VISLA

Supported by a grant from Norway through the Norwegian Financial Mechanism

# System of environmental and spatial information as the background for sustainable management of the Vistula Lagoon ecosystem

Norwegian Institute for Water Research

UNIWERSYTET WARMIŃSKO-MAZURSKI W OLSZTYNIE

Państwowa Wyższa Szkoła Zawodowa w Elblągu

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We wish to inform You of the new research initiative which concerns developing the methods of improving control and management of the Vistula Lagoon environment. The project is co-finance by the Kingdom of Norway through the Norwegian Financial Mechanism. University of Warmia and Mazury is the institutional coordinator of the project. Norwegian Institute for Water Research in Bergen and State Higher School of Vocational Education in Elbląg are partners.
The overall aim of the project is to improve the control, diagnosis and prediction of environmental status and changes of coastal, shallow marine waters, i. e. the Vistula Lagoon (Baltic Sea, N Poland). The project proposes a new and complex tool for sustainable management of this water body, which faces several investment activities. The project is focused also on establishing fundamental frames for improving water quality and revitalization of wildlife in the Vistula Lagoon. These objectives are concordant with the requirements of Water Framework Directive and NATURA 2000. The project is planned for the period from May 2008 till December 2010.

Presented project aims at the implementation of the innovative internet service for management of environmental resources and the space of the Vistula Lagoon. Precise and repetitive diagnostic of the status of this area by the use of marine research, satellite remote sensing and mathematical modelling should be an obligatory requirement for carrying out of any investment or revalorization activity in such a complex ecosystem.

The major scientific aim of the project is the construction of a mathematical model as formulas allowing the prediction of the environmental consequences of various human interventions in the spatial system of the Vistula Lagoon and also more long-term climate change scenarios. The fundamental tool applied to create a spatial model will be a satellite remote sensing technique combined with modelling of hydrodynamic and processes control water quality. The connection of the mathematical modelling using biogeochemical and hydrobiological data with satellite imaging is the most important innovative value of the project. It is widely accepted in applied environmental sciences that spatial modelling of ecosystem modifications is the most effective approach conducted to elaboration of ecological engineering effective tools for the management of natural resources in global change conditions.

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The objectives of the project, which are concordant with the main tasks are listed here:

- ☞to develop an ecological research and GIS documentation directed on the better understanding of ecosystem processes as causes of high primary productivity and biodiversity loss in the Vistula Lagoon,
- ☞to use and improve the remote sensing technique for extraction of spatial variability of physical, chemical and biological water parameters,
- ☞to adopt the environmental and remote sensing research results into input-output simulation model,
- ☞to implement the internet service for diagnostic and prediction of environmental changes in the Vistula Lagoon as useful management tool.

The target group consists of the units of local government of communes situated along the Vistula Lagoon, management staff of civil shipping and ports, services of environmental protection, managers of treatment stations in the surrounding towns and villages, fishery enterprises, managers of nature preserve areas, high schools.

Welcome to active participation in the project by submitting remarks, comments, propositions and participation in open events as seminars and training.

**Contact persons:**

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