



## **International and national shared watersheds in the South-Eastern Baltic: spatially-administrative analysis for water management**

**B. Chubarenko, D. Domnin**

Shirshov Institute of Oceanology of Russian Academy of Sciences, Atlantic Branch

Most of the river basins in the South-Eastern Baltic are transboundary. State borders as well as internal borders between municipalities are not correlated with the boundary lines of main watersheds. This non-coincidence of natural and administrative spatial divisions makes the task of water management in the region rather complicated. Moreover, the countries shared catchments have a different management experience and legal basis. Lithuania and Poland as members of European Union are obliged to follow the EU Water Framework Directive, while Kaliningrad Oblast as a part of the Russian Federation uses the Russian Water Code as a principal law of water usage and protection.

The main purpose of this paper is twofold: firstly to give an overview of transboundary basins in the South-Eastern Baltic and secondly to present the results of spatial analysis and recommendations for watershed management.

Water quality in the Baltic Sea, especially in coastal waters, directly depends on economic activity and water usage in its drainage basin. Most of the total nutrient load entering the Baltic today originates from diffusive sources (Veivo, 2004), especially from agricultural soils, where it has accumulated in the past (Raateoja, Pitkanen, 2004) and continues to do so at present.

For the South-Eastern Baltic the extreme downstream areas of most of the river basins are densely populated and used for recreation or tourism, while agriculture is developed further away from the sea in the upstream segments of the catchments. Classical upstream-downstream influences occur in terms of water quality. Therefore, sustainable management desires to harmonize needs and development plans for these basins

at the international and national levels.

Water resources of the South-Eastern Baltic are essentially transboundary. They are shared by Kaliningrad Oblast (Russia), Lithuania and Poland, which have different legal systems for water issues. This is an obstacle for rapid development of common goals and standards. But, on the other hand, this is a great challenge and driving force for international cooperation. Since resources are shared all stakeholders have to develop a responsibility for water usage taking into account that the neighbours in a basin are dependant upon each other.

Only few steps towards the harmonization of regulation as well as monitoring and other tools supporting decision making process have been made so far (Rassmussen, 1997; ENVRUS, 9803, MANTRA, 2004) in the region. Stronger efforts are required, and the foremost priority is the development of joint river basin management plans for the main transboundary watersheds.

Catchments boundaries neither coincide with national borders nor with internal boundaries between municipalities in Kaliningrad Oblast, Lithuania or Poland. Therefore, transboundary issues within the countries are downscaled to the level of national administrative units (Chubarenko, Domnin, 2006). In future, municipalities have to coordinate their activities by integrating issues of water usage for all upstream and downstream neighbours.

Detailed analysis of the spatial structure of the main watersheds and administrative units in the Kaliningrad Oblast (Russia) using GIS allowed to develop principal schemes both of shared watersheds within a municipality and municipalities within a watershed. This scientific analysis was a basis for recommendations distributed among all water and municipal authorities to help them with the strategic planning and current water management. This study was carried out using the methodological approach developed during the Integrative Water Management Pilot Study of the NATO CCMS (Committee on the Challenges of a Modern Society).