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Management conflicts in the Vistula Lagoon area

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ABSTRACT

The Vistula Lagoon is a transboundary water body, shared by Poland, an EU member state, and Russia. This fact hampers effective management of waters with respect to navigation, water quality, fisheries and tourism.

The current state of communities living by the Vistula Lagoon is rather difficult. Economy of the southern part of the lagoon has been suffering persisting unemployment, the northern part performs better but not by using the lagoon but due to attractive Baltic Sea beaches along the Vistula Lagoon Spit, that draw numerous tourists during the summer season. Next, the entire Polish part of the Vistula Lagoon is under NATURA 2000 and Birds Directive. This poses great problems to fishermen and potential spatial development investors. Many investments are stopped or hampered by NATURA 2000 restrictions. Also, fishermen lose their fishing potential on behalf of very large population of cormorants who can eat more fish than fishermen catch. Laws and regulations are not adjusted to the existing situation and lead to overuse of fish stocks or destruction of fish spawning areas.

Given the transboundary dimension of the Vistula Lagoon it became a case study for investigations of the FP7 LAGOONS project. It includes a socio-economic workpackage, aimed at identification of management problems raised by various stakeholders and end-users of the lagoon. For this purpose a series of interviews was carried out with representatives of local communities living and working on the Polish side of the Vistula Lagoon. The purpose of those interviews was to identify problems and conflicts concerning local environment, management of the area and legislation from the perspective of 'ordinary' people. Unfortunately, similar interviews on the Russian side of the lagoon were not executed, due to general financial constraints faced by non-EU partners participating in the FP7 EU program project.

The respondents highlighted several key problems that prevent prosperity and sustainability of the lagoon and add to persisting relative poverty of the region. Primarily, they pointed out to **bad quality of water** in the lagoon, despite recent improvements in terms of erection of many new waste water treatment plants. Then, they indicated **poor touristic and harbor infrastructure** on both the northern and southern parts of the lagoon. Next, they signaled **bureaucratic difficulties** related to ecological restrictions imposed by NATURA 2000 requirements. This included the strain on the fishing sector by very large colony of cormorants. Finally, they discussed the problem of free navigation and access to the lagoon by Polish and non-Russian vessels. Nevertheless, the respondents believe that the lagoon possesses high economic potential, which must be harnessed to begin region's economic recovery and first steps toward sustainable development.

1. Introduction

The Vistula Lagoon is located in the South Baltic and is the second largest lagoon in this area after the Curonian Lagoon (Fig. 1). Presently the Vistula Lagoon covers an area of 838 km^2 (out of which 473 km^2 belongs to Russia) and has a drainage basin of 23 870 km^2. The single inlet, the Baltiysk Strait, is located in the Russian part of the lagoon. The lagoon has an elongated shape running from south–west to north–east and a total length of 91 km. The average width of the lagoon is about 9 km; the widest point measures 13 km. The lagoon's coastline is about 270 km long, and the volume of water is about 2.3 km^3. It is a shallow coastal ecosystem and the average depth of the lagoon is 2.7 m and the maximum natural depth is 5.2 m close to the Baltiysk Strait (Fig. 2). The lagoon is separated from the Gulf of Gdansk by the Vistula Spit (Fig. 2).

