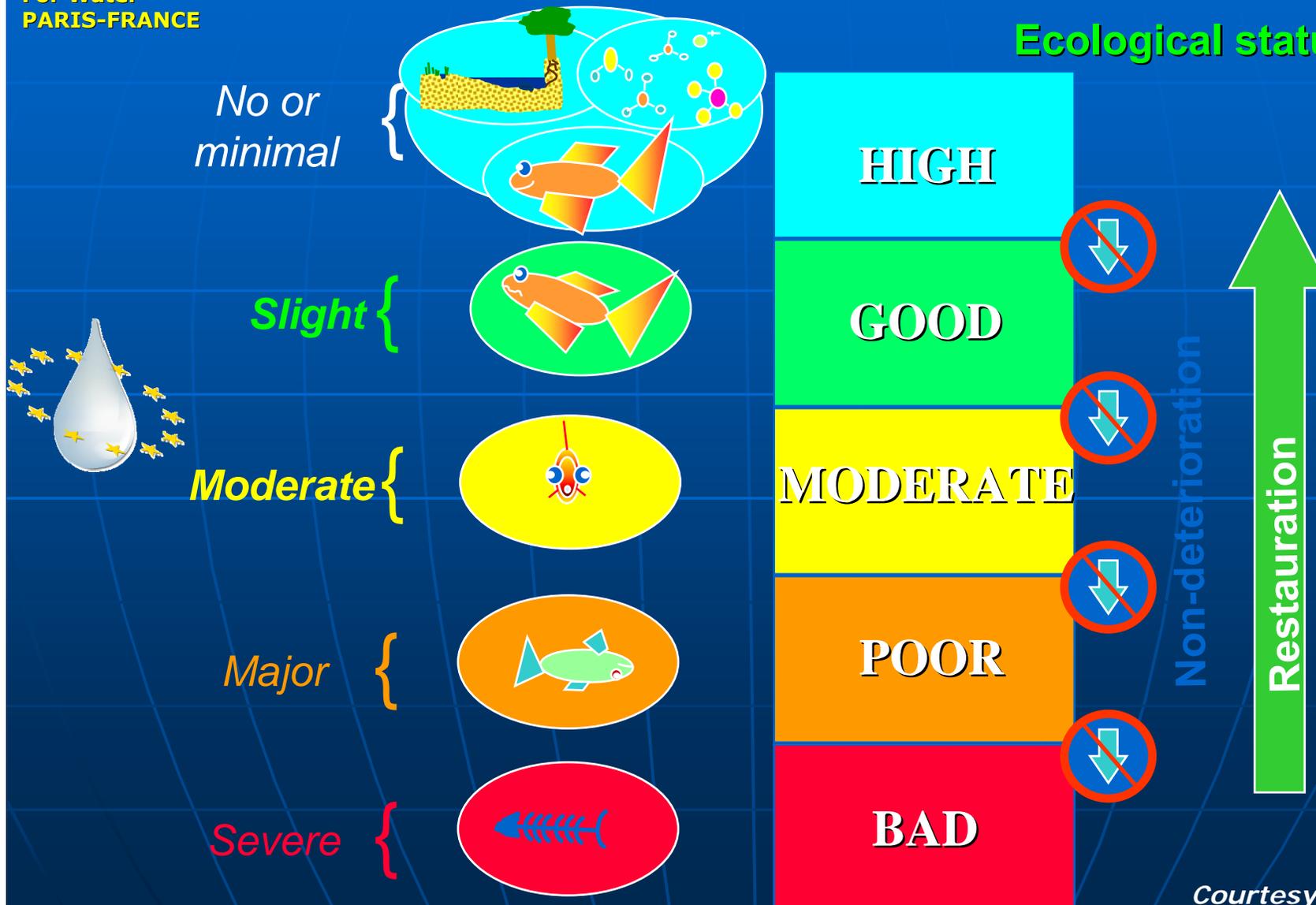
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# Ecological objectives

## Ecological status



Courtesy Peter Pollard



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# FLOOD CONTROL: PROTECTION, FORECAST, PREVENTION



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**PROTECTION AGAINST FLOODS  
MUST PASS THROUGH A COORDINATED APPROACH,  
COMBINING, ON THE SCALE OF BASINS AND SUB-BASINS:**

- Protecting people and properties,
- Reducing vulnerabilities,
  - *Restoring the free flow of rivers,*
  - *Preserving - rehabilitating the natural flooding areas,*
- Foreseeing hazardous events,
  - *Identification of hazardous areas,*
  - *Prohibition of buildings in the exposed areas,*
- Warning and educating.



