

Danube Basin and Eastern Europe

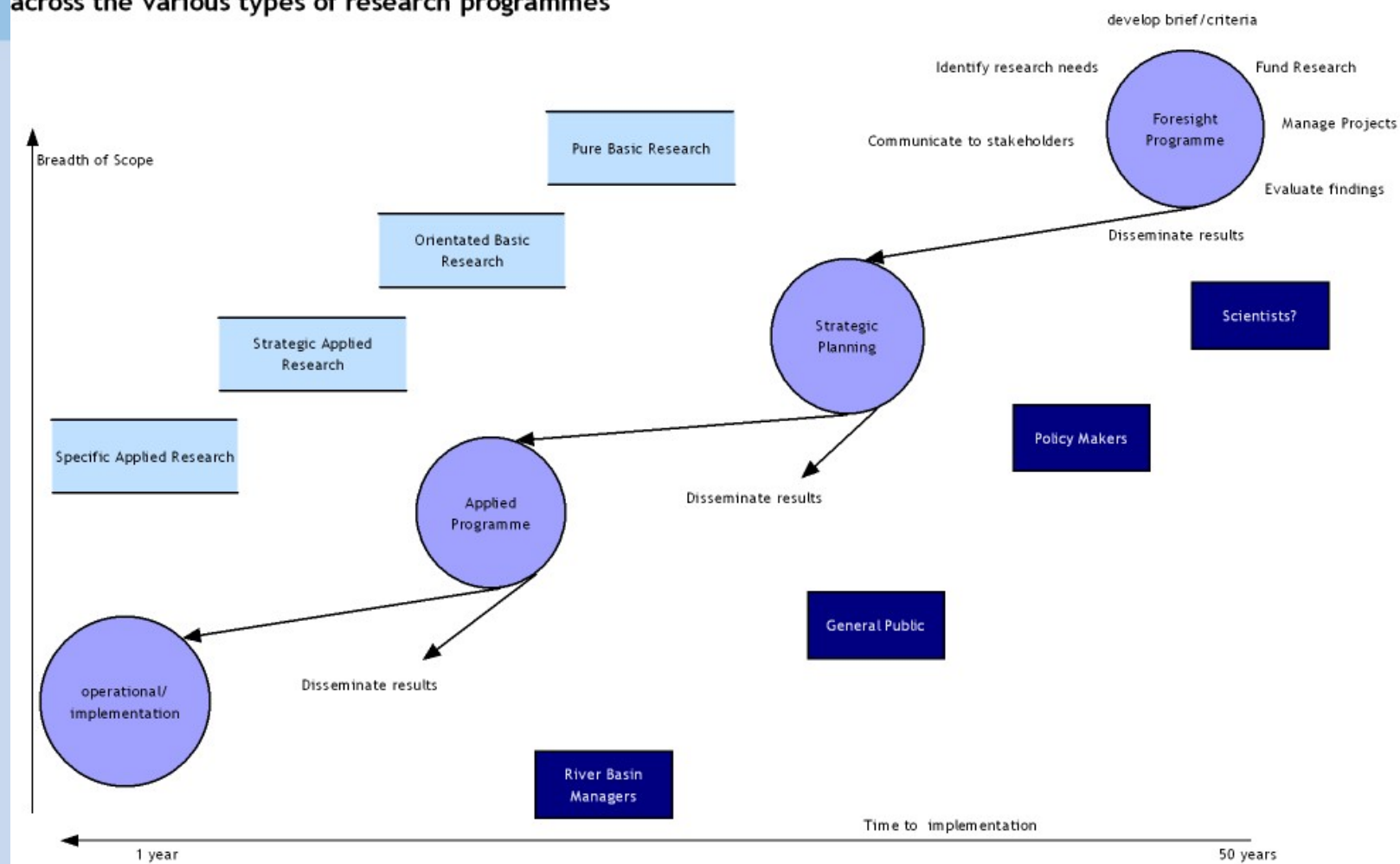
Work Package 2: Objective:

To conduct joint activities based upon the identification of common needs between partner research programme managers in focused areas related to research required for the implementation of the Water Framework Directive

Task 2.1

- Analysis of short & medium term research needs
 - Short-term can mean different things to different people.

Knowledge and research management across the various types of research programmes



Methods

– Series of Workshops,

- Valencia (Mediterranean & Southern Europe),
- *Sibiu*
- Stockholm (Northern, Scandinavian & Baltic)
- Brussels (Northwest Europe)

– Website -

- www.IWRM-net.eu
- <http://km.iwrM-net.eu/login.php>

IWRM-Net research priorities
Knowledge requirements for Integrated Water Resource
Management across Europe

DRAFT

ERAC-CT-2005-0260025 - IWRM-NET
Towards a European-wide exchange Network for integrating research efforts on Integrated Water Resources Management



Research needs report

TOPIC	No of votes
Droughts, Floods and Ephemeral Streams	12
Improving efficiency of use and re-use of water and waste-water	9
Transferring knowledge of water management practices	8
Integrating data collection and management	8
Developing societal perception of water resource management and providing tools for managers	7
Land cover change and water management issues	4

Valencia questions - examples

- Can we have a definition of GES that is a pragmatic and operational compromise?
- Drought Indicators: Improve and extend indicators to Mediterranean countries and then to rest of Europe
- Climate change:
 - Improvement of models to be able to help water managers to understand and predict how a water body will react to climate changes, in particular at regional or river basin scale.
 - How will the changing land-cover (in particular forestry) impact on the water quality and quantity

