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Extended Abstracts

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Transboundary aquifers

title: **Sustainable use and protection of groundwater resources
— transboundary water management — Belarus, Poland,
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Water is of profound importance for biodiversity and the protection of water resources prerequisite for environmental sustainability. The water protection is also a crucial aspect of human life and is, therefore, prime policy objective of the European Union. According to Frame Water Directive water is not a commercial product like any other but, rather, a heritage which must be protected, defended and treated as such. Water is also an element that takes little notice of political and administrative borders. The history of interest in issues of water management on transboundary scale is relatively new phenomena rise during the last few decades. These issues include globalization, the development of civil society and increased competition between economy sectors for limited natural resources. Water management in a transnational context is much more complex and multifaced than water management within one nation state. Transboundary waters are interwoven with landscape, with societies and culture, and with political systems. Water management in Poland is based on European Union policy. The concept of multi-level governance implies that there is a multilevel network of interactions between wide range of actors, such as state and sub-state, public and private, national, transnational and supernational, NGO's and others.

Integrated water management becomes a particularly complex challenge when two or more countries share a river and its drainage basin. The same situation we encounter on the territory of Bug river basin where three riparian countries Belarus, Poland and Ukraine manage water system. The major challenge of the management of transboundary waters is that the waters must be manage in the contest of anarchy where is no single government to take control. In every riparian country there are different quality and quantity methods of research. In the past transnational groundwater research between Poland and its neighbors could not be freely carried on because of specific geopolitical condition in the period precedent political transformation in the region of Central Europe as well as establishing a partner relationship with eastern neighbors out of European Union structure. Up till now there is lack of international agreements between riparian countries regulating all the issues related to transboundary water management in the region.

Till now there have been some international projects aimed to cover that issue. Although most of the projects mainly emphasize the surface water management with little care of groundwater. Groundwater resources will be of increasing significance for the domestic economy in the future because surface waters - the main water source used by humans over ages - become progressively more contaminated. From the early 80ies in XX century the usage of groundwater in Poland is more or less stable (1 500 000 m³/d). But because of rapid decrease observed in applying of surface waters nowadays almost 70% of man used water became from groundwater resources.

In 2006 the new Science for Peace and Security NATO Pilot Study project "Sustainable Use and protection of Groundwater Resources - Transboundary Water Management" has been launch. This project focuses on development of international cooperation on implementation of water quality assessment and water quality monitoring and assessment as important issues in relation to sustainable land management. It is also a scientific platform for expert from Belarus, Poland and Ukraine as well as from other countries to exchange ideas about water management with special emphasis to groundwater and its protection. The project initiates trilateral cooperation on monitoring, contamination migration and water management issues. The project consists following activities: an inventory information concerning water management and water-

quality issues, current practices for monitoring and assessment, improvement of monitoring and assessment activities (information needs, strategy of monitoring surface water and groundwater as well as final recommendation). Abandonment of study of contamination migration and monitoring of groundwater can degrade the water dependent ecosystems as well as can cause a future problems with drinking water supply.

Nowadays when clean water is becoming increasingly valuable it is vital to develop methods of protecting groundwater resources and modelling the flow in the aspect of potential contamination of drinking water supply. Groundwater research is especially important in case of terrorism threats or military conflicts.

The main objectives of the project are:

- Exchange of ideas of water management at transnational aquifers;
- Building bridges for international cooperation for scientists;
- Presentation of the local groundwater systems monitoring in the transboundary area;
- Assessment of groundwater monitoring tests carried out in Belarus, Lithuania, Poland and Ukraine;
- Exchange of technical experience in the field of groundwater chemical analyses;
- Test different field methods of groundwater probation;
- Establish the best practice in groundwater research by creating common procedures;
- Identification of united method for transboundary groundwater monitoring;
- Create new projects ideas and support their implementation.



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