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## **INTEGRATED WATER RESOURCE MANAGEMENT : MAIN BASIC FUNCTIONS**



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- **International agreements**
- **Legislation - Regulations**
- **Standardization**
- **Authorizations for abstraction or discharge - Water policing**
- **Monitoring**
- **Follow-up of the environment and uses**
- **Warning and protection**
- **Planning**
- **Funding - Programming**
- **Investments**
- **Operation - Maintenance**
- **Research**
- **Training**
- **Information**

**ALL OF THESE IMPLIES COSTS WHICH MUST BE PAID!**



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**water resources management should be organized:**



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**River basins are natural units,  
where water runs,  
on the ground and in sub-soil**

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



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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>2002</i>	<i>Percentage Of territory</i>
<i>Africa</i>	<b>59</b>	<b>62 %</b>
<i>Asia</i>	<b>57</b>	<b>39 %</b>
<i>Europe</i>	<b>69</b>	<b>54 %</b>
<i>America North</i>	<b>40</b>	<b>35 %</b>
<i>America South</i>	<b>38</b>	<b>60 %</b>
<b><i>TOTAL</i></b>	<b>263</b>	<b>45 %</b>



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**water resources management should be organized:**



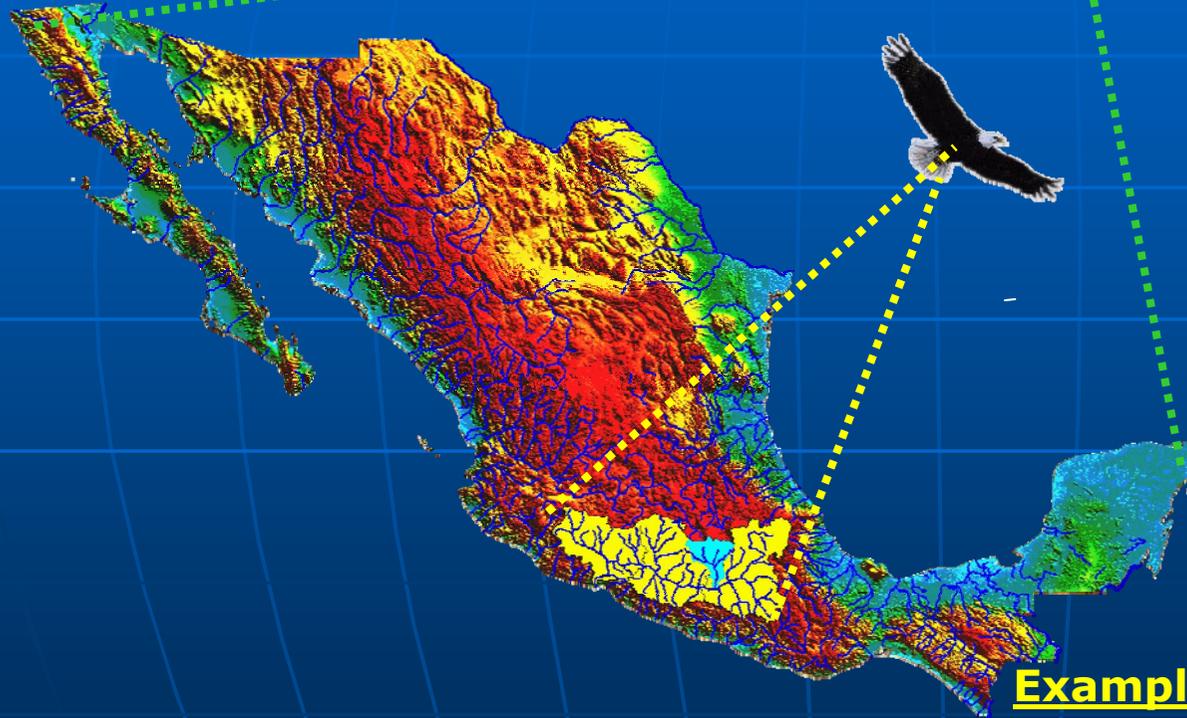
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#### The National Water Commission

- 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.



**Example of SINA and SIRA in Mexico**

**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.



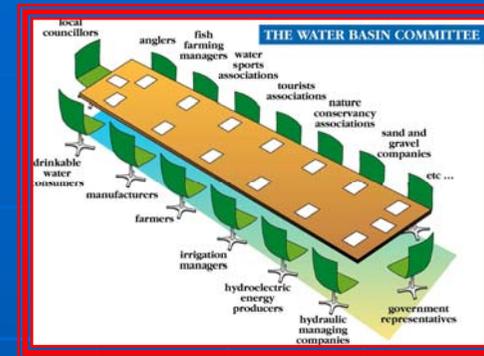
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**water resources management should be organized:**



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**Conflicts** requirements collected  
from each point of view



