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Integrated Water Management in Austria - The River Development and Risk Management Concept

Clemens Neuhold¹

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Introduction

The severe flood event along the Danube River and its tributaries in Europe 2002 initiated substantial revisions in flood protection and flood management in Austria. One of the most important lesson learnt was the need for an integrated risk management approach comprising a broad bundle of structural and non-structural measures. The flood in 2002 clearly outlined that this problem has to be dealt with on catchment scale. Therefore, a flood risk management approach has been since then developed on national and EU level.

Integrated flood risk management is nowadays implemented in accordance with the EU Floods Directive (FD). In close cooperation with sectors like spatial planning, building regulation and emergency management measures have been developed to reduce or even avoid flood risk. Integrated flood risk management also needs close coordination with the goal achievement in accordance with the EU Water Framework Directive (WFD). The main challenge is to coordinate between the objectives of both directives (FD and WFD) which might be significantly different or even contradictory. The process of cross sectoral coordination on national level in Austria is working well, as for both directives the competent authority is the same federal ministry. Major challenges arise when it comes to the implementation of distinct local measures. Especially flood protection measures have to be analysed on catchment scale to identify potential conflicts as well as synergies with other sectors and interests especially the goals referring to the WFD. In the frame of the hydraulic engineering assistant act it is, therefore, obligatory (prerequisite for funding) that this consideration has been done based on the river basin and risk management concept (GE-RM). This approach often leads to the identification of measures with multiple benefits e.g. natural water retention measures or nature-based solutions having the potential of improving flood protection, ecology, recreation, hydro-morphology, habitat availability, etc. in terms of achieving the objectives of the FD and the goals of the WFD at the same time.

¹ Dr., Administrator, Austrian Federal Ministry of Agriculture, Regions and Tourism, Stubenring 1, Vienna, Austria (clemens.neuhold@bmlrt.gv.at)

Integrated management approach

The eligibility check for funding of flood protection measures in Austria has to be conducted based on the planning tool called “River Development and Risk Management Concepts” (GE-RM). These concepts on catchment or sub-catchment scale serve to coordinate possible/potential measures. The concepts are coordinated with the objectives, measures and priorities of the National Flood Risk Management Plan (RMP) according to the FD as well as the goals of the National River Basin Management Plan (NGP) according to the WFD. Further, GE-RMs are closely coordinated with the legal frameworks of the nine Austrian federal provinces such as regional and spatial planning, building regulations, emergency management, nature conservation and other administrative authorities, potential users, stakeholders and those potentially affected in the catchment.

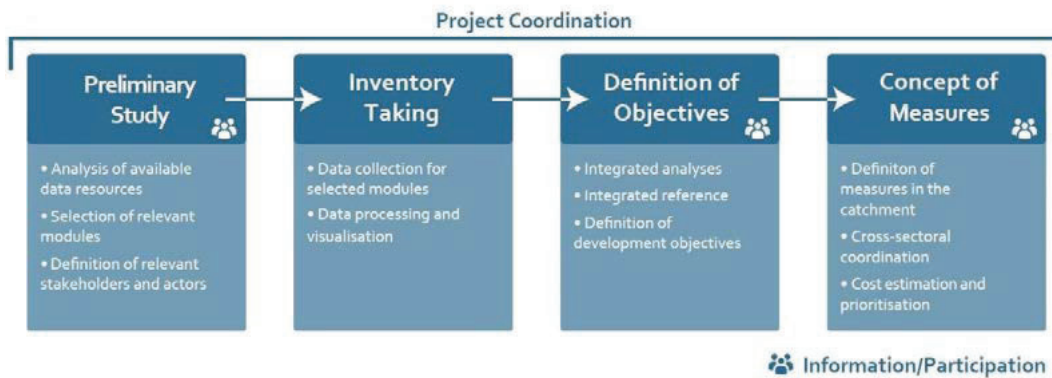


Figure 1. Project coordination including information and participation

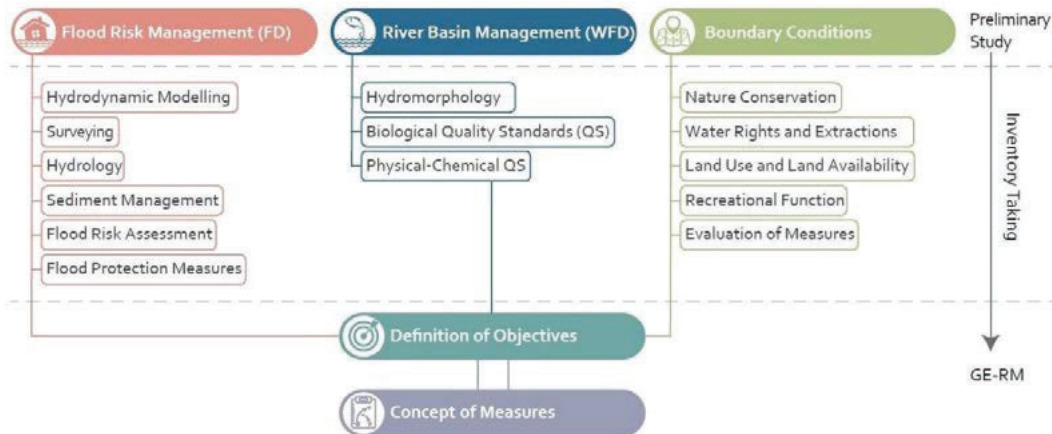


Figure 2. Moduls of the river development and risk management concept

The River Development and Risk Management Concept is usually established by authorities supported by consultancy and comprises the following steps:

- Preliminary study: in the interest of efficient planning, existing data is reviewed and tasks for the subsequent revision are specified

- Inventory taking: identifies need for action and supplies missing data necessary to determine deficits, objectives and measures
- Setting objectives: based on the inventory taking and cross linking to the goals of river basin management as well as the objectives of flood risk management potential deficits can be identified. By this approach an integrated reference is defined serving as a common target state to be reached.
- Based on a consistent catalogue of measures, the river development and risk management concept finally describes the intended measures in the planning area ranked by priorities.

A GE-RM is created primarily for water bodies and catchment areas with a need for action regarding flood risk management and river basin management. Apart from the flood hazard, the ecological status, land use, zoning, third party rights etc. are considered. On the basis of studies and inventory taking, interdisciplinary objectives and measures are defined. These form the base data and starting point for subsequent general projects and detailed planning.

As this tool has recently been set up from scratch it is now in a dynamic developing phase of revision and updates where needed. For this reason a LIFE Integrated Project (<https://life-iris.at/>) has been set up to support the cross-sectoral coordination based on rivers mainly spreading over at least two federal provinces in Austria, to also ensure administrative coordination based on (slightly) different legal frameworks related to spatial planning, building regulations and emergency management.

Conclusion

The integrated planning process in the frame of the River Development and Risk Management Concept aims at considering relevant sectors and technical fields to ensure the sound, coordinated and reliable implementation of the EU FD and WFD. It allows for a catchment-based planning, independent of administrative borders and, therefore, supports multi-level risk management. To increase awareness against flood risk, ecological state, and further relevant water management needs the preparation of the GE-RM includes obligatory stakeholder involvement and participatory processes. The overall goal is to avoid conflicts on catchment scale, at the same time aiming to identify integrative win-win and multi benefit solutions. However, still at the beginning of the definition of the planning tool framework there is dynamic room for enhancements and modulation to achieve a robust decision support accounting for the objectives of the EU FD and WFD at the same time.