

Linking WFD river basin management planning and climate change challenges

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Abstract

For the 2nd and 3rd river basin management cycles (2015-2027) of the Water Framework Directive (WFD), EU Member States have to fully integrate climate change into the process of river basin management planning. The challenge of WFD planning within the climate change context is two-fold, both adaptation to climate change impacts and mitigation of climate change through possible adverse effects of WFD implementation measures on greenhouse gas (GHG) emissions. Complying with the main WFD objective of achieving 'good status' in all water bodies requires programmes of measures (PoMs) to control nutrient loading to surface waters from point and diffuse sources. A case study of the Isefjord and Roskilde Fjord River Basin in Denmark is used to investigate practical approaches and measures to support the incorporation of climate change adaptation and mitigation in river basin management planning; including the use of a GIS-based decision support system (DSS) to assess the effectiveness and cost-effectiveness of alternative PoMs. There appears to be a large potential, especially within agriculture, for synergies between reduction of nutrient losses and climate change mitigation, among these measures related to manure technology, land use change and energy crops. In order to reach the full potential of this kind of win-win solutions in a WFD perspective a targeted and differentiated approach to the development of action programmes is believed to be necessary.

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