Designing a program  
through **dialogue**

Reaching **agreement**  
with an ambitious program



### **3) 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.



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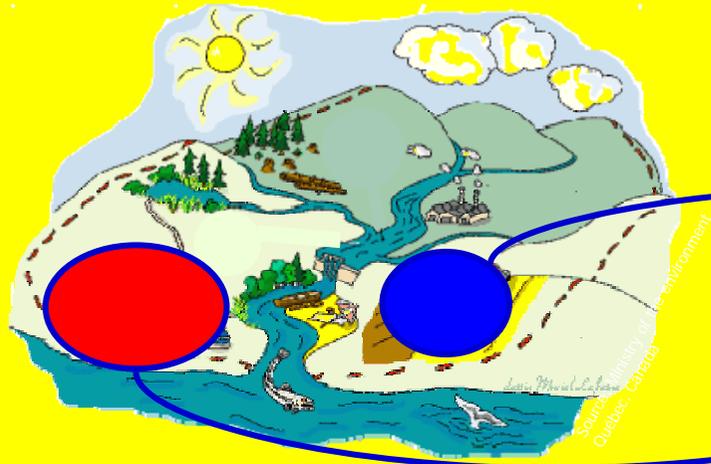
## water resources management should be organized:



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in  
Paris

2004

### Description of the initial situation

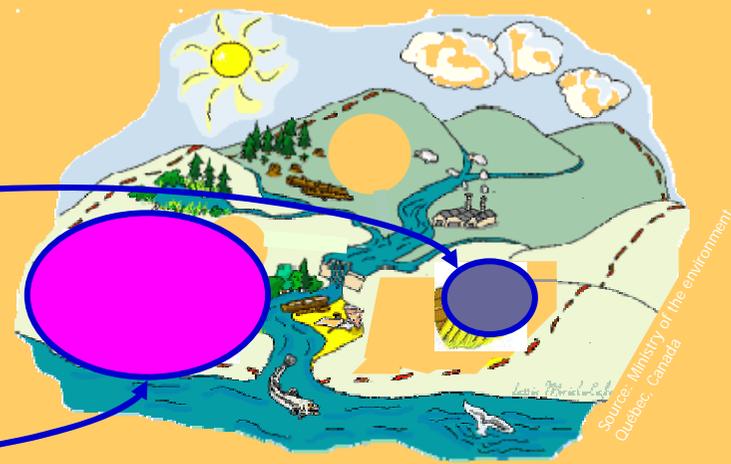


Focus on economic aspects:

- 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

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



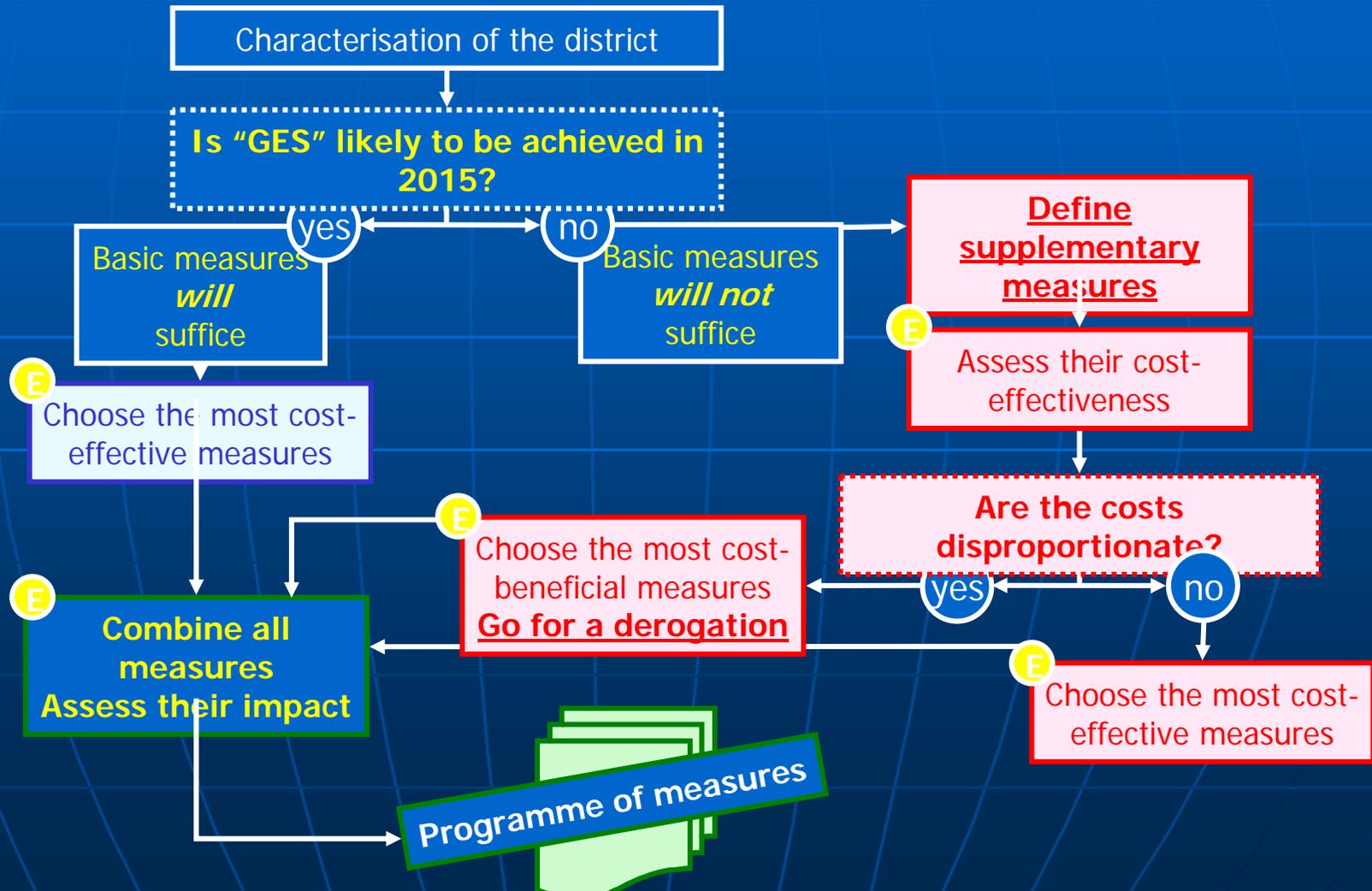
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## 5) through the development of Programs of Measures and multiyear priority investments;





