

Perspective from a pilot basin: how different water-related sectors are involved in the pilot project on river basin management and climate change adaptation in the Neman river

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MOST IMPORTANT RESULTS OF THE PILOT PROJECT AND LESSONS LEARNT

- Assessment of and forecast of runoff with account of different climate change scenarios (A1B and B1) for the entire Neman River Basin with use of Lithuanian and Belarusian models take into account economic development tendencies (for Belarus);
- Agreed indicators of water bodies status, along with respective criteria (values), and systems for classification of water bodies' state and parameters, assessment of water quality with using agreed indicators and criteria;
- Proposals to optimize the monitoring systems with account of climate change;
- Estimation and forecast of the future climate change impact on the water quality at the highest generalization level;
- Common information platform (Internet database), containing data on water resources management and adaptation to climate change for the Niemen River basin countries (<http://www.cricuwr.by/neman/>);

Detected changes of meteorological and hydrological characteristics for the period from 1961 to 2010:

- Increase in annual, winter and summer temperature (largest changes were observed in January) and increase in winter precipitation;
- Maximum spring flood discharge decreased and the minimum winter flow increased;
- Peak of spring flood and the dates of minimum winter flow tends occur earlier in the whole basin area.

Future climate projections The regional CCLM model runs are driven by the initial and boundary conditions of the Global Circulation Model ECHAM5/MPI-OM. Realizations of the ECHAM5/MPI-OM model were dynamically downscaled to a smaller grid using the CCLM model.

- Mean annual air temperature in the basin is expected to rise by 1.4° C–1.7° C with a 2.0 ° C–2.8° C increase in Winter and 0.7° C–1.1° C increase in Summer;
- The annual precipitation amount will increase by 28 - 73 mm, the largest positive changes are foreseen for winter and spring;
- Mean annual runoff will increase insignificantly (decrease in Belarusian part and increase in Lithuanian part of the basin is very likely);
- Predicted summer changes are insignificant in the large part of the basin (Increase in northern part and decrease in the southern part of the basin is modeled);
- Drought probability can increase in the second part of warm period of year;
- The projected maximum spring flood runoff will decrease in the majority of Neman basin;
- Minimum winter flow will increase.

Impact of climate change will be more important on runoff in the Neman River Basin in comparison with forecasted impact of water use changes.

INTERSECTORAL COOPERATION

Events

- Multi-stakeholder seminar in Belarus, 19 March 2013, Minsk;
- Multi-stakeholder consultations and bilateral meetings in Lithuania, 15-17 May 2013, Vilnius.

Most important challenges and lessons learnt

- Discussions about expected impacts of climate change in the Neman river basin and about potential and possible adaptation measures;

- Assessment of the expected impacts of climate change in the Neman river basin, the potential and possible adaptation measures (summary of the vulnerability assessment of the basin) based on the results of the project and on the intersectoral cooperation;
- Development of the draft concept of the Strategic framework for transboundary adaptation for climate change (Strategy on Adaptation to Climate Change for the Neman River Basin) and start of preparation of the Strategy.