



## International overview on River Basin Organizations: Common structures, mechanisms and challenges

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# INBO: The International Network of Basin Organizations



Since 1994, INBO promotes:

- Exchange of BOs field experiences of IWRM implementation at basin level,
- Evaluation and dissemination of best practices,
- Circulation of information and training programs for staff of basin organizations and other relevant stakeholders,
- Elaboration of an Annual Network Newsletter with updated information from basins of the entire world,
- Handbooks for Integrated Resources Management in Basins,
- Participation to International High level Events : World Water Forum, RIO + 20, COP, etc.

# INBO: The International Network of Basin Organizations

## Members:

- “**Basin Organizations**”, entrusted with integrated water resources management at basin level.
- **Governmental administrations** interested in applying integrated and sustainable water resources management principles:
  - organization at the level of river basins,
  - associating local authorities, representatives of users,
  - promoting specific budgetary resources,
  - by applying the “user-polluter-pays” principle.
- **Bi/multi-lateral cooperation organizations** supporting IWRM at basin level.





# INBO: a global network of basin organizations



- 192 full members or permanent observers
- 71 countries
- 9 regional components



## Europe-INBO

The "EUROPE-INBO" group of basin organizations for the implementation of the Water Framework Directive was **created in Valencia, Spain, in November 2003.**

It gathers European Basin Organizations and Hydrographic District Authorities through regular meetings, to exchange on their practical approach and experience, identify operational problems, share difficulties and successes.

«Europe-INBO» is a member of the Strategic Coordination Group of the Common Implementation Strategy. It brings experiences and analyses coming directly from field practitioners.



# Peer-Review Mechanism for the Improvement of the Water Framework Directive Implementation

**Obj.:** set up a an experience sharing system between peers (staff from basin organizations) on participative river basin management planning (implementation of the Water Framework Directive -WFD)



## Candidate Basin Organizations benefiting from a PR mission:

1. South Baltic Water District, Sweden
2. Tiber Basin Authority, Italy
3. Duero River Basin Authority, Spain
4. Jucar River Basin Authority, Spain
5. Water Management Agency, Luxembourg
6. Catalan Water Agency, Spain
7. Autorità di Bacino dell'Alto Adriatico, Italy
8. River Basin District of River Kokemäenjoki – Finland
9. Rhine-Meuse Water Agency – France
10. Miño-Sil River Basin Authority – Spain
11. Northern Baltic Sea Water District Authority – Sweden
12. National approach – Poland
13. Danish Water Agency – Danemark
14. Malta
15. Ministry of the Environment – Estonia
16. Glomma River Basin District - Norway

# Peer-Review Mechanism for the Improvement of the Water Framework Directive Implementation

- INBO & partners (IOWater, Europe-INBO, MENBO, CEENBO, NIHWM).
- Schedule: First Peer Review missions (Aug. 2015), Finalization of most peer review missions (Sept. 2016), 4 peer review workshops (2016), Final assessment and report (Dec. 2016).
- Results: 68 reviewing experts from 15 Member States. Participants highly satisfied with this innovative experience sharing approach: gained experience and motivation in improving their daily work as basin managers.



# Optimal water resources management: IWRM at basin level



**INCLUDING GROUNDWATER!**

# Water knows no boundaries

1.



2.