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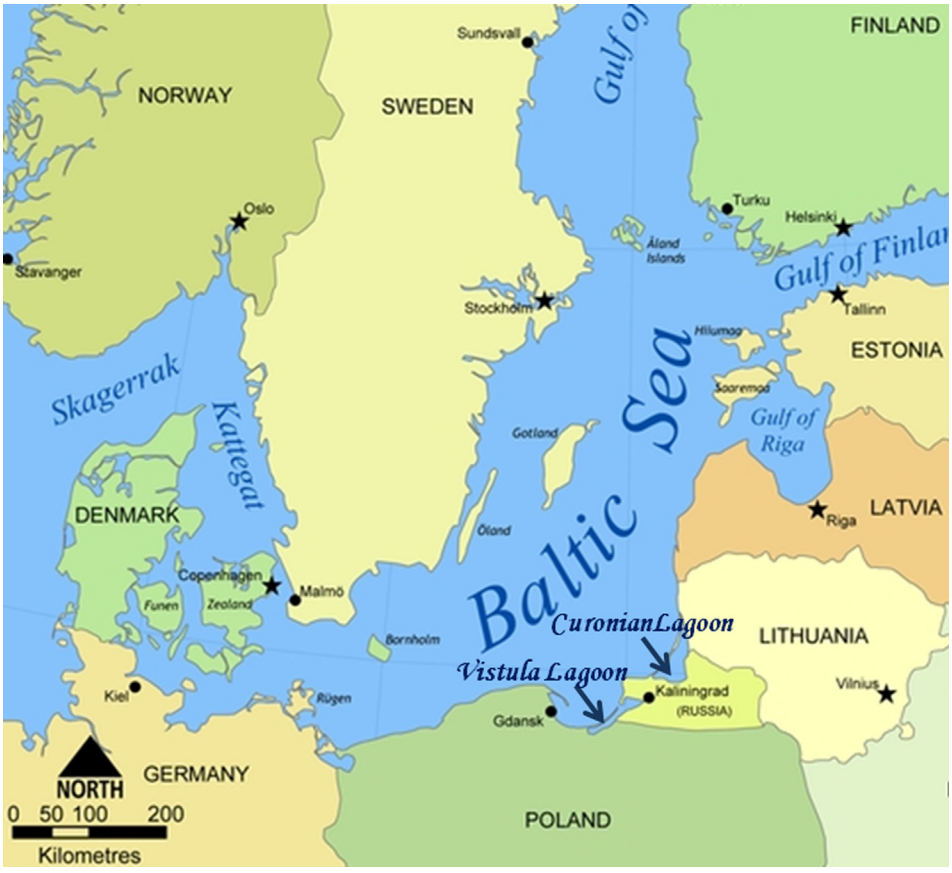

Fig. 1. Map of South Baltic.
Source: http://bhmw.mw.mil.pl/mapy2.php.

Being a transboundary water body the Vistula Lagoon faces problems and conflicts typical for such systems. The most obvious one is no free access of the Polish part to the Baltic Sea and no free access of international navigation to the Polish part. Currently, Polish vessels must inform the Russian authorities about their passage 14 days in advance and the permit can be denied any time. EU and other vessels are prohibited to enter the Lagoon through the Baltiysk Strait on grounds that it is the Russian internal water body. This major problem cannot be easily solved and requires a broader political consensus.

The second source of problems are different environmental legal systems: Poland must incorporate all EU ecological regulations, plus the NATURA 2000 constraints it contracted by declaring that the Polish part of the Vistula Lagoon is the NATURA 2000 region; Russia does not have such obligations. The only ground where both ecological legislations and practices meet are pan-Baltic treaties (such as the HELCOM convention and/or Baltic Sea Action Plan), which have some relevance for the Vistula Lagoon as well, but are far insufficient for its sustainable development. One of the local problems related to divergent ecological regulations are non-harmonized monitoring procedures of physical as well as environmental parameters of water in the lagoon and the lack of smooth data exchange practices. Another local problem is highly insufficient coordination of fishing policies of both countries; the only common regulations concern the annual quotas for catching pikeperch and bream; there are no joint stocking policies and there is no agreement on acceptable fishing gears.

Geologically speaking, the Vistula Lagoon started to form around 7 500 years ago (Lazarenko and Majewski, 1975) by a slow process of separating coastal shoals with sandy dunes. Until the 16th century the Vistula Lagoon was under the influence of freshwater discharging from the Vistula River through its Nogat branch; it is estimated that over 86% of total discharge of the Vistula River ran through Nogat at that time. The intensive inflow of freshwater was accompanied by the accumulation of significant amounts of nutrient rich sediments, which led to a shallowing of the lagoon. Accumulation of nutrients from those sediments is one of the reasons of permanent eutrophication of the entire lagoon, observed nowadays. Since the 16th century regulation of the Vistula River and Nogat River started. In 1610, the first control structure was built in the Nogat River reducing its discharge to 75% of the Vistula River discharge. In 1848, a weir was constructed upstream resulting in a distribution of water discharge between the Vistula and Nogat Rivers in the proportion of 4:1 (25%). After a series of severe floods in the Vistula River delta (the lowland – depression area west of the lagoon), the decision was taken to construct an artificial Vistula River outlet straight to the Gulf of Gdańsk. The work was carried out from 1890 to 1895. In 1900 the inflow from the Vistula River to the Nogat River was ultimately cut-off. The Nogat River was regulated by the three weirs and currently takes only 3% of water from the Vistula River. Since this cut-off, the Vistula Lagoon has changed its character from a mainly freshwater basin into a brackish water coastal lagoon, which has resulted in significant changes in the lagoon's aquatic ecosystem.

The Spit dunes are mainly covered with pine and mixed forests which have been planted to reinforce the dunes, and to protect the Spit's infrastructure from the prevailing winds blowing in from the Gulf of Gdansk.