

Indicators of co-operation in the management of trans-boundary river systems – Baltic Sea

1. Policy Objective & Theme

- SUSTAINABLE ECONOMIC GROWTH: Developing Europe's regional seas sustainably

2. Key Approaches

- Participation
- Knowledge-based

3. Experiences that can be exchanged

A methodology is presented which allows the degree of co-operation between nation states sharing a river basin to be determined. Blockages in the needed co-operation of river basins can, therefore, be identified. The degree of co-operation can be coupled to pressure or state indicators to ascertain whether it is leading to an improved status of the basin. The approach is also flexible to allow other parameters to be included if required.

4. Overview of the case

The Water Framework Directive (WFD) specifies that Member States should ensure co-operation on international River Basin Districts lying within the territories of the EU. Therefore, the fourteen international Baltic Sea river basins were subjected to a test designed to measure the degree of trans-boundary co-operation between the nation states sharing the basin. All nine basins shared by an EU country and non-EU country showed poor co-operation in contrast to the good co-operation between EU Member States sharing a basin.

5. Context and Objectives

a) Context

According to the WFD River Basin Districts (RBDs) should serve as the new management units for water in Europe. An RBD may be made up of either one single river basin or of a combination of several small river basins, together with associated groundwater and coastal waters. For each district, a comprehensive River Basin Management Plan (RBMP) should be drawn up by 2009. River basins that extend across international borders should be assigned to international RBDs. The WFD specifies that Member States should ensure co-operation on international RBDs lying within the territories of the EU, e.g., by producing joint RBMPs. If the basin extends beyond the territories of the EU, the WFD encourages Member States to establish co-operation with non-Member States and thus manage the water resource on a basin level.

The Baltic Sea Drainage Basin (BSDB) is a large heterogeneous region. The drainage basin covers an area of 1,739,000 km² and is shared by 14 countries of which 10 are inside the EU (Czech Republic, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Slovakia and Sweden) and four outside (Belarus, Norway, Russia, and Ukraine). There are at least 14 larger international river basins in the region, covering more than half of the total area, nine of which have part of their drainage basin in non-EU countries. Quite a large proportion of these basins are experiencing transboundary water quality problems, primarily caused by excess nutrients and pollution from hazardous substances. They are home to about 84 million people.

b) Objectives

To characterize and empirically measure co-operation - primarily in relation to the WFD - in international river basins by assessing a number of selected indicators. Also to elucidate possible connections between co-operation and water quality (primarily with respect to eutrophication) in international river basins in the Baltic Seas District Basin, first by making a water quality ranking based on selected indicators, and second by connecting the water quality ranking with the measured co-operation.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The work was conducted at the Department of Land and Water Resources Engineering, Royal Institute of Technology KTH and the County Administrative Board of Stockholm

b) ICZM tools

Six indicators considered as giving a good measure of the degree of co-operation were selected. These were:

1. Water Treaties. Today, it is widely accepted that institutions play a key role in promoting international co-operation and thus preventing and mitigating water resource management conflict. Basins without treaties are significantly more prone to conflict than basins with treaties. Because of the great variety in the extensiveness of river basin treaties, each was assessed on the basis of three important aspects i.e. (a) whether there is a water commission established and working, (b) whether all countries sharing the basin (except countries having less than 500 km² or 3% of the basin area on its territory) are signatories to the treaty, (c) whether the water treaty specifically deals with water quality or WFD issues.
2. Basins Shared by EU Member States. Is there a joint legal framework for the sharing of international water resources, are national water laws and regulations harmonised between riparian countries?
3. International RBDs. All RBDs with one or more international river basins should be designated as international districts. However, WFD text leaves room for interpretation so there may be variations in the definitions of international districts among Member States. Therefore, RBDs officially appointed as international districts according to the WFD by all Member States sharing the district were used as an indicator for co-operation.
4. Ambitions for a Joint River Basin Management Plan. The WFD encourages countries to co-operate in producing joint RBMPs for international RBDs. The first plans are to be ready in 2009 therefore the assessment considered whether there are officially stated plans to produce a joint RBMP.
5. Joint Characterisation Efforts. According to Article 5 of the WFD, Member States should have carried out characterisations with regard to water status, driving forces and pressures and economic analyses of all their RBDs.
6. Informal Co-operation Initiatives. The previous indicators reflect official opinions, decisions, and actions taken at the national level. However, in practice, co-operation on international river basins may take place at other levels of society, and such co-operation may be initiated and financed through other channels than official, national sources. For capturing this aspect of transboundary co-operation, the existence of more informal regional/basin co-operation through various projects between, e.g., local and regional authorities was therefore included as an indicator. Each indicator was assessed for each river basin according to a dichotomous scoring system, i.e., if a river basin fulfilled all conditions of the indicator at hand, the basin received a score of 1, and if the river basin did not fulfill the conditions of the indicator at hand, the basin received a score of 0. Therefore, each basin could score between 0 and 6.

The co-operation indicators can be coupled to either/both pressure (i.e. population, cultivated areas) or state (i.e. nitrogen or phosphorus concentrations) to determine whether the co-operation is leading to an improved status of the basin. Over-enrichment has been identified as the most pressing water quality issue for the Baltic Sea and other indicators could be used elsewhere.

7. Cost and resources

No costs are available.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The results on the Baltic Sea River basins showed that all five of the river basins shared solely by EU Member States scored 4 or higher with respect to co-operation. However, all nine basins shared by a non-EU nation scored 2.66 or lower, the Vistula, Pregola, and Nemunas scored particularly poorly. This immediately indicates that basins shared with EU Member States and countries outside the EU have difficulties in implementing the WFD.

9. Success and Fail factors

10. Unforeseen outcomes

The suggested approach of linking co-operation scores and water quality ranking scores is simple to explain and is based on robust and measurable indicators of co-operation and water quality issues of concern, in this case eutrophication. It provides a benchmark for assessing the extent of co-operation in terms of the seriousness of the water quality issue of concern. If the applied approach can be periodically repeated, it could be used to investigate or monitor trends in co-operation and water quality. Additionally, the assessment could be extended to encompass more of the international river basins and RBDs in Europe. In addition to water quality (eutrophication), other urgent water related issues, such as water availability—an important issue in other parts of Europe—could be addressed

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- International River Basin Management under the EU Water Framework Directive: An Assessment of Co-operation and Water Quality in the Baltic Sea Drainage Basin (2006) S. Nilsson and S.Langaas Ambio 35, 3-4-311



Baltic-International river basin management - Nilsson - Ambio (438.56 KB)