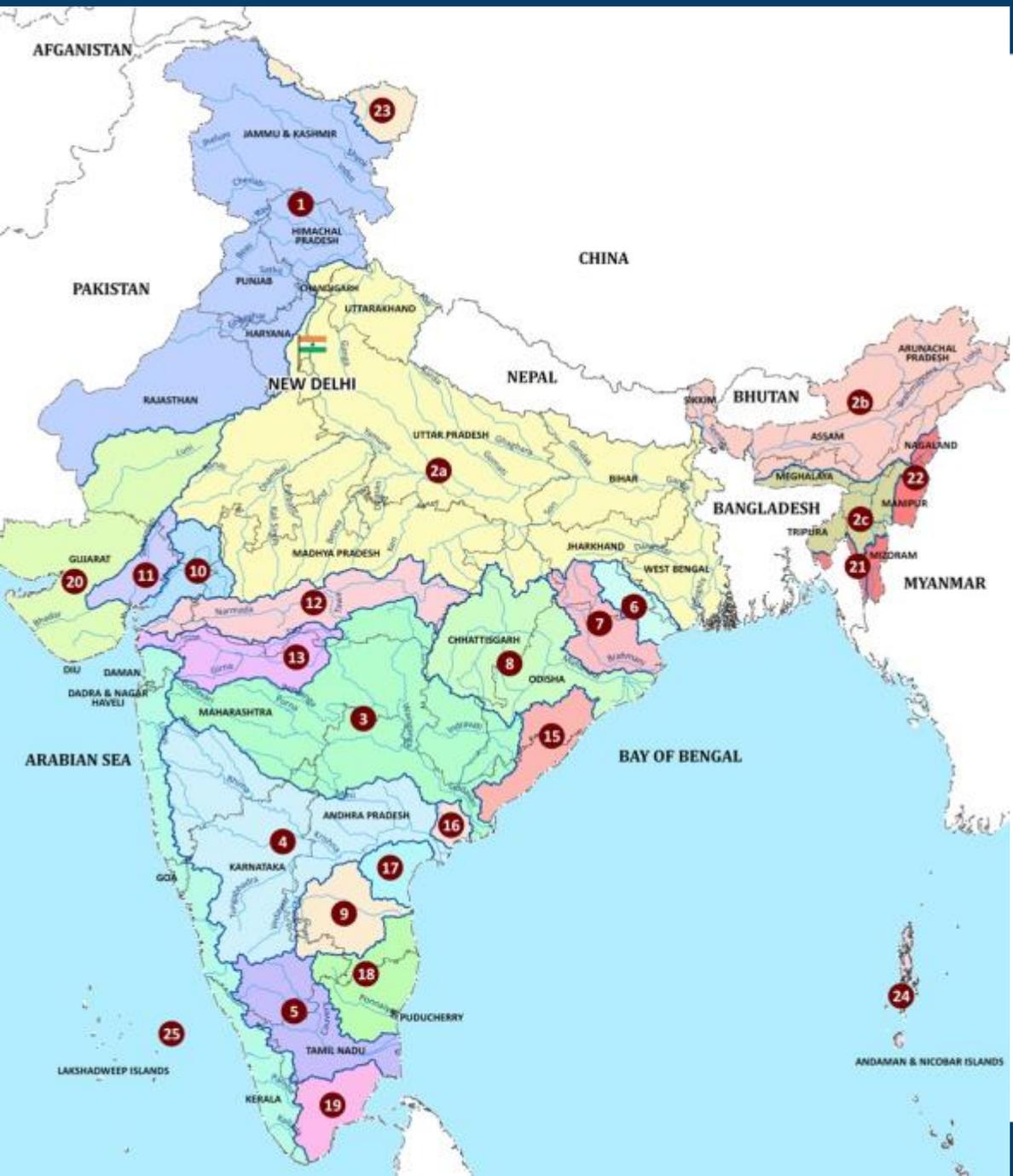


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3.



1. & 2.: transboundary rivers in Europe and Asia respectively,  
3.: transboundary aquifers in India.

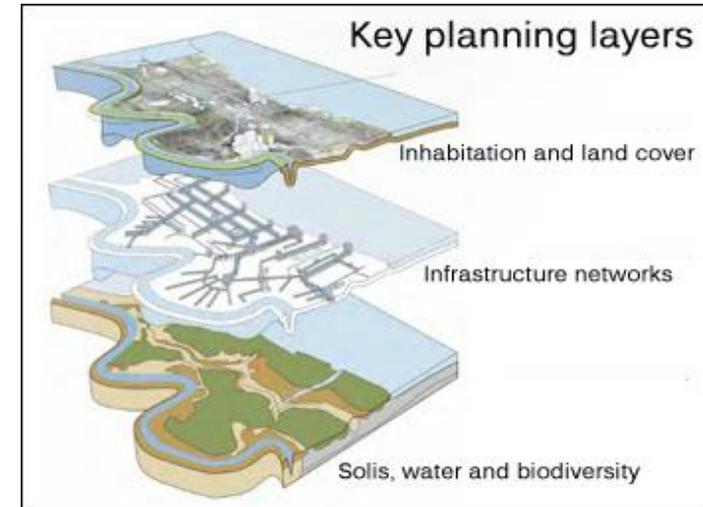


Major river basins in India.  
Most of them cross States borders.



## IWRM: operationalizing a concept

- 6 key principles for an operational IWRM:
  1. Managing water at basin level
  2. With integrated Water Information Systems
  3. With management plans
  4. With Programs of Measures & Investments
  5. with dedicated, sustainable financing mechanisms (e.g. « polluter/user-pays » principle)
  6. with large stakeholder participation in decision-making (e.g. national and local administrations, users, associations for environmental protection)

