

## The Water Framework Directive: opportunities and barriers to sustainable development

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Water, as a natural resource, embodies many of the difficulties encountered in sustainable resource management. Water is a truly vital element of life but, like many other environmental assets, it cannot withstand the ever-growing anthropogenic pressure. Stewardship of this essential resource spans across disciplines, interests, attitudes and principles. Sustainable management strategies demand a challenging level of collaboration among stakeholders which goes far beyond conventional polycentric administrative boundaries. The European Union launched the Water Framework Directive (WFD) in 2000 to endorse sustainable water resource management at a European level. The Directive consolidated previously fragmented water policies, primarily aimed at drinking water and wastewater governance, into a single legislative framework across all Member States. Biological quality, introduced by the WFD, was a fresh thematic in water policy. Public participation and trans-disciplinary collaboration became essential elements of the legislation, embracing the second Dublin Principle in its entirety. Adoption of Integrated Water Resource Management (IWRM) instruments by the WFD marks the departure from a traditional command and control approach in favour of polycentric administration and trans-disciplinary management. This progressive piece of environmental policy is clearly committed to the integration of sustainable development into water governance. However, what are the sustainable development opportunities offered by the WFD?

While trans-disciplinary collaboration and public participation are fundamental elements of the policy, their integration calls for mechanisms of social learning, instrumental in the success of IWRM. The heuristic model of social learning actively promotes, through participatory problem-solving processes, the impartial analysis of other actors' observations in an iterative process of cultivation of one's professional faculties. Through this process, trans-disciplinary cooperation should theoretically lead to best water management solutions voicing all the stakeholders involved.

The launch of the WFD stimulated projects focusing specifically on the importance of social learning in the implementation of IWRM techniques, particularly where numerous actors are involved. The SLIM project, funded by the EU FP5, ran between 2001 and 2004. With approximately 30 researchers, the initiative focused on social learning as a principal mechanism for sustainable resource management. The HarmoniCOP project, supported by the EU FP5, ran between 2002 and 2005 and focused on the facilitation of public participation processes in the planning of RBM for the implementation of the WFD.

The IWRM-Net was yet another project with a similar mandate. Its scope was to establish an international network aimed to assist in the implementation of IWRM, particularly within the WFD context. The fora strictly adhered to the canon of social learning, encouraging information

sharing, cross-participation and joint research activities at national and international levels. Supported by ERA-NET under the EU FP6, IWRM-Net began in 2005 and, in 2010, evolved into the IWRM-Net Scientific Collaboration Project which provides support for numerous other programmes, for instance Esawadi, a trans-boundary collaboration working toward harmonisation in the implementation of the WFD.

While the Water Framework Directive introduced innovative integrated management approaches to water governance and novel ecological classifications for its quality, its implementation proved more difficult than originally envisaged. The now thirteen year old Directive has provided significant ground for scrutiny; for instance, to date, approximately three hundred variations in methodology of biological assessment have been recorded across member states. Historical monitoring of biological parameters predating the Water Framework Directive differs significantly across Member States. This variety can lead to significantly different levels of expertise across diverse aquatic habitats, a further source of inconsistency in assessment. Social learning trans-boundaries initiatives can provide effective platforms to share expertise in the pursuit of harmonisation of assessment. This paper focuses on the barriers incurred and benefits gained from the adoption of Integrated Water Resource Management methods by the Water Framework Directive with specific emphasis on how the process of social learning assisted the implementation of this pioneering legislation.