



Jointly adapting to climate change in transboundary basins: example of the Neman River basin

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Structure of presentation

1. UNECE Pilot Projects on adaptation to climate change in transboundary basins
2. Example of the Neman river basin
3. The main lessons learned





Why transboundary cooperation is very important in adaptation to climate change?

- To increase effectiveness of measures. If one country will implement the adaptation measures while the other not, the implemented measures may give a much smaller positive effect;
- To prevent negative impacts of unilateral adaptation measures in riparian countries, thereby preventing potential conflict;
- To enable more effective and efficient adaptation through:
 - Wider knowledge base
 - Larger planning space: take measures in the basin where they have optimum effect
 - Possibility to share costs and benefits





Aims of the UNECE Water Convention: protect and ensure the quantity, quality and sustainable use of transboundary water resources by facilitating and promoting cooperation.

- Prevent, control and reduce transboundary impacts including those related to adaptation or mitigation measures
- Use waters in a reasonable and equitable way
- Cooperate on the basis of equality
- Set joint water quality objectives, use best available technology, exchange information, develop joint monitoring and common research, assist each other..

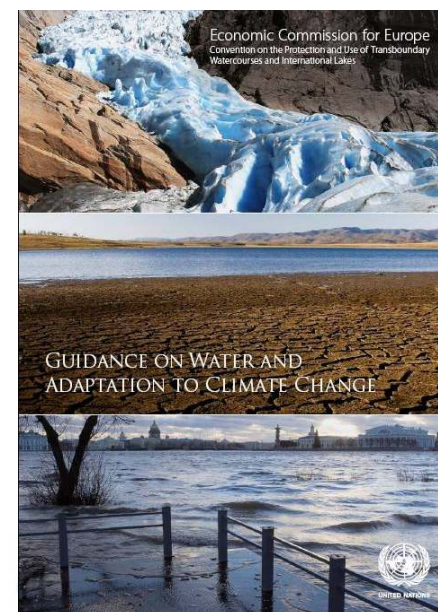
Support in adapting to climate change

Through its unique legal and intergovernmental framework (e.g. Task Force on Water and Climate, pilot projects) the Convention supports countries and basins in jointly adapting to climate change





- Guidance on Water and Adaptation to Climate Change was developed in 2007-2009 by Task Force led by Netherlands and Germany
- General roadmap towards adaptation of water management to climate change
 - Assess impacts of climate change
 - Develop policy, strategic and operational responses
 - Transboundary and health focus