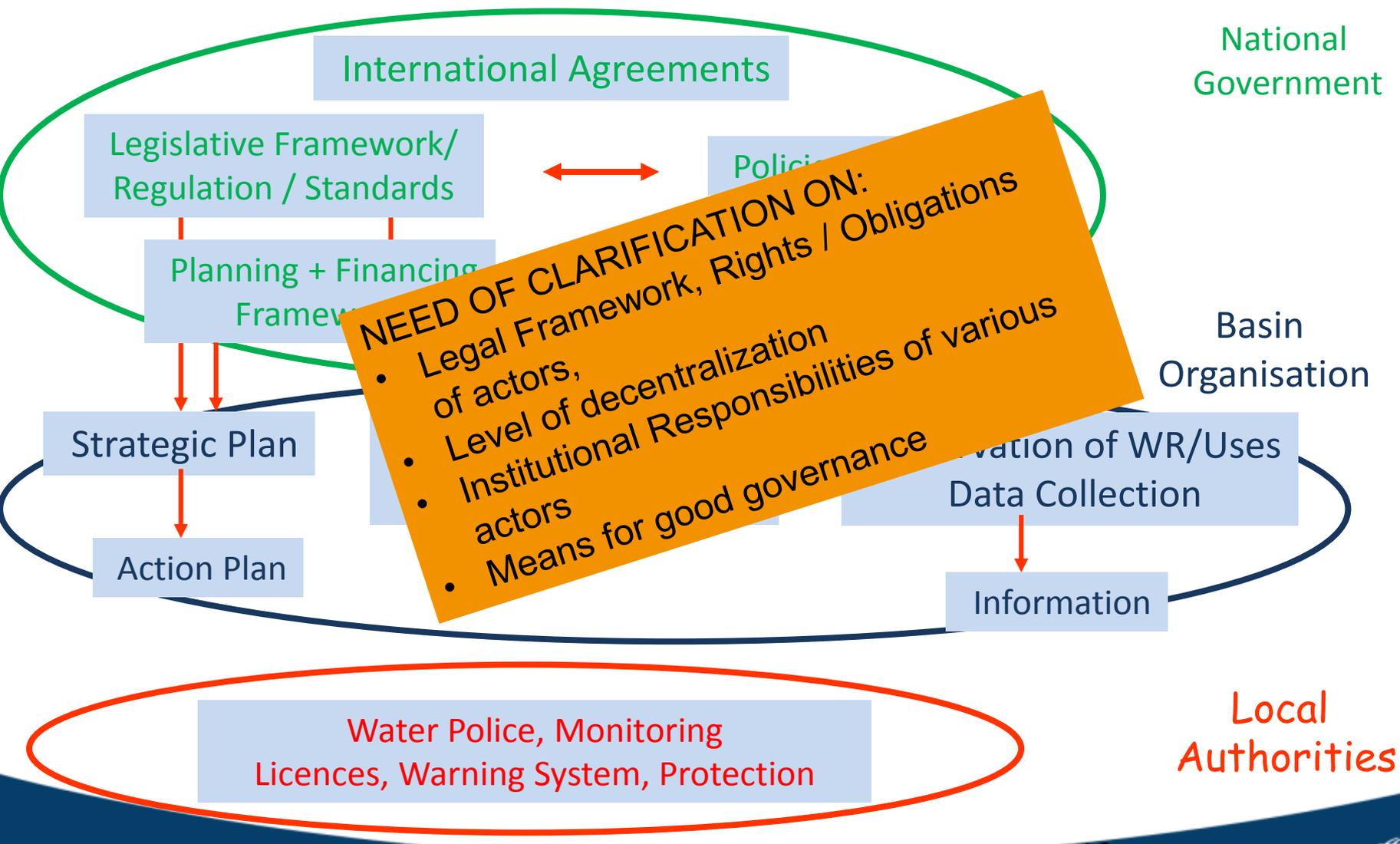


## Institutional framework for managing water at basin scale

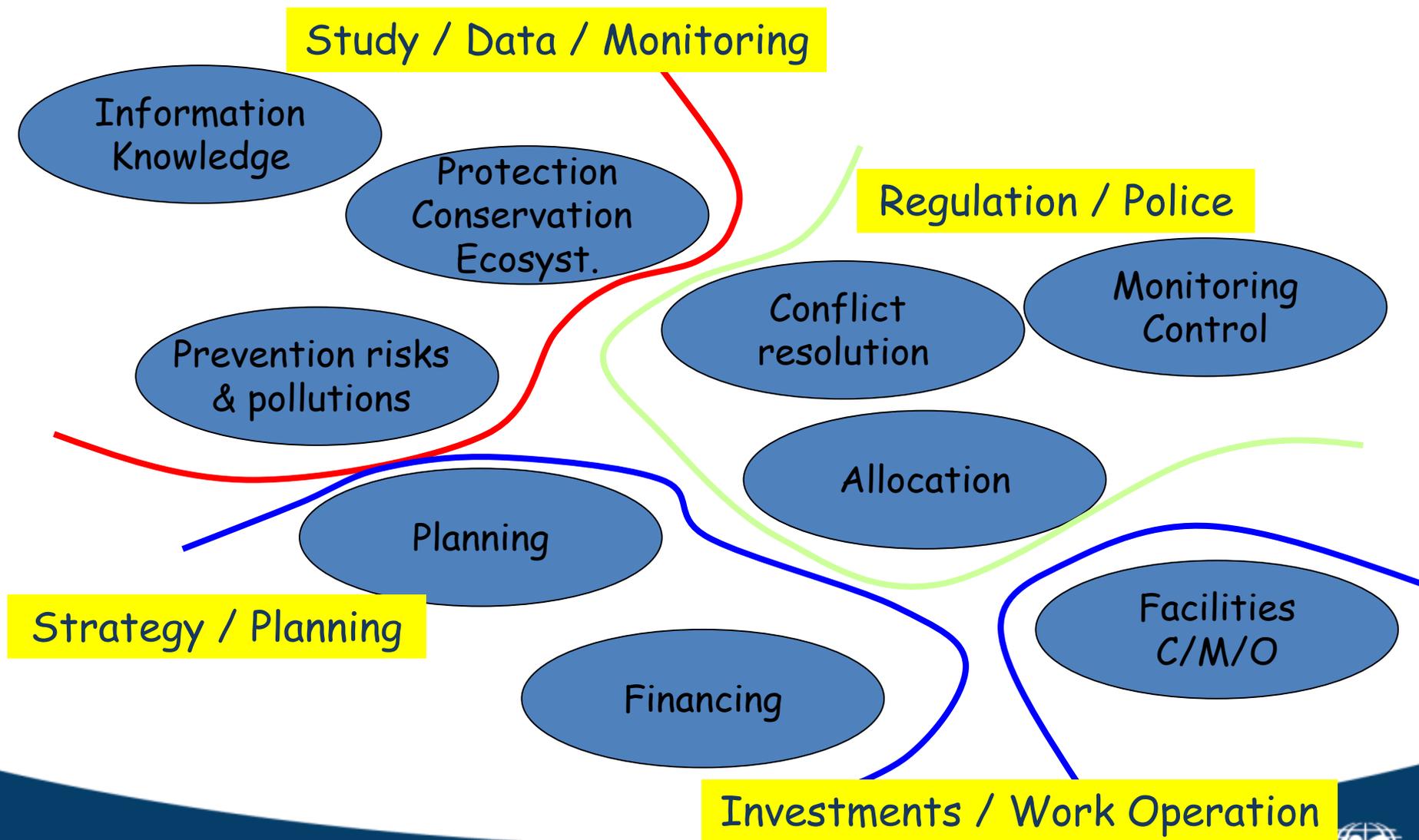
Key principles for well functioning basin organizations:

- Clear mandate : great diversity in options
- Well defined roles and responsibilities / institutional diagnostic
- Set up at all relevant levels:
  - river, lake, aquifer, national or transboundary
  - over whole “territory”
- Application of IWRM principles: participation, bottom up, intersectoral, multidisciplinary approach...
  - integration Water-Land
  - integration Land-Coastal areas

