

**Future developments of the water quality in the Oder Estuary Region
and valuation of socio-economic impacts**

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The German-Polish Oder Estuary Region (Szczecin Lagoon and Pomeranian Bay) is characterised by a high nature potential with multiple forms of landscape and large coastal waters. The whole region is suffering from massive economic problems and high gradients between east and west as well as between coast and hinterland. The increasing tourism development is the major hope for future.

The entire estuary is dominated by the discharge of the river Oder into the lagoon. With its length of 854 km and a watershed area of 120,000 km² the Oder is one of the most important rivers in the Baltic Sea region. Between 1980 and 1999 the annual average Oder discharge was 17 km³ and contributed at least 94 % to the lagoon's water budget. The Oder river carries high loads of nitrogen and phosphorus and causes severe and ongoing eutrophication of the coastal waters. This hampers the bathing tourism.

To understand the natural system of the river, the lagoon and the sea (Pomeranian Bay / Baltic Sea) as well as to understand the eutrophication in the estuary in past, present and future the GIS-based river basin model MONERIS and the bio-geo-chemical Baltic Sea model ERGOM were linked within the project "IKZM-Oder" (Research for an Integrated Coastal Zone Management in the Oder Estuary Region; <http://www.ikzm-oder.de/en/projekt-ikzm-oder.html>).

In the future both models should be connected with socio-economic analyses with the aim to forecast future developments concerning the water quality and its impacts on coastal uses (e.g. tourism). In this process, regional changes of the coastal and watershed area (e.g. landuse changes through Poland's entry in the European Union in 2004) as well as future effects of climate change should be taken into account.

The first thematic conference within the Encora network "Multifunctionality and Valuation" is a good platform for sharing knowledge and to find contact persons. Especially within the following topics we look for cooperations:

- analysis and evaluation of landuse changes
- analysis and evaluation of tourism and waterbased leisure activities
- analysis and evaluation of fisheries
- tools for economic valuation of natural resources.

Concerning the analysis and evaluation of landuse changes a cost-benefit analysis should be worked out as a tool for the Water Framework Directive. The cost-benefit analysis should consider different methods to reduce the nutrients in the watershed area of the Oder river (1 kg P and N) with respect to the costs.