DEVELOPMENT OF SCIENTIFIC SPECIFICATION FOR IWRM-NET 2ND JOINT CALL

Sibiu Workshop October 08 – Preparation document

1. Introduction to IWRM-net

1.1 Integrated Water Resource Management is a widely used term across the globe. It has a variety of meanings that can be taken from it, but to provide its most general description it should be considered alongside sustainable development principles. One of the first international documents that promoted the term on a global scale was the Agenda 21 document from Rio in 1992. Chapter 18 on Freshwater used the term to describe how water should be managed in a sustainable manner. From this description there has spawned many different interpretations of IWRM based upon the criteria that the particular group focuses on. This is entirely valid due to the fact that IWRM covers such a wide range of complex and inter-related issues.

1.2 Within the context of Europe, the Directive of the European Parliament and Council of 23 Oct 2000 establishing a framework for community action in the field of water policy (WFD) put in place the mechanisms by which member states should achieve integrated water resource management. WFD implementation requirements dominate the research agenda across Europe as the first river basin plans are due in 2009, yet it can be argued that the strict interpretation of the Directive does not take into account all aspects of IWRM. It is the intention of IWRM-Net to maintain a broad interpretation of IWRM over the course of the project.

1.3 IWRM-Net consists of 14 Member States and 17 partner organisations, plus 14 observers from 7 additional countries. They have agreed on a shared Vision of what should be ***IWRM.Net*** by 2010:

- THE source for knowledge about IWRM-research being undertaken in Europe at Member-States level, with a focus on the WFD
- A forum for future perspectives and co-ordination of research needs and programmes on related issues in different countries, including accession states and EU neighbours
- The link between research and water policy makers and managers to bridge the communication gap
- A facilitator for bringing together researchers and funders from different countries to work on joint research programmes
- A forum for exchanging best practices on administrating research programmes across Europe

2. Background to the research needs

2.1 As mentioned in the previous paragraph, the WFD sets out the requirements for implementing water management within the European Union. The principles of the WFD are based within sustainable development and its aims are that the Directive;

- prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;
- promotes sustainable water use based on a long-term protection of available water resources;
- aims at enhanced protection and improvement of the aquatic environment, inter alia, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;
- ensures the progressive reduction of pollution of groundwater and prevents its further pollution, and
- contributes to mitigating the effects of floods and droughts

2.2 The priority requirements of many member states is to gather the data and information together to develop the knowledge required to implement the above articles. This process has been going on for a while and the first river basin plans (article 13) are due in 2009, which will set out the programme of measures (article 11) required to achieve good ecological status by 2015.

2.3 The International Commission for the Protection of the Danube has listed four significant water management issues in the Danube Basin District for surface waters: pollution by (1) organic substances, (2) nutrients and (3) hazardous substances, and alterations to (4) hydro-morphology (i.e. the structural characteristics of the shape, boundaries and content of rivers, lakes, transitional and coastal waters); and two trans-boundary groundwater issues including alterations to (1) quality and (2) quantity.

Surface water: Organic pollution - In the EU Member States, phase out, by 2015 at the latest, all discharges of untreated wastewater from towns with populations over 10,000 inhabitants and from all major agro-industrial facilities as well as increase of the efficiency and level of treatment thereafter; in other Danube States the number of wastewater collecting systems linked to treatment plants and operational by 2015 will be specified. Improvement of Wastewater Treatment Plants; implementation of the Sewage Sludge and IPPC Directive.

Surface water: Nutrient pollution - Reduce nutrient discharges (nitrogen; phosphorus) within the Danube River Basin District and to the Black Sea coastal areas, both from wastewater treatment plants as well as from diffuse sources (implement the EU Nitrates Directive in EU Member States); reduce phosphates in detergent products or encourage the use of free of phosphates detergents;.

Surface water: Hazardous pollution - Implement "Best Available Techniques and Environmental Practices" (BAT/BEP) including the further improvement of treatment efficiency and improve the implementation of the Integrated Pollution Prevention Control Directive

Surface water: Hydromorphological alterations - Construct fish migration aids; re-connect adjacent floodplains and wetlands; and conduct necessary Environmental Impact Assessments and/or a Strategic Environmental Assessment during the planning phase of future infrastructure projects.

Groundwater: Alterations to quality - Increase wastewater treatment efficiency; and implement the EU Groundwater Directive and the EU Nitrates Directive in the EU Member States.

