In the European Union, for the first time in the World, 28 EU countries + 2 adopted The same basin oriented approach!

- **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.
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.
All the river basins in Europe are concerned:
THE DIFFERENT HYDROLOGICAL SCALES:

**District** = river basins + associated groundwaters and coastal waters

**Water bodies**
scale of evaluation of the achievement of good status

**Sub-basin/Sector/ Water type**
element of district to deal with particular aspects

UPSTREAM-DOWNSTREAM » COMMON CAUSE
ON THE SCALE OF BASINS AND SUB-BASINS
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, is a major milestone for promoting the principles of good governance advocated by INBO.

The European Water Framework Directive

VERY AMBITIOUS CHALLENGES:

- PREVENTING THE DETERIORATION OF WATER RESOURCES,

- REDUCING THE EMISSIONS OF SUBSTANCES,

- ACHIEVING A "GOOD STATUS" FOR WATER AND AQUATIC ENVIRONMENTS.
The concept includes all SURFACE and Groundwater
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, interfaces with:
  - inland navigation,
  - energy production,
  - agriculture,
  - the prevention and protection against floods and droughts…
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
THE EUROPEAN UNION’S FLOODS DIRECTIVE PLANS A NEW APPROACH PASSING THROUGH:

- A PRELIMINARY FLOOD RISK ASSESSMENT
- THE SELECTION OF AREAS WITH SIGNIFICANT POTENTIAL FLOOD RISK,
- HAZARD AND RISK MAPPING OF THESE AREAS,
- APPROVAL OF FLOOD RISK MANAGEMENT PLANS,
- AND OF THEIR PROGRAMMES OF MEASURES BY DECEMBER 2015.

IN THE TRANSBOUNDARY BASINS IN PARTICULAR, COOPERATION BETWEEN RIPARIAN STATES SHOULD BE PROMOTED FOR JOINTLY LOOKING FOR COORDINATED SOLUTIONS AND FOR SHARING INFORMATION AND RESPONSIBILITIES.
WITH REGARD TO DROUGHTS:

WATER SCARCITY MANAGEMENT PLANS SHOULD PRIORITIZE THE VARIOUS USES, ENSURING A BETTER OPTIMIZATION OF WATER AND AVOIDING WASTAGES.

MOBILIZING NEW RESOURCES SHOULD BE PLANNED WHEN THEY ARE ECOLOGICALLY ACCEPTABLE AND ECONOMICALLY REASONABLE.
WITH REGARD TO DROUGHTS:

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

... MUST BECOME PRIORITIES.
Natural Water Retention Measures

NWMR as one of the responses can:
- reduce impact of diffuse pollution,
- regulate the flow regime in natural pattern
- reduce vulnerability to Climate Change,
- restoring the deteriorated morphological element on the riparian area and the floodplain,
- improve water status (surface and groundwater) (incl. DW, BW),
- be a Better Environmental Option for Flood risk management supporting Natural Flood Risk Management.
AN OBLIGATION OF RESULT

General obligation

Actions defined with regards to the goal

Good status

Achieving a “good status” for surface and ground waters
With 3 steps:

• 2015
• 2021
• 2027

Derogations to be justified
FOR EACH DISTRICT, MUST BE FORMULATED:

- A "MANAGEMENT PLANS",
  DEFINING THE OBJECTIVES TO ACHIEVE, AND

- "PROGRAMS OF MEASURES",
  DEFINING THE NECESSARY ACTIONS.

To reach these objectives 😊


WFD: 10 Years
AN OVERALL APPROACH, WITH A PRECISE TIMETABLE, METHODS AND A PROGRESSIVE DEVELOPMENT

HUGE WORK has been achieved from 2000!!!
110 RIVER BASIN DISTRICTS HAVE BEEN ESTABLISHED
40 ARE INTERNATIONAL RIVER BASIN DISTRICTS

HUGE WORK has been achieved from 2000!!!
For each of them
a basin District Authority
has been nominated

HUGE WORK has been achieved from 2000!!!
Integrated information and monitoring systems, which are reliable, representative, harmonized and easily accessible, and specific research, should be organized in each basin…

We cannot manage that we cannot measure!!
In the European Union,

50,000 "WATER BODIES" have been identified:

- River WB = 27,455
- Lake WB = 10,060
- Groundwater WB = 7,719
- HMWB/AWB = 5,783
# COMPLEX INFORMATION SYSTEMS

## Data Flow

<table>
<thead>
<tr>
<th>Data Production</th>
<th>Data Transfer</th>
<th>Data Storage</th>
<th>Data Interpretation and Use</th>
</tr>
</thead>
</table>

## Key Components

- **measures**
- **withdrawals**
- **analyses**
- **location**
- **automatic**
  - on-line
  - manual
  - periodical
- **Banks**
  - thematic
  - geographic
  - specialized
  - general
- **models**
- **expert systems**
- **warning**
- **telematic**
- **directories**
- **mapping**
- **assistance to decision-making**
- **publications**

## Investment and Operation

**INVESTMENT AND OPERATION**

**AUTOMATIC WARNING OR OPERATION SYSTEMS - "SLOW" SYSTEMS FOR STATISTICS**
Who is really in charge for implementing the WFD??