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**water resources management should be organized:**



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**6) with the mobilization of specific financial resources,**

### **VARIOUS COMPLEMENTARY SYSTEMS FOR COST RECOVERY**

**ADMINISTRATIVE TAXES: paid to the general budget.**

- General taxes or penal fines
- New ecological tax.

**WATER-RELATED CHARGES:**

- National water charges – transiting through  
“Special Accounts of the Treasury”
- Basin water charges – levied by the Water Agency

**TARIFFS - THE PRICING OF COMMUNITY SERVICES:**

- Price of raw water – levied by big developers
- Price of drinking water + sanitation  
– levied by the municipalities or water suppliers

**TRANSFERTS: International aid or from other economical sectors.**



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## THE « POLLUTER - USER – PAYS » PRINCIPLE

Abstraction  
taxes

French WA = 2.300 Bi €/year!

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 = 6-year Program

Big developers

Local authorities

Farmers

Industrialists

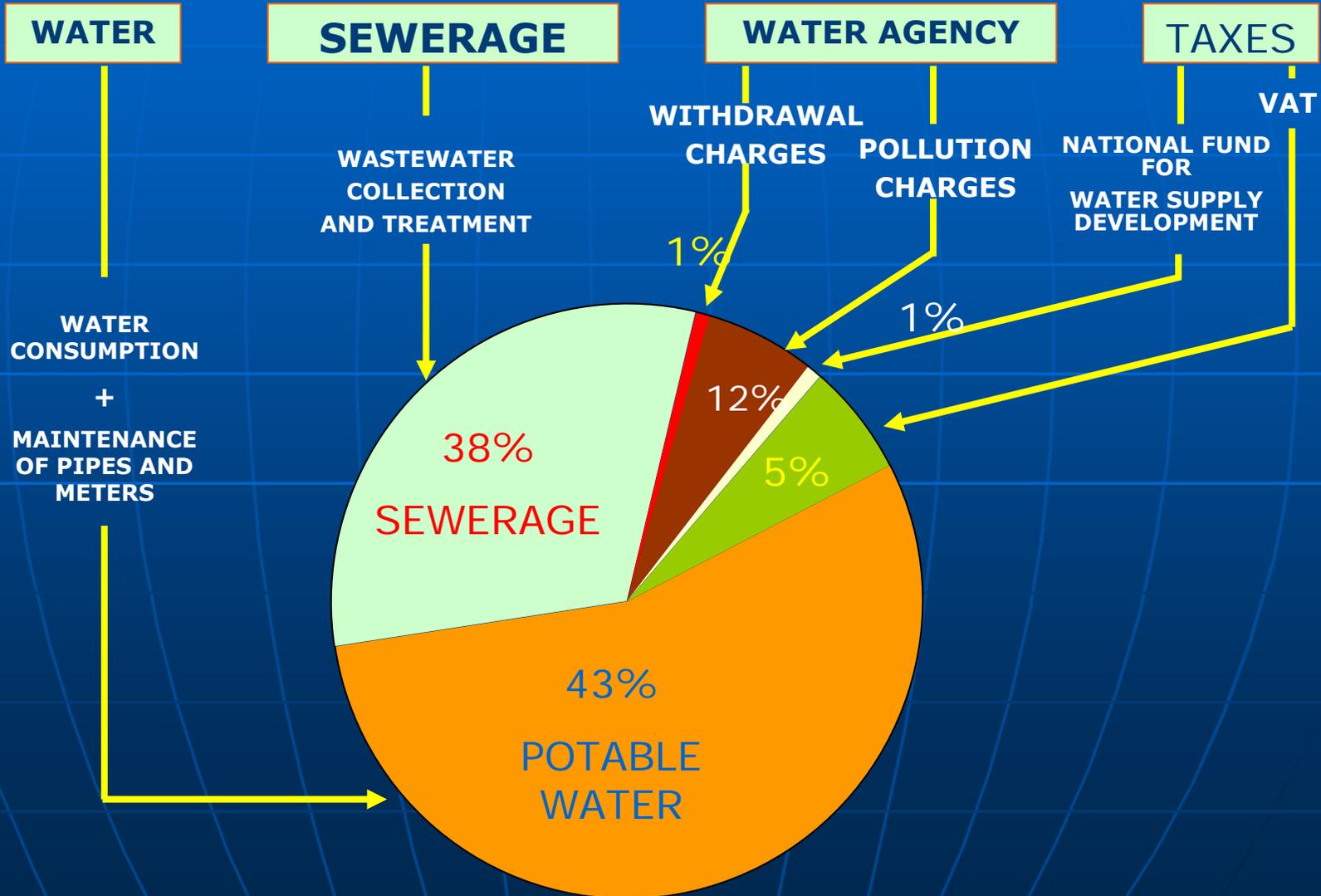


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# WATER PRICE





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## FINANCING WATER POLICY :



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### EQUALIZATION OF FINANCIAL EFFORTS:

- Territorial equalization:  
in the same geographic area or basin
- Sectoral equalization:  
between public services – drinking water – electricity – sanitation – solid wastes ...
- Equalization between users:  
rich, poor, big consumers / polluters,  
small consumers / polluters
- Equalization between functions:  
between upstream and downstream areas,  
between commercial services and administrative functions



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## « 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

### THE DIFFERENT HYDROLOGICAL SCALES:

Water bodies  
scale of evaluation  
of the achievement  
of good status

District =  
river basins + associated  
groundwaters and coastal waters



- 1.3 billion human beings have no access to safe water,
- 2.6 billion human beings have no basic sanitation.



➤ **Equalization between users:**  
richest / poorest,  
big consumers / small consumers  
big polluters / small polluters



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## IS THE WATER SUPPLIED EXPENSIVE ?



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### IN FRANCE :

Water price is different in every service for water supply and sanitation,

It corresponds to the total cost of services (investment and operation), taxes (VAT) and charges (Water Agencies and FNDAE) included,

In 2007, its national average was 3,00 €/m<sup>3</sup> :  
- drinking water  
- collection and treatment of wastewater + sludge,

It corresponds to :

**1 M3 = 1,000 liters  
Of drinking  
+ treated waste water**

**3,00 €/m<sup>3</sup>**

- 1 pack of mild cigarettes,
- 2 litres of superpetrol,
- 1 "can of Coke" in a bar,
- 10 liters of mineral water.



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## FINANCING WATER POLICY :



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### ALL THE USERS MUST CONTRIBUTE

- ➔ The taxpayer : - income taxes, taxes
- ➔ The offender : - fines
- ➔ The user : - water-related taxes
- ➔ The polluter : - price of community services
- ➔ The individuals : - price of his own works

**There is always someone who has to pay !**

**THE CHOICE DEPENDS OF EACH NATIONAL PARTNERS**



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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,



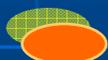
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## INTEGRATED WATER RESOURCE MANAGEMENT :



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**DEFINING ROLES AND RESPONSIBILITIES OF EACH:**  
**There is never a sole and unique manager!**



