

Integrated Water Management in River Basin Districts

Last year, the European Union agreed on a Water Framework Directive that outlines a general concept for stream protection in Europe. This directive creates the basis for unified policies on the integrated protection of streams and ground water. Each member state is required to revise its water management system.

The “Directive establishing a framework for Community action in the field of water policy” went into effect in December 2000.

This “Water Framework Directive” (WFD) coordinates and unifies the numerous directives and policies on stream and ground-

water protection that are currently in force in the member states of the European Union (EU). The main objective of the Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and ground water. Specific goals are to:

- prevent further deterioration of aquatic ecosystems,
- promote sustainable water use,
- protect and enhance the status of aquatic ecosystems,
- mitigate the effects of floods and droughts.

According to the WFD, the member states assign all streams to a particular river basin district and determine the appropriate competent authority. For each river basin district, the competent authorities will then survey the characteristics, investigate the environmental impact of human activities, analyze economic aspects of water use, and establish a register of protected areas. The result of this effort will be a program of measures and an integrated water management plan. All remedial actions should be realized at the latest in 2015.

The History of Water Management in the Netherlands

The Netherlands is situated on the river deltas of the Scheldt, Meuse, Rhine and Ems (Fig. 1). Two-thirds of the land area is a potential flood area, being threatened either by the sea or by rivers.

Water management in the Netherlands has a long-standing tradition going back to the 11th Century, when a few communities first came together to manage their water systems. The first official water boards were formed in the 13th Century. They were democratically organized interest groups con-

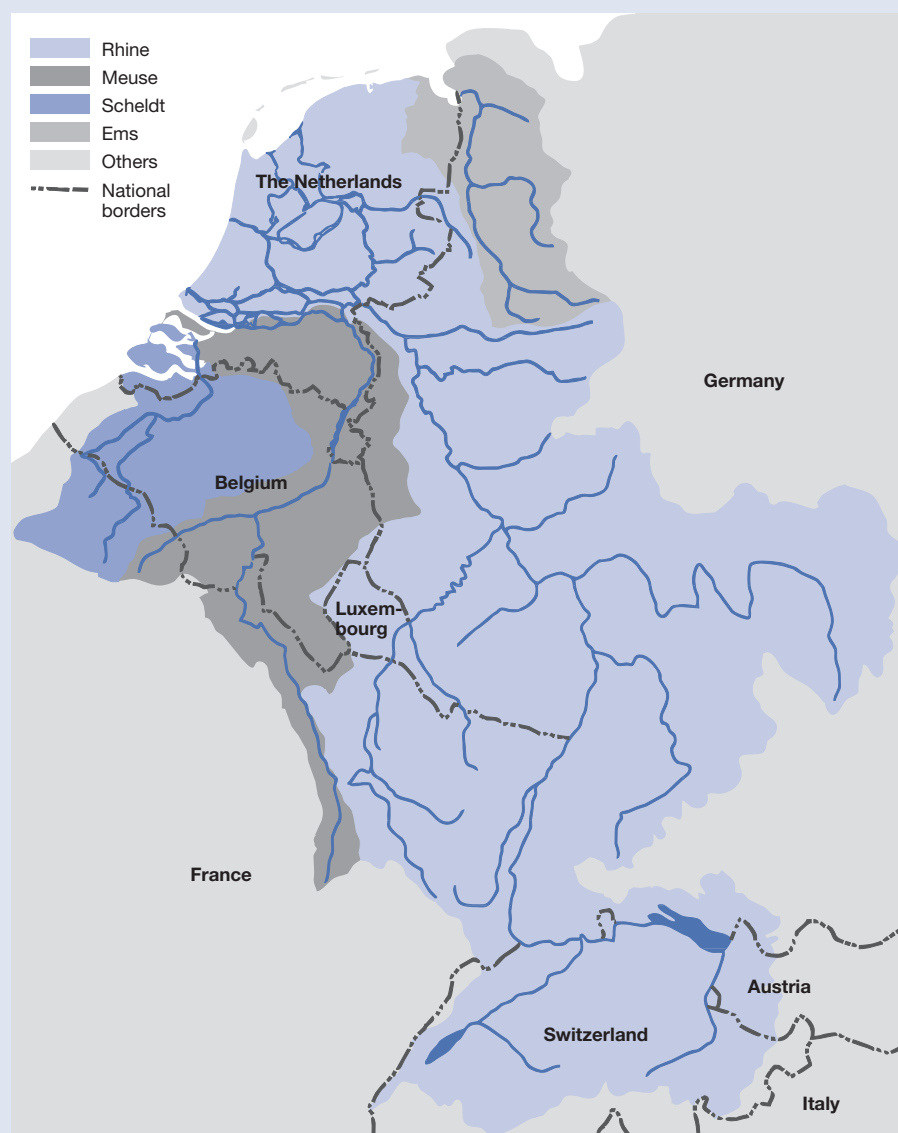


Fig. 1: Watersheds within the Netherlands.

sisting of elected representatives from the local farming communities. They remained independent of the national political system for a long time; i.e., they operated outside of the three-tiered (national, provincial, and municipal) constitutional Dutch government. Till the 18th Century, approximately 3000 district water boards had been formed. Each district had its own water management plan and was responsible for its own flood protection. A centralized, national organization became necessary in order to coordinate all the various individual efforts and to be able to practice water management on a larger scale. The state water authority, "Rijkswaterstaat", was therefore instituted in 1798. The State Water Authority (under the Ministry of Transport, Public Works and Water Management) is still responsible for integrated water management and flood protection along larger streams and lakes, estuaries, and along the North Sea.