**STATE**
- Setting the legal framework (EEC Directives)
- Authorization for Abstractions and Discharges Reporting

**STATE**
- River District Authorities
- Water Agencies
- River Basin Committees

**STATE**
- State administrations
- Municipalities
- Industrialists
- Farmers
- Developers

**STATE**
- Building and Operation of Infrastructures

**STATE**
- RB Management Plan
- Programme of Measures
- Funding and Programming

**STATE**
- Dialogue

**STATE**
- Implementation
ALL MAJOR WATER USES ARE CONCERNED

Inland Navigation

Hydropower
Powerplants cooling

Industrial uses
- abstraction
- discharges

Agricultural uses
- abstraction
- diffuse discharges

Urban uses:
- drinking water supply
- wastewater treatment

Recreational / ecological uses
- angling
- bathing...

Fish farming
Professional Fishing

Conservation of ecosystems:
- rivers, lakes, wetlands, aquifers, coastal areas,
A River Basin Management is integrating various stakeholders. Conflicts requirements collected from each point of view.

Designing a program through dialogue.

Reaching agreement with an ambitious program.

THEIR PARTICIPATION IS A KEY ISSUE!!
In some EU countries this participation is organized in basin committees or councils.

In particular, they are associated to:

- The definition of long-term objectives,
- The preparation of management plans or master plans,
- The selection of development and equipment priorities,
- The joint implementation of programmes of measures and multiyear priority investment programmes,
- The establishment of financing principles and the calculation of water taxes that concern them.
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

*EVERYWHERE, ONE OF THE PRIORITIES IS TRANSPARENCY AND PUBLICLY OWNED WATER MANAGEMENT.*

IT WOULD BE A PITY JUST TO ORGANIZE A “ONE SHOT” CONSULTATION WITHOUT ANY FOLLOWING ALL ALONG THE REAL IMPLEMENTATION PHASE OF THE “WFD”...

Governments decide, but local actors implement!!!!!!
2 friendly mascots to get the public support (so that it takes parts in the consultation)

Promotion campaign in the media: « MERCI, d’avance! »

Postal delivery of the questionnaires in the mailboxes (1 800 000 copies)

BLOUP, BLOUP!! & CLAQ, CLAQ!!
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

Baseline scenario: projection for 2021
- appraisal of evolutions of uses, pressures...
- identification of potential gaps in water status with GES

Based on Basin Management 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

Characterisation of the district

Is “GES” likely to be achieved in 2015?

Basic measures will suffice

Choose the most cost-effective measures

Combine all measures Assess their impact

E

Basic measures will not suffice

Define supplementary measures

Assess their cost-effectiveness

Are the costs disproportionate?

Choose the most cost-beneficial measures Go for a derogation

Are the costs disproportionate? yes

Choose the most cost-effective measures

Programme of measures

Permanent Technical Secretariat PARIS
## TRANSPARENCY OF COSTS AND POLLUTER-PAYS PRINCIPLE:

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

Sum = full cost
The «Polluter - User - Pays» Principle

The Franch Water Agency’s Budget adopted by the Board of Directors with approval of the Basin Committee.

- Abstraction taxes
- Pollution taxes

10% Studies & Research
20% Operation
40% Measurement networks

90% Aid = 6-year Program
- Regional developers
- Local authorities
- Farmers
- Industrialists

The mobilization of specific financial resources?
In Europe 69 basins are transboundary ones!

Visible progresses have been achieved for better European Transboundary Basin Management!
In Europe, Riparian Countries in transboundary basins have created joint managing bodies... sometime for decades.

Such International Commissions allow:

- better dialogue,
- exchanging useful information and warning,
- resolving potential conflicts,
- sharing benefits from better joint management and
- strengthening transboundary cooperation.
Cooperation beyond EU current and future borders

Danube river basin: 18 countries, 817,000 km² catchment area
At the end of the 1st planning period 2010 - 2015, a common assessment of the RBMPs is organized by the EC between the different River Basin District Authorities.

“THE PEER REVIEW MECHANISM”

For mobilizing the practitioners of RBDs and their competent authorities which will voluntarily submit RBMPs to the review performed by experts from other similar authorities of other EU Countries.
River Basin Management

River basin management planning along WFD principles: lessons learnt from French-Chinese cooperation on the Hai River basin

Agreement signed in 2009 between Chinese Ministry of Water Resources (MWR) and French Ministry of Ecology and Sustainable Development (MEDDE),
 Governance and planning mechanisms for IWRM
Test on Zhou sub-basin
1. Elaboration of diagnosis and River Basin Management Plan (RBMP)
2. Elaboration of a Programme of Measures (PoMs),
3. Setting up a coordination group for Zhou river basin management
4. Joint analysis of results and dissemination of good practices.

Technical expertise and exchanges:
1. Diffuse pollution and eutrophication control,
2. Assessment of ecological and chemical status of water bodies,
3. Ecological restoration,
4. Monitoring systems.
THANK YOU FOR YOUR ATTENTION!

www.inbo-news.org
www.iowater.org
mail: dg@oieau.fr
inbo@inbo-news.org