



International co-operation on Rhine water quality 1945–2008: An example to follow?

Erik Mostert *

Delft University of Technology, CiTG, Stevinweg 1, 2628 CN Delft, Netherlands

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ABSTRACT

The management of the Rhine is often seen as an exemplary case of international river basin management. In the Rhine basin, countries that went to war with each other twice in the last century have managed to reach agreements on many issues and water quality has improved considerably. The improvement in water quality is often attributed to the activities of the International Commission for the Protection of the Rhine and in particular to its Rhine Action Plan. In order to test this assertion, this paper describes and analyzes the development of international co-operation on the water quality of the Rhine since 1945. It concludes that water quality improvement cannot be attributed to any single factor. Instead, a whole array of interrelated factors are at play, including the European Union, other international fora such as the North Sea Ministerial Conferences, domestic legislation, the activities of environmental NGOs and waterworks, growing environmental awareness, and the changing structure of the industry in the basin. Because of the importance of contextual factors, the Rhine experiences cannot simply be applied to basins with a different context. In many cases, international river basin management may be promoted most effectively by promoting co-operation at the river basin level. In many other cases, however, it may be more effective to identify and then work on the contextual factors that (1) have the biggest leverage effect in the specific case and (2) can be influenced most effectively.

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1. Introduction

In March 2000, the World Water Vision was presented at the Second World Water Forum and Ministerial Conference in The Hague (Cosgrove and Rijsberman, 2000). The central message of the World Water Vision is the existence of a growing water crisis. Some 20% of the world population is presently without access to safe and affordable drinking water and more than 15% is chronically undernourished. If no further action is taken, these figures will only rise because of population growth. The situation is further exacerbated by the fact that many water resources are shared by more than one country (more than 45% of the earth's land surface is located in international river basins: Wolf, 1999), and many people fear that the wars of the 21st century will not be over oil, but water (Swain, 2000; Trottier, 2003). Few historical examples of water wars exist, but conflicts falling short of a war have occurred frequently (Wolf, 1998).

To resolve the water crisis and prevent water wars, international river basin management is called for. However, it is not clear what this should look like. While some advocate strong supranational river basin authorities with legal powers and independent financing, others put their faith in intergovernmental river basin

commissions that act as a platform for negotiation and co-operation (Biswas, 2004; Mostert, 1998; Mostert et al., in press). Still others suggest to look beyond the river basin and focus on the economic, social and political context of river basin management. This would bring a completely new set of issues to the fore, including international relations, regional economic co-operation (as in the European Union and the South African Development Co-operation), and virtual water trade (e.g. Allan, 2003; Milich and Varady, 1999; Sadoff and Grey, 2002; Wirkus and Böge, 2005).

The management of the Rhine and especially the International Commission for the Protection of the Rhine (ICPR) are often seen as exemplary cases of international river basin management (e.g. Frijters and Leentvaar, 2003; Huisman et al., 2000; Ruchay, 1995; Wilken, 2006). In the Rhine basin, countries that went to war twice in the last century have managed to reach agreements on many water issues, and water quality has improved considerably. However, it is not clear whether water quality improvement can be attributed to these agreements and how relevant the experiences in the Rhine basin are for other basins.

This article sets out to answer these two questions. It describes the development of international co-operation on the Rhine after World War II, focusing on the water quality issue, and discusses how effective the Rhine co-operation has been in terms of water quality improvement. Moreover, it tries to draw lessons from the Rhine experiences for other basins. For the period until 1994, much

* Fax: +31 15 2785559.

E-mail address: e.mostert@tudelft.nl

use has been made of Dieperink works (1997, 1999), in addition to authors such as Bernauer (2002), Bernauer and Moser (1996), Verweij (1999, 2000a,b), Marty (2001), Disco (2007), Grünfeld (1999), Ruchay (1995), and Huisman et al. (2000). In addition, the most important policy documents have been consulted, such as the Chemicals and the Chlorides Convention and the Rhine Action Plan. The discussion of the post-1994 period is based primarily on original documents, such as the reports of the ICPR and the Water Framework Directive (2000/60/EC).

2. Development of international co-operation

2.1. International co-operation until 1963

The Rhine is the largest river in north-western Europe. Its basin of 168,000 km² covers significant parts of Switzerland, Austria, Germany, France, Luxemburg, Belgium and The Netherlands, as well as small parts of Italy and the whole of Liechtenstein

(Fig. 1). Major European industrial areas are located in the Rhine basin, including the Ruhr-area in Germany and the Rijnmond area near Rotterdam. The river itself is used intensively for shipping, waste disposal (although point-source pollution has decreased significantly), drinking water production, and irrigation. The Rhine used to be a very important salmon river, but in the 1930s salmon stock dwindled due to dam building, overfishing and deteriorating water quality (Liefveld and Roukema, 2007).

Until 1950, international co-operation on the Rhine was limited to shipping and salmon fishing. In 1815, following the Napoleonic wars, the Central Commission for Navigation on the Rhine was set up under article 108 of the Final Act of the Congress of Vienna (Köppen, 1966), and in 1885, The Netherlands, Switzerland and Germany concluded a treaty establishing the Salmon Commission and limiting the means of and the periods in which salmon fishing was allowed. The Central Commission still exists today, but the Salmon Commission ceased all activities in 1950 because of the disappearance of salmon from the Rhine.



Fig. 1. The Rhine basin (source: International Commission for the protection of the Rhine, <http://www.iksr.de>).

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