Groundwater: Alterations to quantity - Avoid the over-abstraction of groundwater bodies

3. Current / completed Research Programmes from the Knowledge Management Tool:

RO - ORIZONT 2000 This programme has been developed during 1998-2000 and 2000-2002. This programme is currently finished	IT system for the Romanian wetlands & GIS applications for the management of Danube Delta Biosphere Reserve (DDBR); Assessment of the Danube River pollution effects on the Danube Delta Biosphere Reserve's (DDBR) ecosystems; Identification, validation and assessment of the environmental factors in order to define the ecosystem trends of evolution; Sustainable management of DDBR natural resources; Protection and recovery measures for sturgeon population from the Lower Danube; Assessment of the nutrient content within the Danube Delta; Protection and recovery measures for the migratory marine sturgeon populations in the Danube River; Biodiversity and wildlife protection and conservation measures, based on monitoring and evaluation; Identification, selection and assessment of the ecological factors having impact on the DDBR habitats status; Sustainable use of fish resources and natural resources (grasslands, reed, forests, medicinal herbs); Reducing of human impact on natural ecosystem; Restoration of DDBR polders; Hydrological modelling of the Danube Delta as part of the Geographical Informational System (GIS).
RO - DELTA - INCDD - Danube Delta core research (Danube Delta nucleus research programme)	Guidelines for good economic practices with low anthropogenic pressures - Characterization of biotic and non biotic components of aquatic ecosystems - Measures to protect species and habitats designated under Directives 92/43/EEC and 79/409/EEC - Technical measures/solutions to restore wetlands formerly reclaimed for agriculture - Knowledge on biology of economically significant aquatic species - GIS applications for data management and decision support
RO - SEDAN - Modelling of erosion, transport and sedimentation	1. Danubian Computer Model (for erosion, transport and sedimentation processes, aiming to perform: - warning procedures - forecast procedures (short, medium, long term)

processes in the Danube river and its tributaries *(a working group within ICPDR; sediment transport for the Danube river)*	- simulation procedures (low, medium, high flow) - simulation procedures (hydrological crises and accidents) 2.Danubian Information System for sedimentation and morphological status of Danube River and tributaries, with a dedicated Web-sites for public information and dissemination of warnings, forecasts, results and data 3. Danubian Database (river sediment and morphology) 4. Technical reports and scientific papers 5. Workshops and meeting
RO - CEMAR - INCDM Constanta - Marine ecosystem conservation and promotion of its sustainable utilization	Objective 1 - Sound knowledge of interactions at the level of abiotic components of the marine ecosystem (6 projects) Objective 2 - Characterization of ecological state of marine / paramarine populations under anthropic impact and assessment of evolution trends (4 projects) Objective 3 - Assessment of state of marine exploitable bio-resources with respect to their protection and sustainable management (2 projects) Objective 4 - Achievement of information system for the sustainable management of the coastal zone (1 project)
DE FONA Subprogram – Global Change and the Hydrological Cycle	The aim of GLOWA is to develop simulation-tools and instruments which will develop and realize strategies for sustainable and future-oriented water management at regional level (river basins of approx. 100.000 km²), while taking into account global environmental changes and socioeconomic framework conditions. Five large cluster projects have been started. Two of them are located in Germany (Danube, Elbe), the others are investigating river catchment areas in North and West Africa (Drâa, Ouémé, Volta) as well as in the Middle East (Jordan). Each of these projects is tackling the following scientific core themes in an interdisciplinary and integrative research approach: o Climate change, variability of precipitation, variations caused by human activities and their effect on the hydrological cycle o Interactions between biosphere/ land use and the hydrological cycle o Water availability and conflicting water uses
RO –Estrom (Environmental Science and Technology in Romania	Swiss Romanian Research Programme on Environmental Science & Technology. The programme ESTROM was launched in March 2004 jointly by the Swiss National Science Foundation (SNSF), the Swiss Agency for Development and Cooperation (SDC) and the Romanian Ministry for Education and Research. - Environmental Research and Mitigation of Water Pollution in Romania and in the Lower Danube Region.
AT - PFEIL10	Programme for research and developement in the Ministry of Agriculture, Forestry, Environment and Water Management, BMFLUW, 2006-2010

4. Possible Research Themes:

4.1 The possible research themes are to be elucidated at the Sibiu workshop on the 1st October. The IWRM-net session on the 2nd October will introduce the project and ask for validation of the research needs from the previous day. These validated and prioritised needs will then be presented to the IWRM-Net General Assembly in December to be included in discussions on the needs for the second call for research from IWRM-Net partners.

5. Criteria of the call

5.1 IWRM-net invites delegates to consider what type of research they are interested in funding are they interested in long-term research or applied research to deliver policy changes or improved water management techniques. This information will set the framework for the management of the research funded by IWRM. Final decisions on the details of the call to be made by the funding organisations in June 2009.