Knowledge Classification

- Knowledge on Ecological Processes
- Knowledge on Physical processes
- Impact Assessment
- Measures Assessment
- Social and Political
- Economy
- Monitoring and Surveillance
- Data Management
- Water Resources and Demand Management
- Groundwater Management
- Policy Assessment
- Prospective Scenarios/Foresight
- Communication and Participative Management

Detailed list of needs

(V). POTENTIAL IWRM-NET ISSUES

		Countries / partners interested & timescale		Number of projects and programmes
1.	KNOWLEDGE ON ECOLOGICAL PROCESSES		KMT search	
	Research to improve our understanding of how aquatic ecosystem works - A baseline survey of what do we know now about Good Ecological Status, including potential?		Ecology	4 programmes 3 projects
1.1	What do we need to know to better manage and achieve good ecological status <ul style="list-style-type: none"> • Can we have a definition of GES that is a pragmatic and operational compromise • applied research programme to determine good ecological status • what affects achieving good ecological status (obstacles) 	Valencia WS support	Ecological Status	89 programmes 8 projects
1.2	Can we improve our <i>integrated</i> understanding of ecological status and get a Better understanding and knowledge of the processes by which we define good ecological status? <ul style="list-style-type: none"> • What are the drivers behind the concept of GES as a process of dynamic interactions i.e. is good ecological status a definition of environmental science, social science or political science? • Develop methodologies that identify good status that combine methods and understanding from natural, social and political science. • How can we improve the incorporation of public worth and social values into the definition of ecological status 			

Yesterday

- IWRM-net partners and invited guests
 - Policy Makers
 - Water Managers
 - Scientists
- Informal workshop to identify research needs

The research needs...

Definition of good ecological status

- How does the Biological, chemical-physical and hydro-morphology interact to define good ecological status;

Hydro-morphology

- How will climate change affect hydrology (high/low flow amplitude, frequency, seasonal/annual variability)?
- How will rising sea levels, altered flow regimes and sediment transport affect coastal areas (deposition or erosion, management) and ecosystems (changing salinity)
- Links between sediments in the Danube river and coastal erosion;

ERRATIC STREAMS

- the storage capacity, managing seasonal change and aquifer recharge
- Ecological status for temporary streams

Hydropower

- How do size and character of reservoirs effect water quality (e.g. temperature, oxygen saturation), sediment transport (e.g. reservoir flushing) and aquatic organisms?
- How can impacts of residual flows be assessed, how do they affect river restoration programmes?
- How can impacts of hydro-peaking (quick fluctuating flow levels) be assessed, how do they affect river restoration programmes?
- How can transboundary management issues be solved (e.g. residual flow, hydro-peaking)?
- How does river bed degradation affect the management (e.g. restoration) of hydro-morphological issues (e.g. floodplain connectivity)?
- What solutions can be applied for up- and downstream migration of fish, especially at large obstacles (e.g. sturgeon passage at the Iron Gate)?

The research needs continued

Management of River basin/flood plain

- How can priorities be defined in river basin / flood management (e.g. priority habitats, priority economic drivers)?
- How can impacts on ecosystems from economical drivers (e.g. improved navigation routes) be avoided or limited?
- What are the benefits of re-establishing functional aquatic ecosystems, how can they be evaluated financially (e.g. tourism and nature benefits for communities)?

HMWB

- What are the impacts of HMWB on GEP?
- What are the links between social benefits and ecological improvements?
- How do you undertake a catchment-based approach for HMWB (e.g. transboundary issues)?
- How can be the decision-making on HMWB or not be supported (e.g. designation process)?

Reference CONDITIONS

- How can you develop reference conditions that can adapt to new pollutants and invasive species, that also take into account lack of historical data

More research needs...

Integrated Pollution Management

- Development of scenarios and models to understand the effectiveness of programmes of measures.
- Link the above to financial impacts and socio-economic indicators and investment programmes for Waste water treatment
- Methodologies for cost benefit analysis – for nutrient pollution from agricultural sources

GUIDELINES for managing NUTRIENT POLLUTON & Eutrophication

- Make them specific to typology e.g upper and lower reaches of a river
- Scientific research for linkage, impact between environmental objectives for pollution for Danube River and for Black Sea.
- Specifically for Lakes and coastal waters we need to improve our ability to specifying the cause
- Develop new technologies and techniques for dealing with eutrophication

Aquifers recharge and aquifer discharge

- Develop a tool for identification, tool for pollution migration (dispersion);
- Relating to the drinking water directive, how can members states achieve the European standards if well below natural contamination levels

Its finally over.

Improve our groundwater management capabilities

- Improve Modeling and planning methods
- Develop methods for estimating background pollutant content
- Creation of an integrative database for unsaturated and saturated soil zone (cover soil) including pF (retention), porosity, structure
- Improve our knowledge of the movement of pollutants through soil and groundwater
- Assessing the effectiveness of measures to reduce pollution
- How do you stimulate chemical/physical changes to reduce pollution
- Developing new management strategies to deal with the above issues

ARSENIC removal from groundwater

- Relates to DWD, Research needed on techniques, how much money can you afford to spend on removal?

HAZARDOUS pollutants

- Improve our modeling of hazardous substances in time and space, integrating both surface and groundwater

KNOWLEDGE TRANSFER

- Not a specific research need but something recognised as important within the network

16/10/2008

Stephen Midgley

Over to you...

- 3 votes
- You have the list in the delegate packs
- Over the course of the INBO meeting please read, comment and vote on your preferred options.
- Return to IWRM-Net.