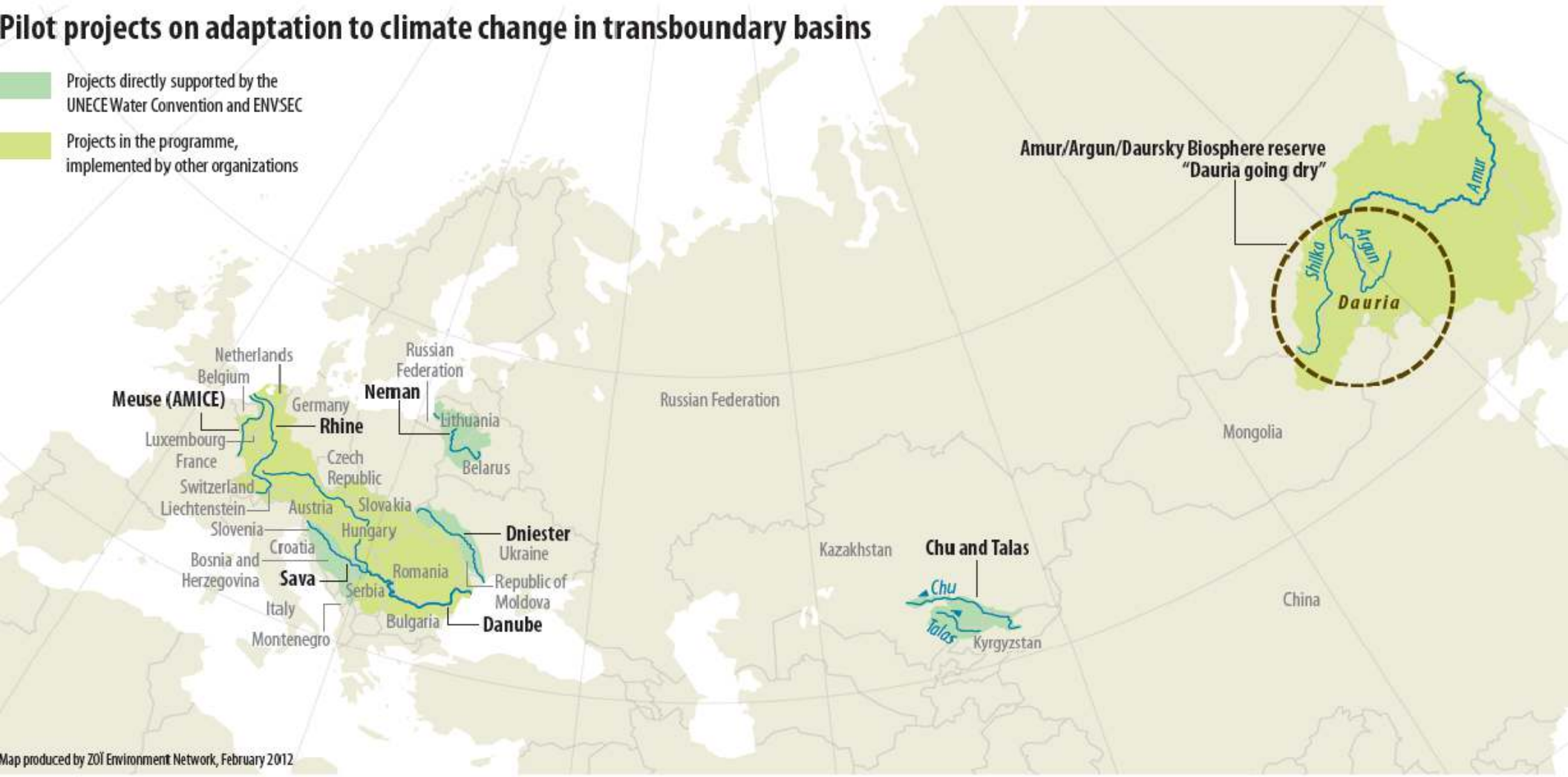




Global network of basins

Pilot projects on adaptation to climate change in transboundary basins

- Projects directly supported by the UNECE Water Convention and ENVSEC
- Projects in the programme, implemented by other organizations



Map produced by ZOI Environment Network, February 2012



Global network of basins working on water and climate

- Focus mainly on developing a joint adaptation strategy