# What's needed at different scale for good basin management



## Possible functions at basin level



# Types of « basin organizations » and respective roles

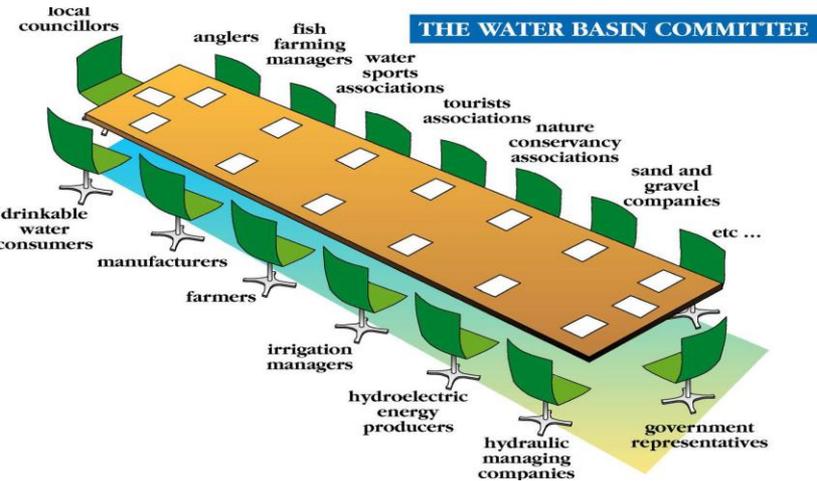
Type of organization	Basin	Stakeholders	Role
National basin agencies	France Spain	<ul style="list-style-type: none"> <li>- Basin commission</li> <li>- State</li> <li>- NGOs</li> <li>- Professionals</li> </ul>	<ul style="list-style-type: none"> <li>- Basin management planning (med/long term),</li> <li>- Tax collection,</li> <li>- Financing or supporting investments,</li> <li>- Water police, studies, data production, etc.</li> </ul>
Cooperation mechanisms.	Nile Guarani	<ul style="list-style-type: none"> <li>- Ministerial rep.</li> <li>- Perm. secret.</li> </ul>	Usually temporary for specific action plan, specific financing.
Basin Committee or Council	Mekong Danube Rhine	<ul style="list-style-type: none"> <li>- Ministerial rep.</li> <li>- Loc. &amp; nat. administrations</li> <li>- Economic sectors</li> <li>- NGOs</li> </ul>	- Advisory or decisional (e.g. planning, taxes definition, water allocation)
Arbitration Authorities	ICJ	<ul style="list-style-type: none"> <li>- Ministerial rep.</li> <li>- lawyers</li> </ul>	Decision-making on water conflicts
Administrative Commission	<ul style="list-style-type: none"> <li>- Danube (ICPDR)</li> <li>- Rhine (ICPR)</li> </ul>	<ul style="list-style-type: none"> <li>- Ministerial rep.</li> <li>- Perm. secret.</li> <li>- Stakeholder rep.</li> </ul>	Transboundary basin management planning, incl.: <ul style="list-style-type: none"> <li>- Coordination of basin-wide projects,</li> <li>- Information and data exchange,</li> <li>- Definition of common rules (e.g.: nav., allocation)</li> </ul>
Organizations in charge of infrastructures construction / operation	<ul style="list-style-type: none"> <li>- Senegal (OMVS)</li> <li>- Niger (ABN)</li> </ul>	<ul style="list-style-type: none"> <li>- Ministerial rep.</li> <li>- Perm. secret.</li> <li>- stakeholder rep.</li> </ul>	Beyond transboundary management planning: joint investments in infrastructures (nav., dams -flood, irrigation or hydropower) and public or private company entrusted with construction & operation. Financed through: tariff of services/resources provided (e.g. raw water) or by levying specific taxes



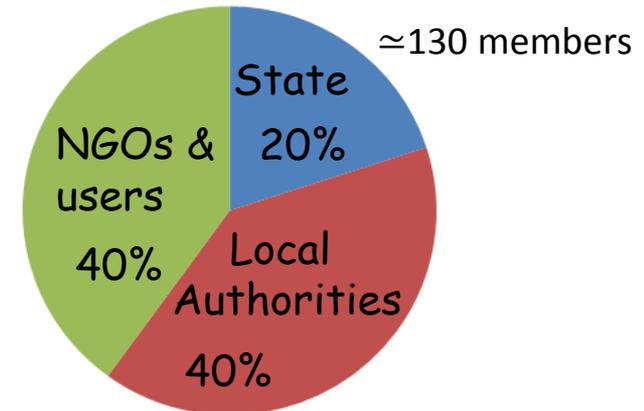
# Comparative analysis of basin management organizations

Role	France	Spain	Brazil	Mexico	Morocco
Water police	State services	BOs (Hydr. Conf.)	Federal or State services	Nat. Water Commission (NCW)	BOs (Hydr. Basin Agency)
Cadaster	BOs (agency)	BOs (Hydr. Conf.)	BOs (agency & committee)	NCW	BOs (Hydr. Basin Agency)
Basin management plan	BOs (committee)	BOs (Hydr. Conf.)	BOs (committee)	BOs (committee)	BOs (Hydr. Basin Agency)
Concession on infrastructures / raw water sales	Land-use planners	BOs (Hydr. Conf.)	Land-use planners	NCW	BOs (Hydr. Basin Agency)
Tax collection and PoM	BOs (agency)	BOs (Hydr. Conf.)	BOs (agency)	BOs (agency)	BOs (Hydr. Basin Agency)
Water and sanitation services	Municip.	Municip.	Municip. or State	Municip. or State	Municip.+ONEP
Irrigation	Land-use planners, associations	Associations	State or associations	Associations	OMVAR
Monitoring	- State services - BOs (agency) - Others	- BOs (Hydr. Conf.) - Aut. communities	- Federal - BOs agency - State + Municip.	- NCW - State	- BOs (Hydr. Basin Agency) - Others