**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**



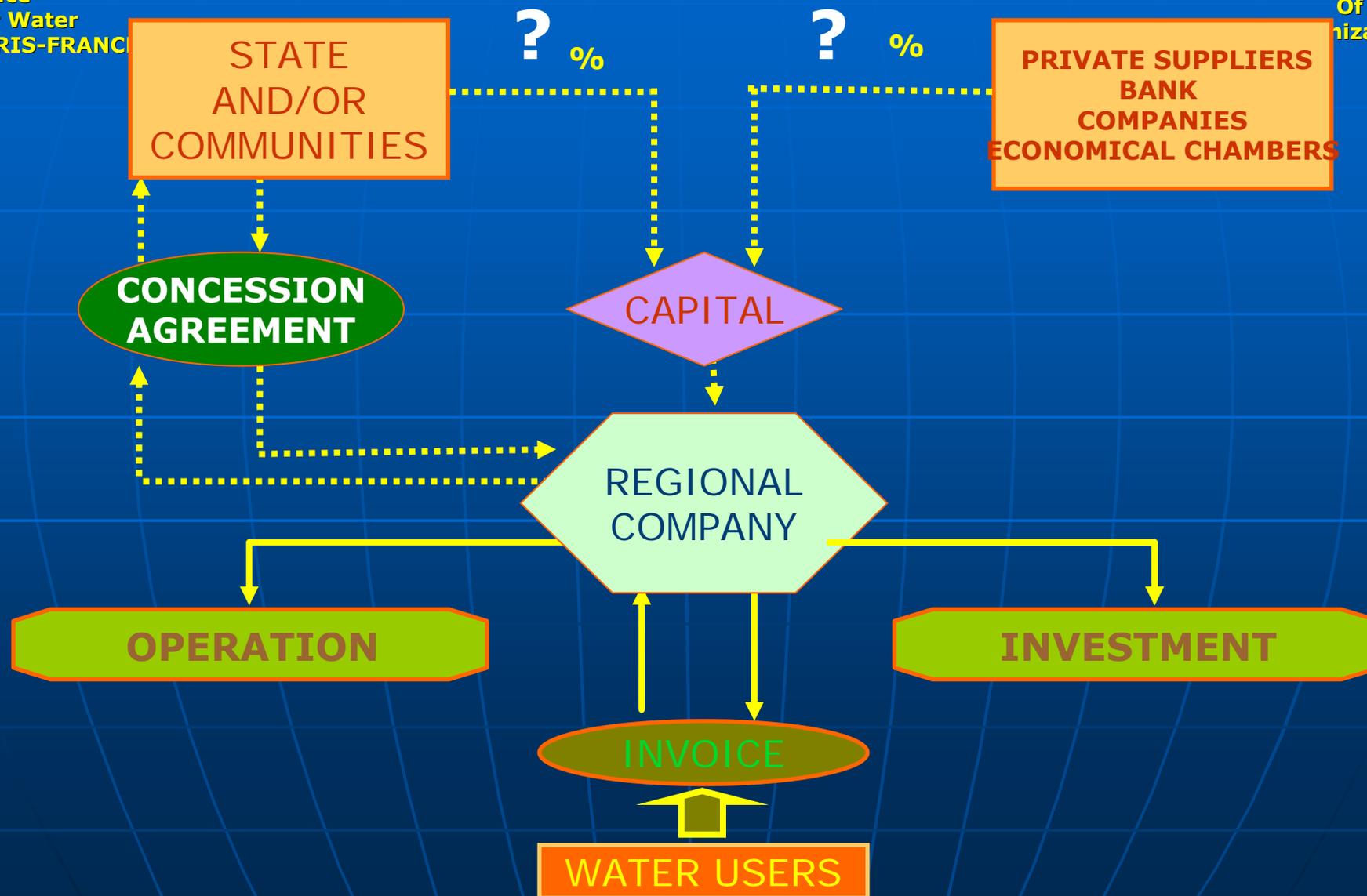
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# VARIOUS MANAGEMENT METHODS