- Specific focus defined by countries; some focus on water scarcity, others on floods

Platform for exchanging experiences

- Regular workshops and meetings of pilot projects members. Next workshop taking place on 13-14 October 2014 in Geneva
- Internet platform

Collection of good practices and lessons learnt on climate change adaptation in transboundary basins





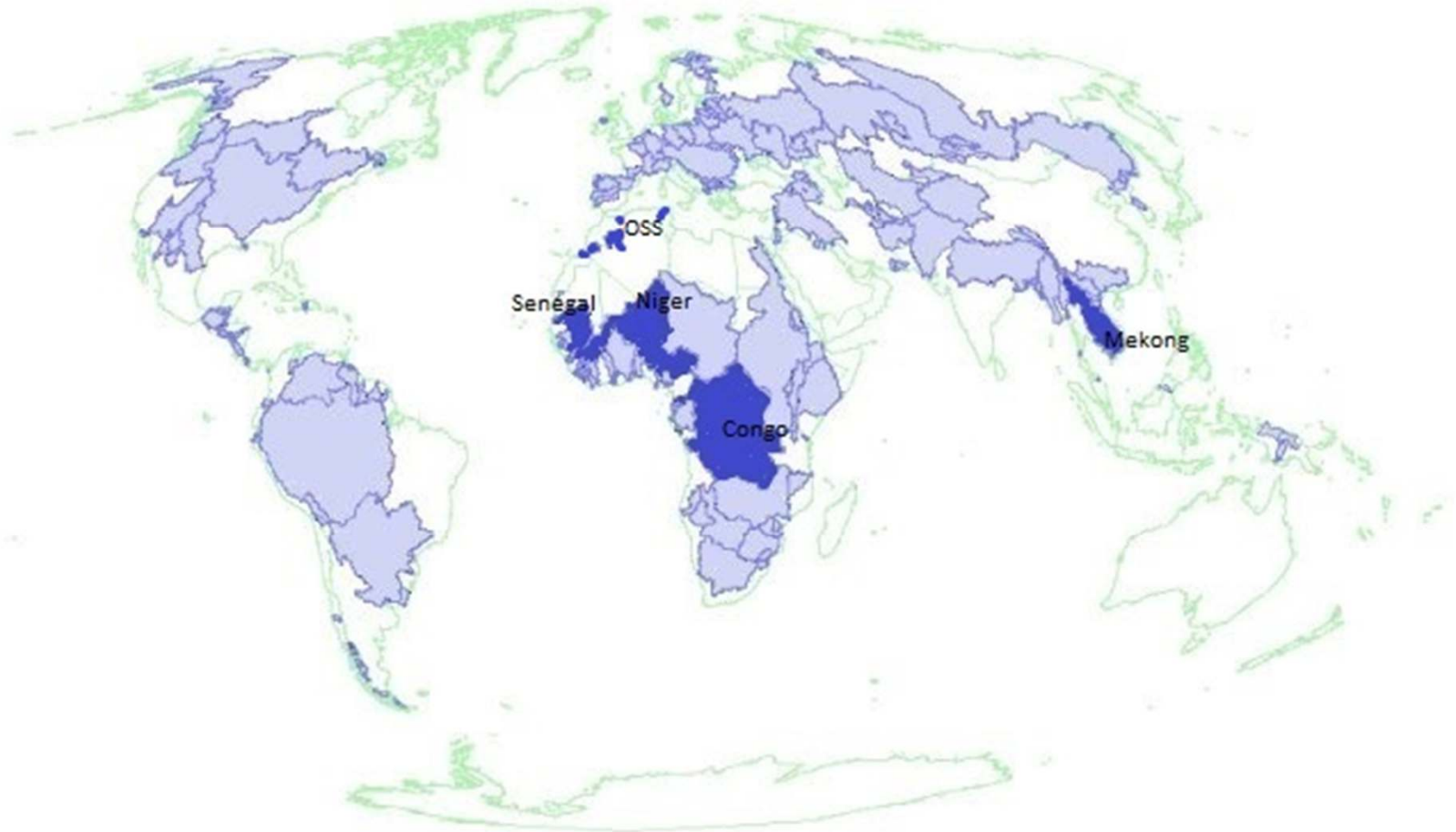
Objectives of the global network of basins