## Role of a river basin committees/councils

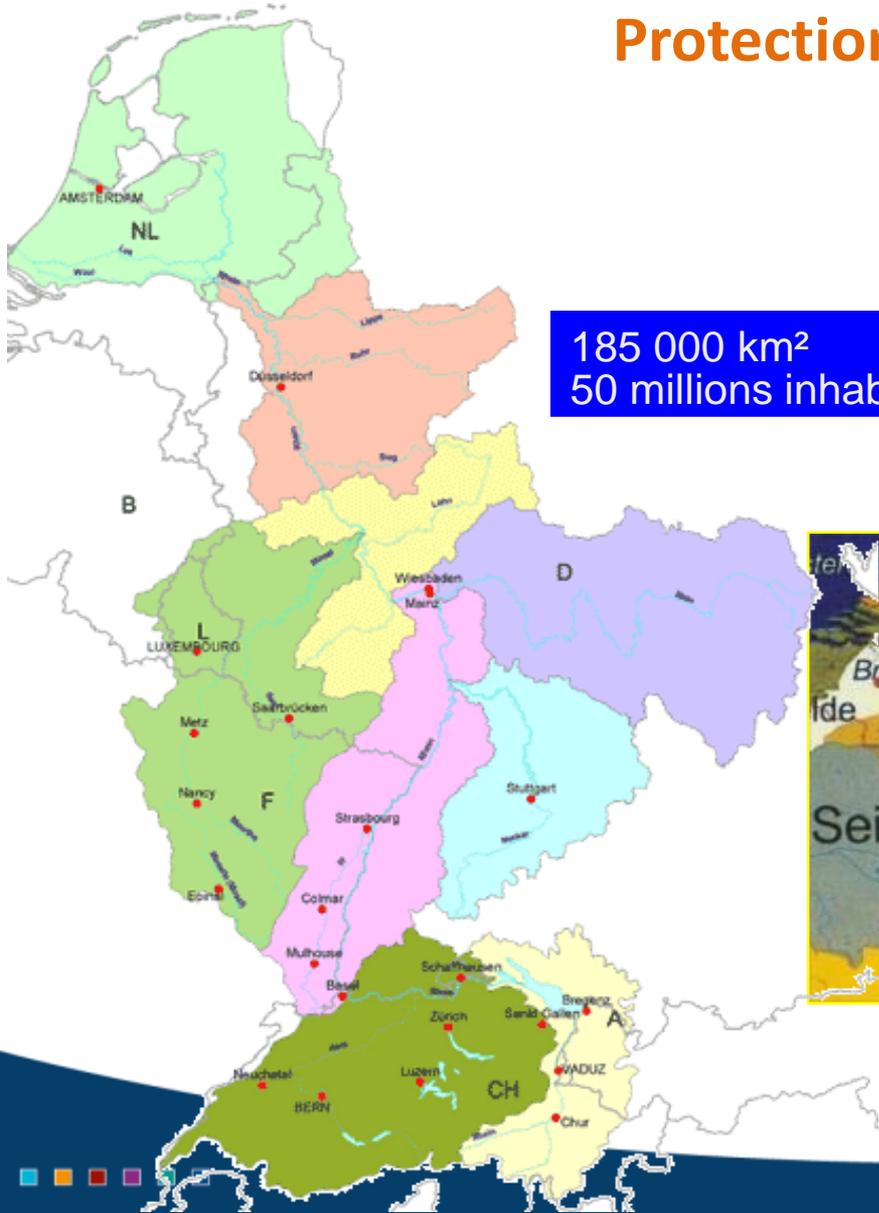


## COMPOSITION OF BASIN COMMITTEES IN FRANCE

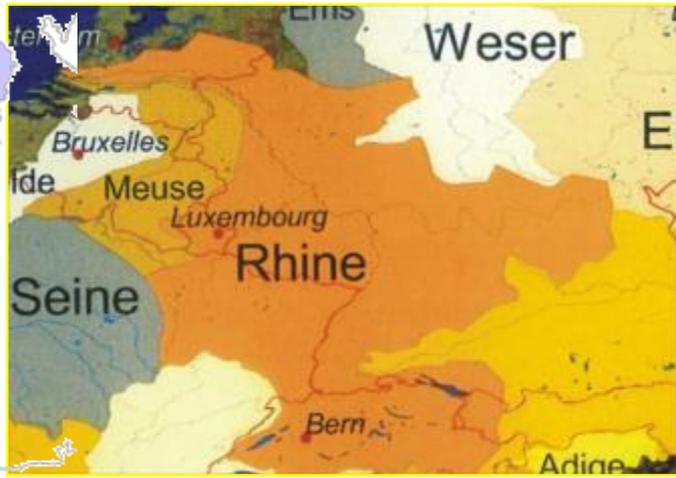


- Participation of stakeholder in decision-making
- Definition of long term objectives and production of RBMP
- Selection of development and equipment priorities
- Joint implementation of programmes of measures
- Setting up of Financing principles and calculation of the water taxes