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## CONCESSION AGREEMENT





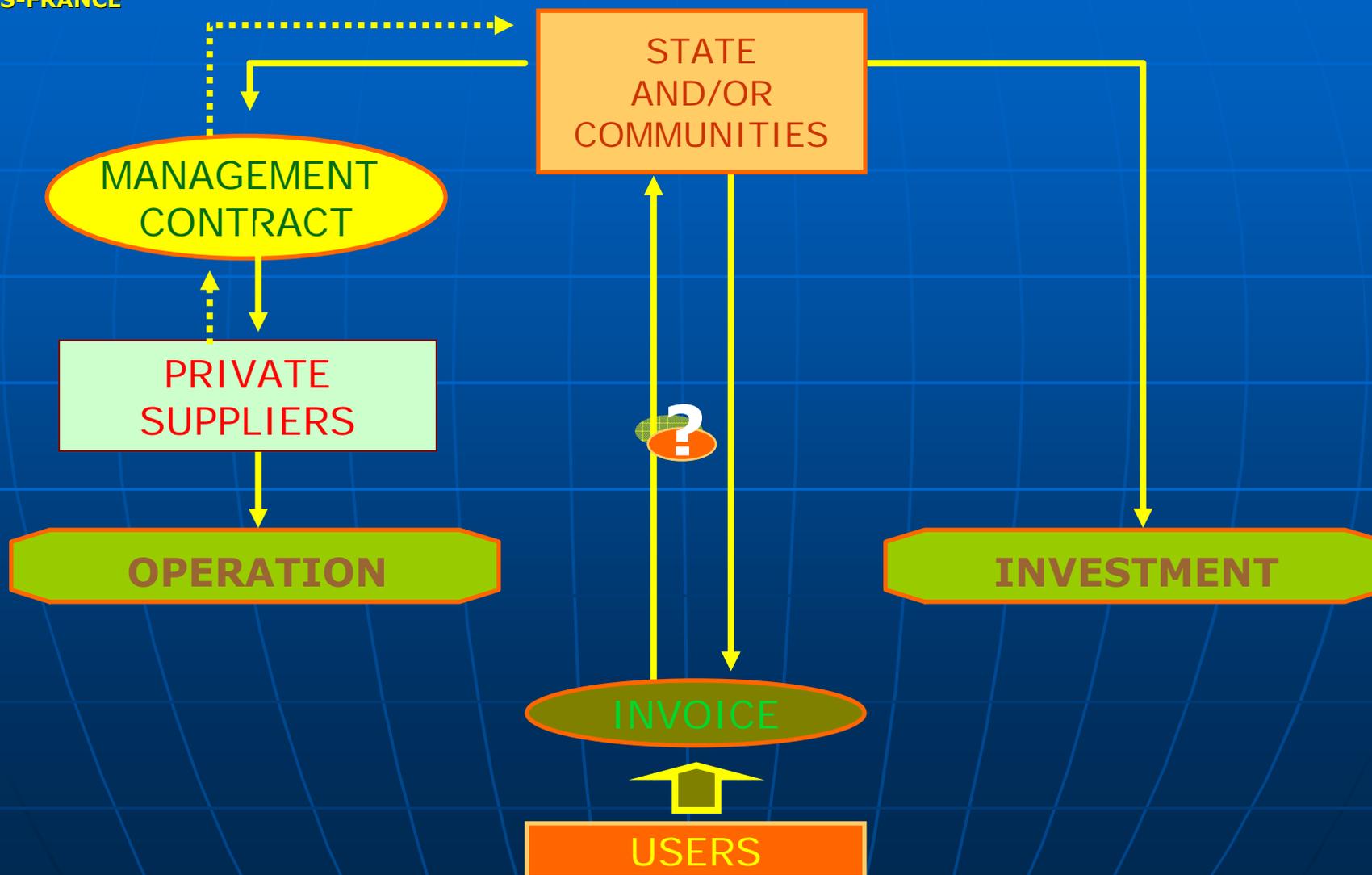
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# VARIOUS MANAGEMENT METHODS