Water Management in the Netherlands Today

Today, some 56 relatively autonomous water boards still exist in the Netherlands. They are responsible for the regional management of water systems according to the policies of their province. They regulate, for example, management goals with respect to water quantity and quality. Overall, the current situation of water management in the Netherlands is still very complex involving at least three different ministries, 12 regions, approximately 600 towns and communities, in addition to the 56 water boards. This situation is not yet in accordance with the requirements of the WFD. France, for

example, has only six water management districts, while its land area is 13 times larger than the Netherlands. Figure 2 shows a possible reorganization of the districts in the Netherlands that would satisfy WFD requirements.

"Integrated water management" has been at the heart of water legislation and ordinances in the Netherlands since 1989. It considers quantitative, qualitative and ecological aspects of water management. The goal is to find a balance between maintaining the ecology of a stream system while also utilizing the stream for various other purposes. Undoubtedly, the Netherlands will benefit from its past experience in integrated water management when implementing the changes required by the WFD; however, integrated water management as such is not the basis for future water management according to the goals of the WFD.

Implementation of the WFD

Each of the EU member states is responsible for the implementation of the WFD within its boundaries. In order to facilitate international coordination of the management plans, the WFD allows for the subdivision of watersheds into smaller "working areas". In the case of the River Rhine, for example, certain sections could be designated as "sub-watersheds" according to natural junctions, i.e., at the outflow of a lake or the confluence of two major tributaries. In the Netherlands, a river basin district not only encompasses streams and lakes, but also the intertidal zone; that is, the zone between river and sea where the salinity is clearly above that for fresh water but below average for the sea.

The wording of the WFD is rather vague in a number of instances, meaning that many details of implementation have yet to be worked out. A large number of working groups, in close cooperation with the EU, will have to deal with a multitude of topics: how to pay for the preparation of drinking water, how to deal with severely altered water bodies, assessing the condition of surface waters, and many more. The national governments are responsible for regular progress reports to the EU. Based on the positive experience within the International Commission for the Protection of the Rhine (ICPR), the Netherlands advocates a single, comprehensive management plan for any river system that crosses national boundaries. This will insure that ecological goals and corresponding management measures are coordinated and consistent for the whole river system. Some parts of the man-

agement plan will of course have to be dealt with on a national level.

The International Commission for the Protection of the Rhine (ICPR)

Contract partners of the ICPR are Switzerland, France, Luxembourg, Germany, the Netherlands and the European Union. The working area of the ICPR extends from the point where the Rhine leaves Lake Constance to the North Sea. During preparation of the WFD, the EU often praised the work of the ICPR as an example of international cooperation and coordination of water management practices. Since the requirements imposed by the WFD apply to the entire watershed however, Italy, Austria, Liechtenstein, and Belgium must become involved as well.

The new organization for the international coordination of water management along the Rhine was worked out in frequent meetings of the "water directors" of the individual countries. Additionally, the EU has established a preparatory committee, which reports to the water management authorities of the individual countries. Unfortunately, the "water directors" have, at least until now, not fully included the ICPR in the coordination and preparation of the water management plan for the Rhine river system.

Coordinated Action

The WFD adopted by the EU demands the rehabilitation and coordinated management of streams, lakes, ground water, estuaries and near-shore waters, but only provides very rough guidelines as to how to meet these demands. Fulfilling the requirements of the WFD represents an enormous challenge for all of the member states and will take many years of hard work and negotiation. Some of the major tasks will be to compile a list of definitions, to develop a common set of tools, and to establish coordination and management structures.



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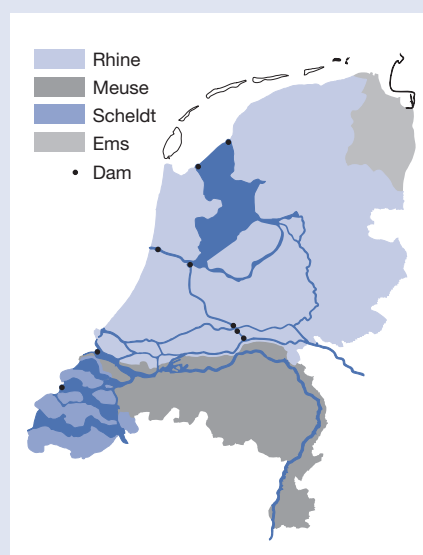


Fig. 2: Proposed boundaries for water management districts in the Netherlands.