# International Commission for the Protection of the Rhine



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

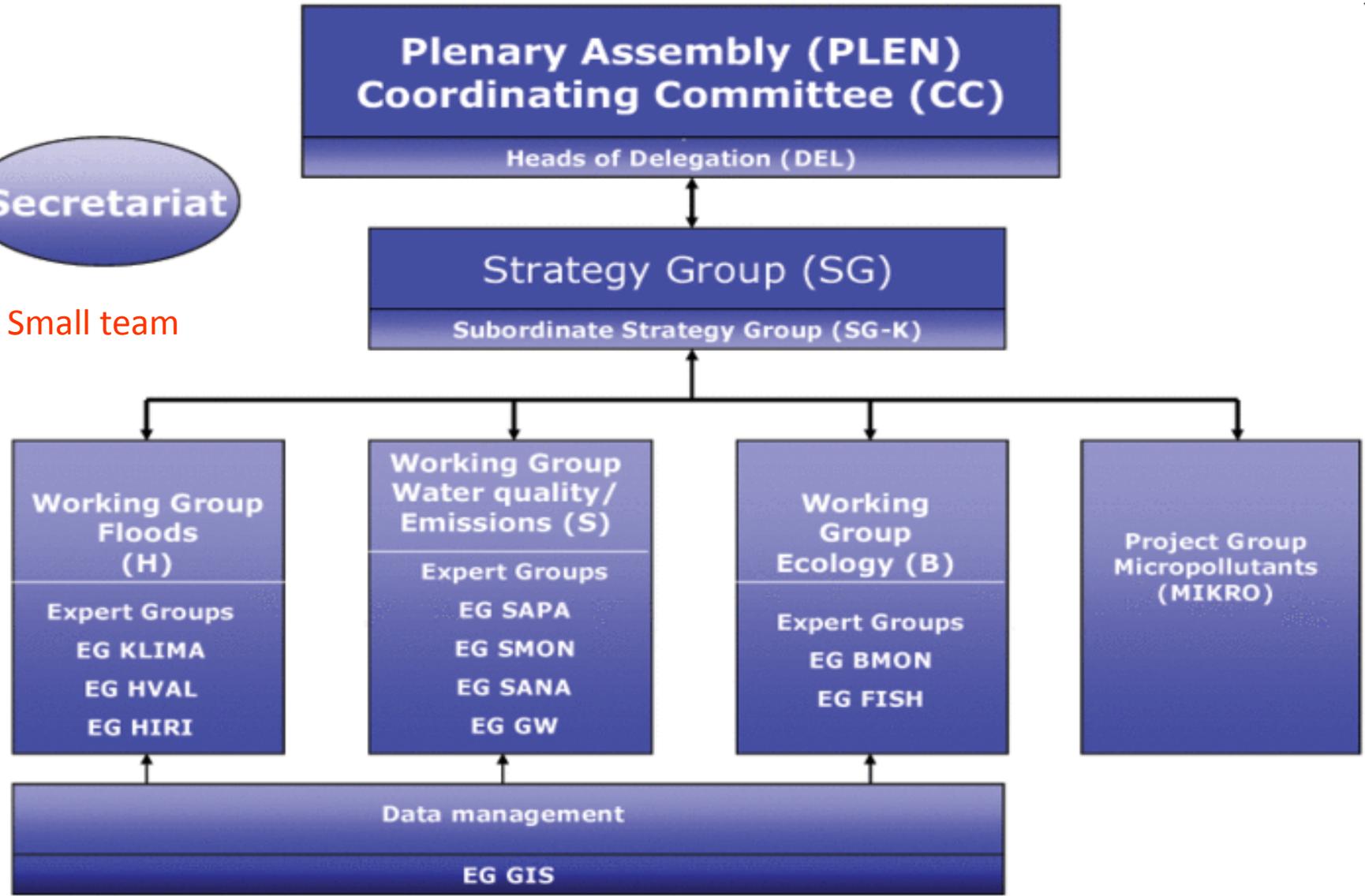


- 9 States
- Austria
- Belgium
- France
- Germany
- Italy
- Liechtenstein
- Luxemburg
- Switzerland
- The Netherlands

# International Commission for the Protection of the Rhine

**Secretariat**

Small team



# Mekong River Commission (MRC)

- 1957, Mekong Committee (UN)
- Agreement 1995 / mandate to MRC
- Members: Laos, Vietnam, Cambodia Thailand
- China and Myanmar: partners



## Solution to the most common challenges: financing

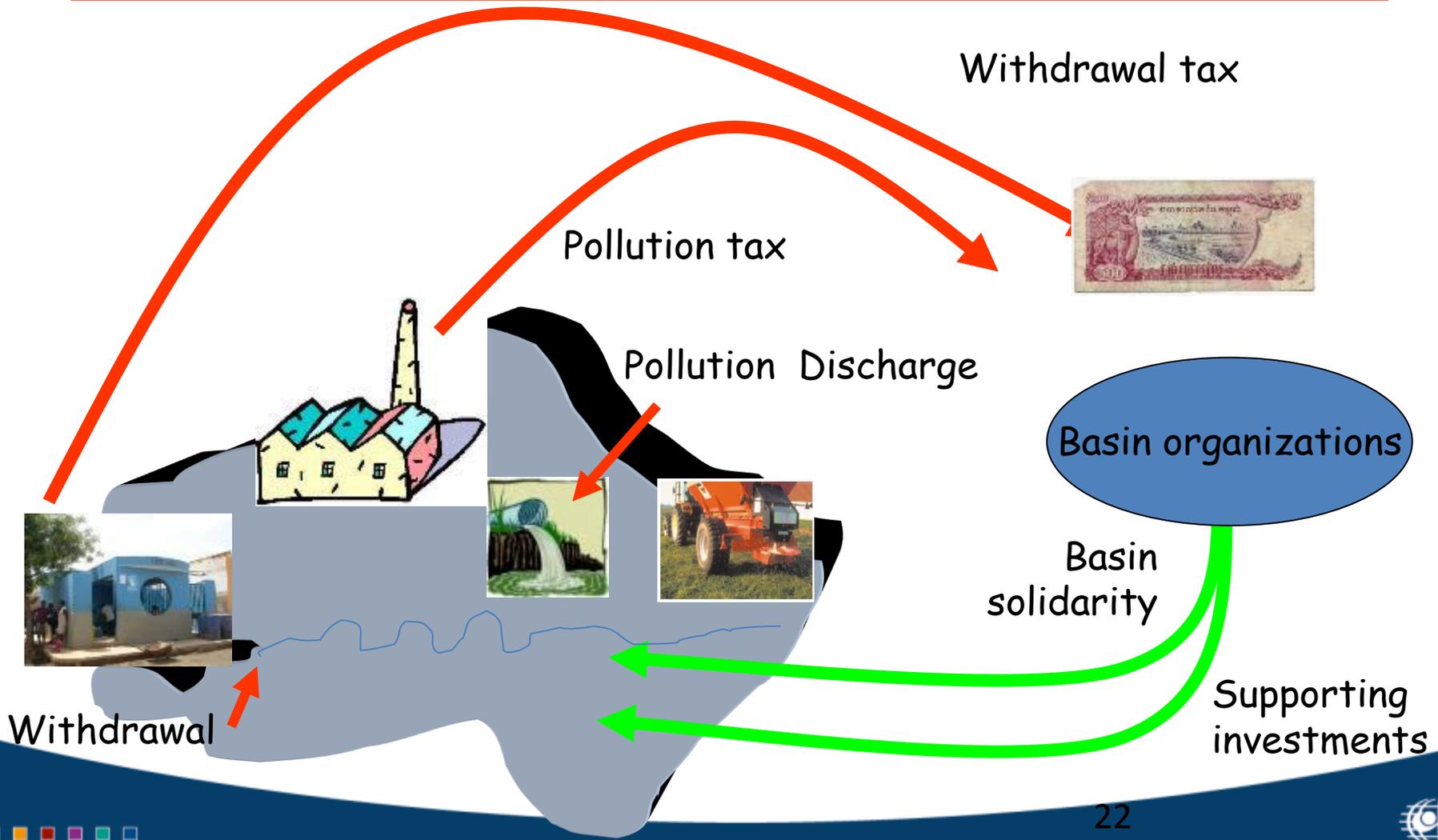
Sustainable financing system at basin level:

- ❖ Ensuring financial autonomy of BOs,
- ❖ Applying key principles of sound financing such as “water pays water”, user-pays & polluter-pays principles

- Contribution from Member States
  - Mekong, IJC, Niger, Volta, ...
- Community Integration tax
  - Central Africa (CEMAC Tax 1% on Import)
- Benefits from infrastructure operating
  - OMVS case

# Solution to the most common challenges: financing

The system of “redevances” (tax) in France



## Balance of the funding efforts proportional to the balance of benefits granted

### The outstanding model of OMVS (Senegal river basin):

Allocating benefits from the water uses instead of allocating water volumes.

Riparian States	Funding efforts	Benefits
Mali	35,3%	52% Hydropower prod. Access to sea through navigation
Mauritania	22,6%	15% Hydropower prod. 33% irrigable land
Senegal	42,1%	33% Hydropower prod. 64% irrigable land

## Solution to the most common challenges: knowledge

Challenges include:

- High number of data producers & little exchanges between them,
- Heterogeneity of the data Contribution from Member States,
- Incomplete data: missing areas, parameters, resources (groundwater),
- Little or no regular update,
- Little or no adaptation to the need of water managers.

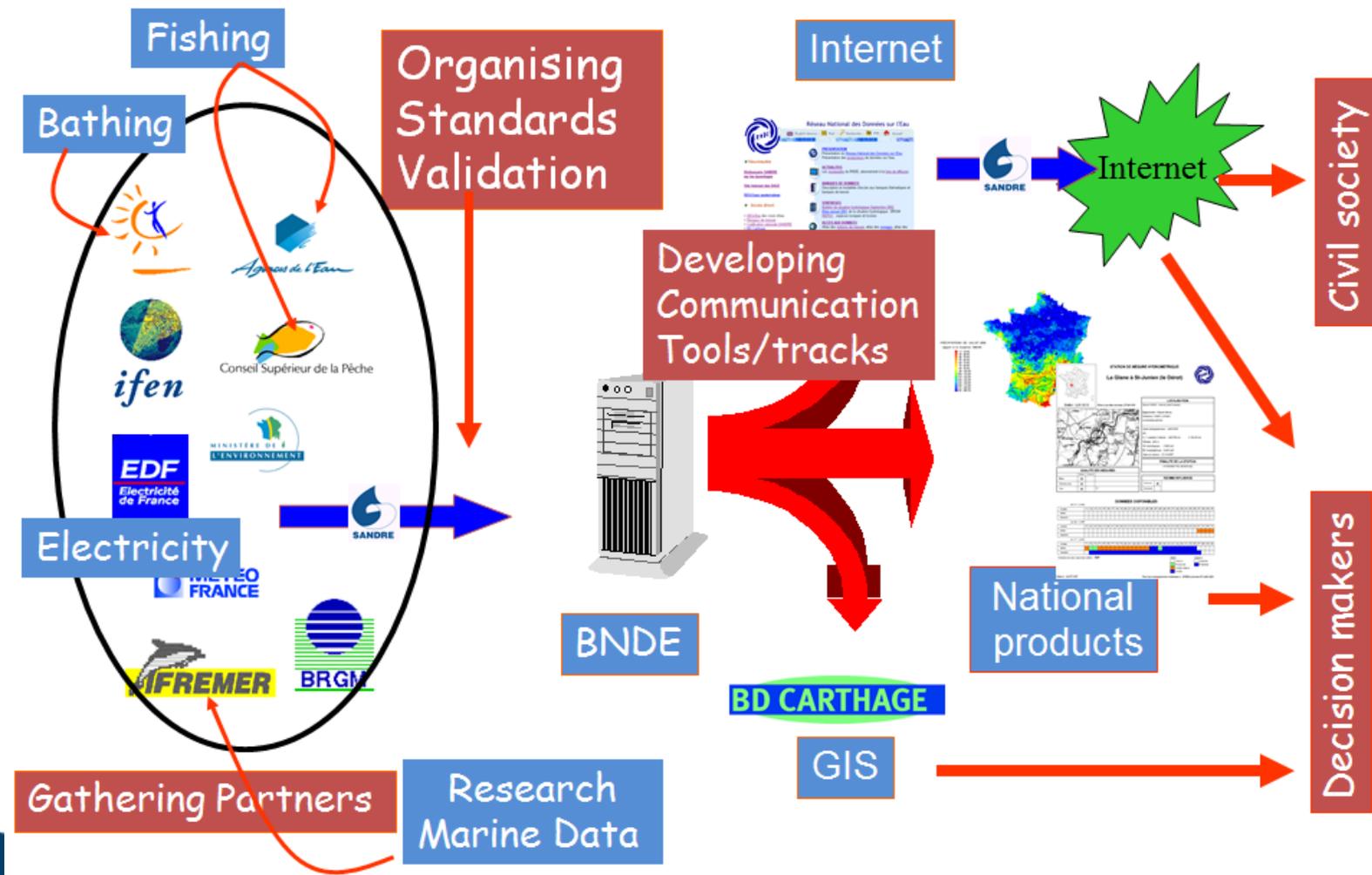
There is a necessity to develop knowledge, data & information for an efficient water management at basin level:

- ❖ You can't manage what you don't know,
- ❖ You can't manage what you can't measure.