## MANAGEMENT BY PUBLIC AUTHORITY WITH PRIVATE MANAGEMENT CONTRACT



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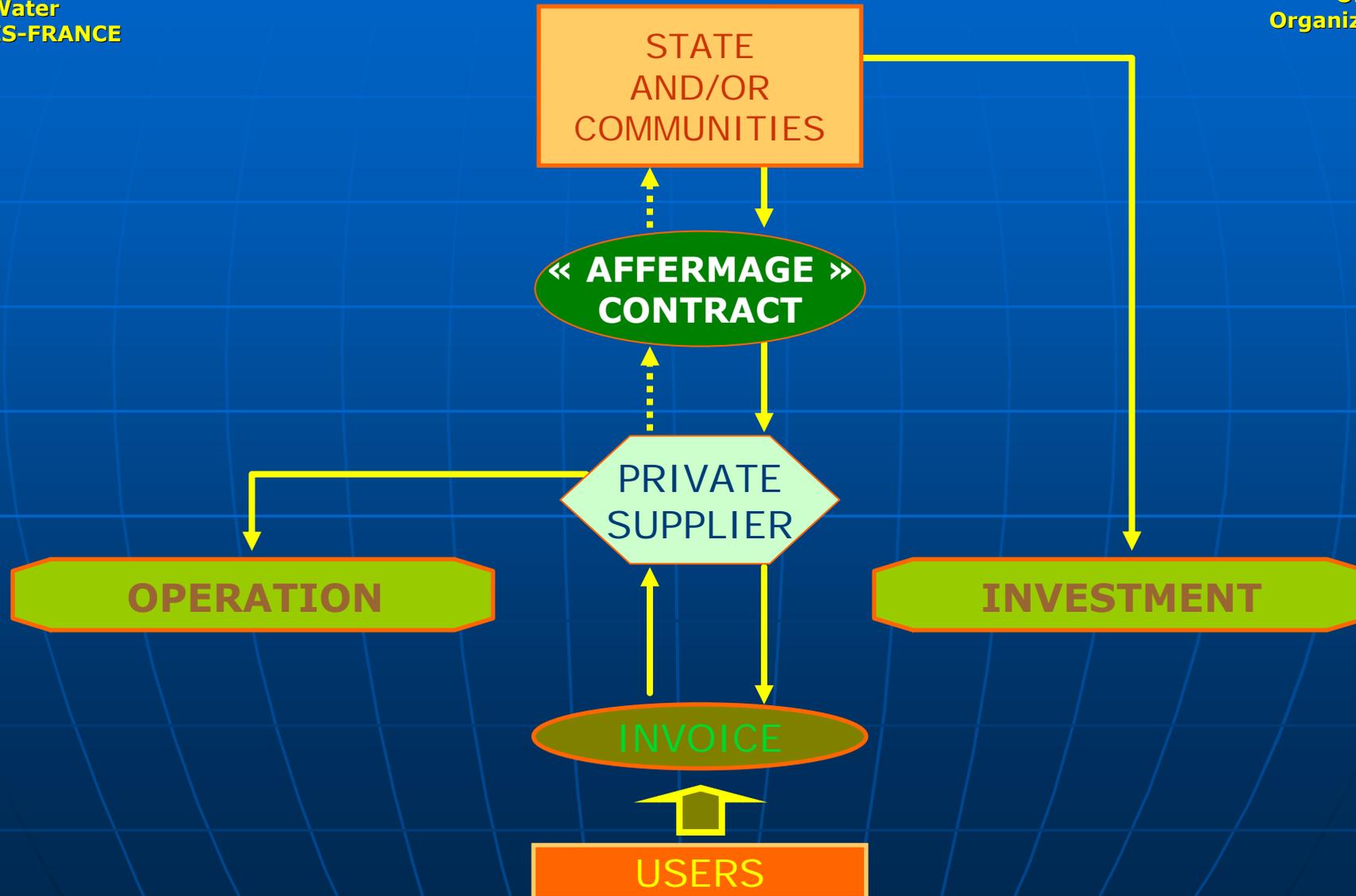
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# VARIOUS MANAGEMENT METHODS