# Solution to the most common challenges: knowledge

Solutions lie in the development of:

- Monitoring networks
- Water Information System



## Solution to the most common challenges: basin management plans

Challenges include:

- Lack of anticipation on medium/long term changes,
- Lack of links between plan and program of measures/investments,
- Lack of assessment of the progress made by each plans,
- Lack of continuity between plans.

Base line  
• water, uses  
• land  
• activities

Trends (demography,  
development, climate change,  
etc.)

Different  
Scenarios

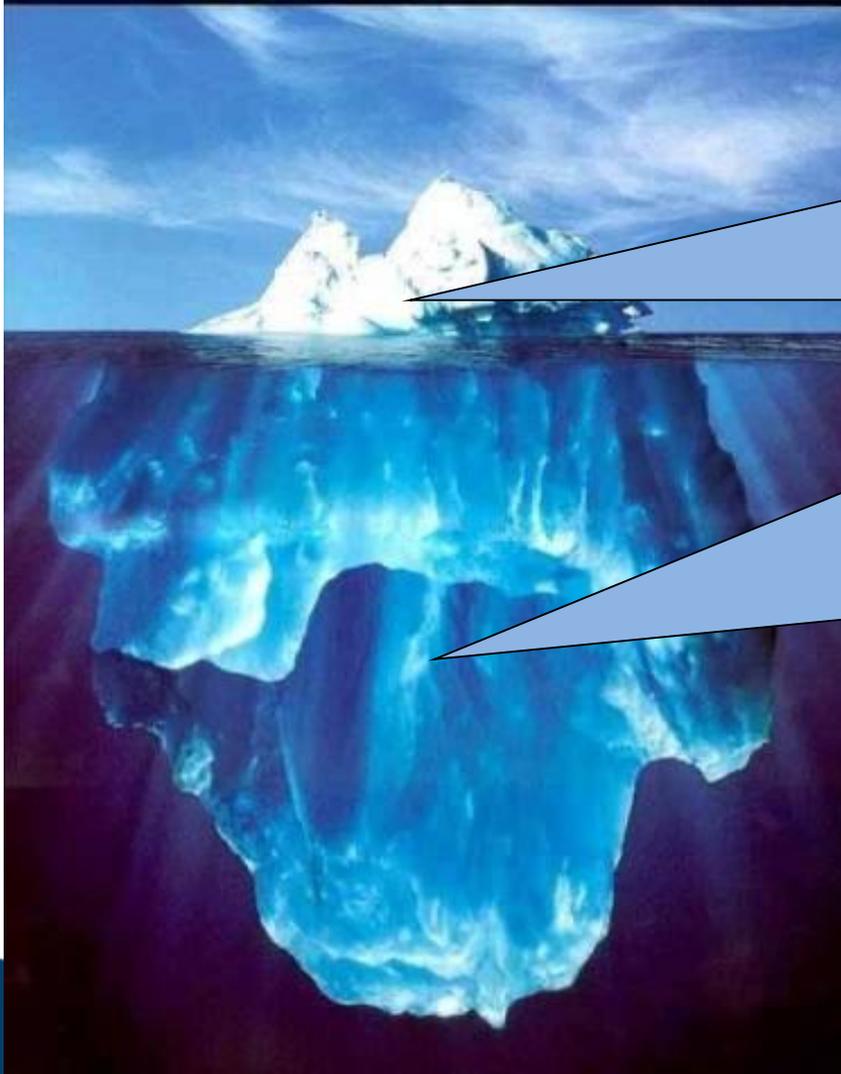
Actions planned on  
• Institutions (bodies, legislation)  
• Investments  
• Capacities  
• Research

# Solution to the most common challenges: basin management plans

There is a necessity to develop a cyclic approach in the development and implementation of river basin management plans.



# Transversal solution to improve basin management: Capacity building of basin organizations and training of their staff



## HARD

Programme of activities, reforms,  
schedule, costs,  
Responsibilities, inputs,  
assumptions, risks,  
Indicators ...

## SOFT

Methods of management  
Tools & instruments,  
Planning, forecasting ...  
Develop participation, sharing  
bottom up, transparency  
Inter-sectoral approach  
Economic aspects

## Transversal solution to improve basin management: Capacity building of basin organizations and training of their staff

There is a necessity to establish and develop water training centers to strengthen the capacities of basin organizations and their staff. Example: “Centre of Excellence (CoE) for Water Resources and River Rejuvenation” in Uttar Pradesh.

The reference -> the French National Water Training Center (CNFME):

- 6 000 trainees, 550 training sessions, 22 000 trainees days per year,
- Technical assistance for the creation and development of water training centers.

### Training sessions themes:

1. Water resource management
2. Chemistry and water analysis
3. Drilling
4. Drinkable and process waters production
5. Water supply network
6. Wastewater network
8. Rainy water management
9. Urban and industrial waste waters treatment
8. Pumping station
9. Maintenance
10. Electricity, automatism, remote control
11. Instrumentation
12. Hydrology and rivers
13. Legislation
14. Administrative, organizational and financial water services management
15. Industrial and urban solid wastes management

## Conclusion

Key recommendations for well functioning basin organizations:

- Clear & well-defined mandate,
- Legal, political, and administrative power,
- Financial autonomy and sustainable financing mechanisms,
- Clear level of decision-making authority,
- Mechanisms for resolving conflicting interests between levels,
- Adequate staffing and capacities,
- Data availability, access,
- Strong, broad-based political and stakeholder support.



Thanks for your attention!  
ध्यान देने के लिए आपको धन्यवाद!



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