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## DELEGATED MANAGEMENT : LEASING « AFFERMAGE »





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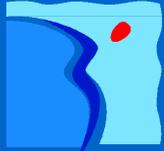


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# **Implementation of the UN Convention for the international water courses management in Europe – HELSINKY 1992**

**Building the data administration and sharing capacities  
of the national and local Authorities involved in 2 pilot basins,  
by using methodologies that can be replicated  
in other transboundary basins of the region.**





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**Implementation of**  
**the European Water Framework Directive**  
**in the 25 countries**  
**of the enlarged European Union,**  
**as well as in the candidate countries for accession,**  
**is a major milestone for promoting the principles**  
**of good governance advocated by INBO.**

**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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## INVESTING IN IWRM... IT PAYS BACK!

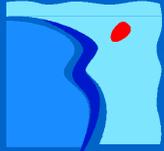


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### ■ CONCLUSION:

- Various combinations of responsibilities are possible,
- There is no system better than the others:
  - The results depend on:
    - ❖ A strong political will,
    - ❖ A long-term stability of the established mechanisms,
    - ❖ The efficiency of the management of each organization,
    - ❖ The available human and financial resources.
  - The implementation of reforms can only be gradual,
  - The real involvement of local authorities, users and collective interest groups in decision-making facilitates its « acceptability », an offer/demand adequacy and the establishment of new financing systems.



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### ■ **CONCLUSION (2):**

#### ➤ **Total cost recovery still do not exist anywhere,**

- The opportunity and environmental costs are hardly mentioned,
- Investment must still be/has been strongly subsidized,
- Sometimes the operating expenses are still not covered,

#### ➤ **The creation of new incomes coming from the users:**

- ❖ Pricing of community services,
- ❖ Taxes / common cause systems,
- ❖ Application of the « users – polluters - pay » principles,

**relies on:**

- **the existence of full-right « Basin Councils » ...which « push »,**
- **the specific allocation of the newly collected financial resources,**
- **their non-substitution to the credits already reserved for business as usual,**
- **the quick achievement of tangible results by demonstrating “good use”,**
- **the contribution to a real « + » for the payers!**

...the industrialists are often the driving forces  
for the new financing systems when they benefit from them.



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**IF WE ARE NOT ABLE TO MOBILIZE ENOUGH MONEY,  
WE SHALL NOT HAVE THE FRESH WATER WE NEED!**



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- The time has ended when each contracting authority could undertake any selective development or specialized equipment at its own choosing: - only concerned with its particular and sectorial interests,  
- without taking a wider view of the situation and without consultation.
  
- **At present, development of watercourses must be designed within the framework of global and integrated projects :**
  - taking the whole basin into account and considering the river and its tributaries from their sources to their mouths,
  - contemplating that all water uses be quantitatively and qualitatively satisfied, together with the resulting requirements,
  - studying the impacts on the environment and integrating the protection of aquatic ecosystems and the prevention of harmful effects regarding the conservation of natural media,
  - ending in a multipurpose design and a consistent management of the various installations and equipment.



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For Water  
PARIS-FRANCE

# AN ORGANIZATION SPECIFIC TO SUBCONTRACTING



International  
Network  
Of Basin  
Organizations

## Public Authorities have entrusted specialized institutions with specific development or management responsibilities :

### ⇒ State Public Establishments:

- . The Higher Council of Fisheries, which is responsible for piscicultural fauna,
- . The National Office for Forestry, which is concerned with land rehabilitation and manages public forests,
- . The French Waterways, which operate transportation infrastructures on rivers and canals.

### ⇒ Public Establishments for interdepartmental cooperation:

- . Public Establishment for the Development of Loire river and tributaries (EPALA),
- . Interdepartmental Public Establishment for Dordogne (EPIDOR),
- . Institution for the Dam-Reservoirs of Seine river....

### ⇒ National or regional companies:

- . National Rhone Company,
- . Electricity of France,
- . Regional Development Companies:
  - Development Company for Lower-Rhone and Languedoc
  - Development Company for Gascogne
  - Rural Development Company for the Aquitaine
  - Hydraulic Office for Corsica
  - Canal of Provence Company
  - Company for the Development of Auvergne and Limousin.