- Promote cooperation on adaptation in (transboundary) basins,
- Assist countries in implementing the Water Convention;
- Support countries and especially those in transition in developing adaptation strategies and measures;
- Create positive examples showing benefits of and mechanisms for transboundary cooperation in adaptation;
- Compare different methodologies and approaches





Basins outside UNECE region that recently joined the global network are: Mekong, Niger, Congo, Senegal, OSS (Sub-Saharan Aquifer and Western Sahara)





Possibilities for partnership/ engagement/ cooperation

- Other basins are still welcome to join the global network of basins working on water and climate
- Invitation to contribute to the collection of good practices
- Benefits: exchange of experience, advice from other basins, yearly meetings
- Invitation to next global workshop on 13-14 October 2014 in Geneva

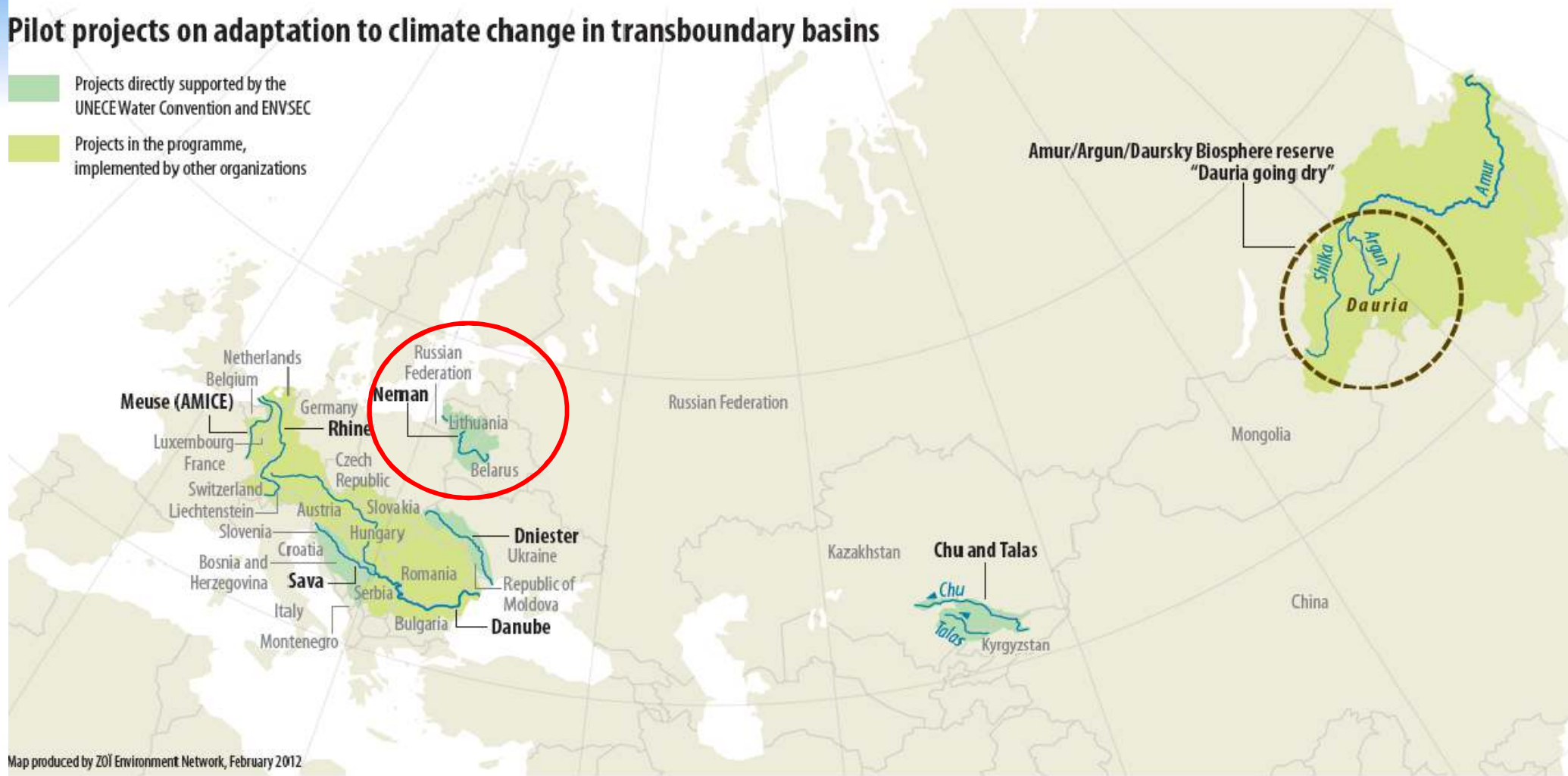




Example: Neman pilot project

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Nemunas river basin

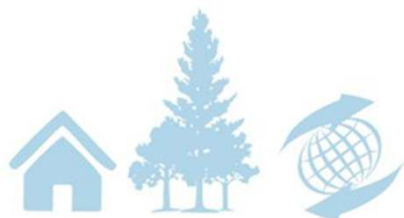
The total river length is 914 km and the basin area is 98,200 km².

Country	Catchment area, %
Lithuania	47.7
Belarus	46.4
Russian Federation	3.2
Poland	2.6
Latvia	0.1





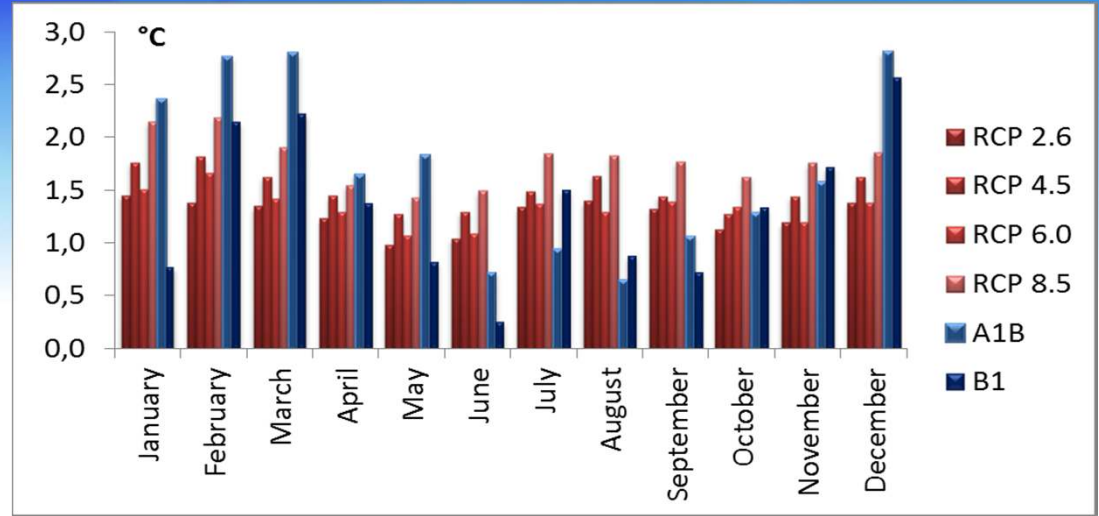
- **The main aim of the project is to improve integrated river basin management and transboundary cooperation in times of a changing climate in the Neman river basin.**





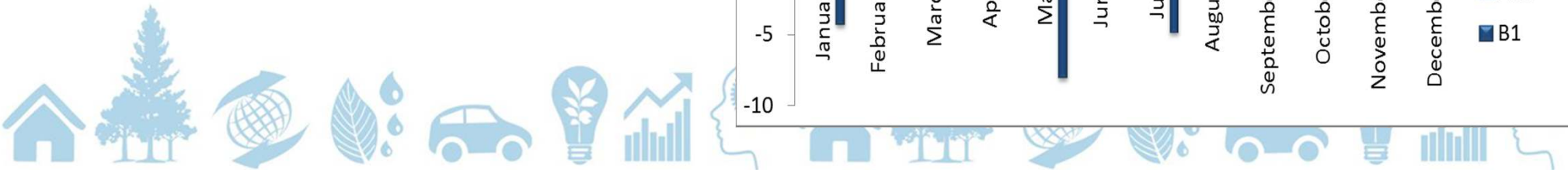
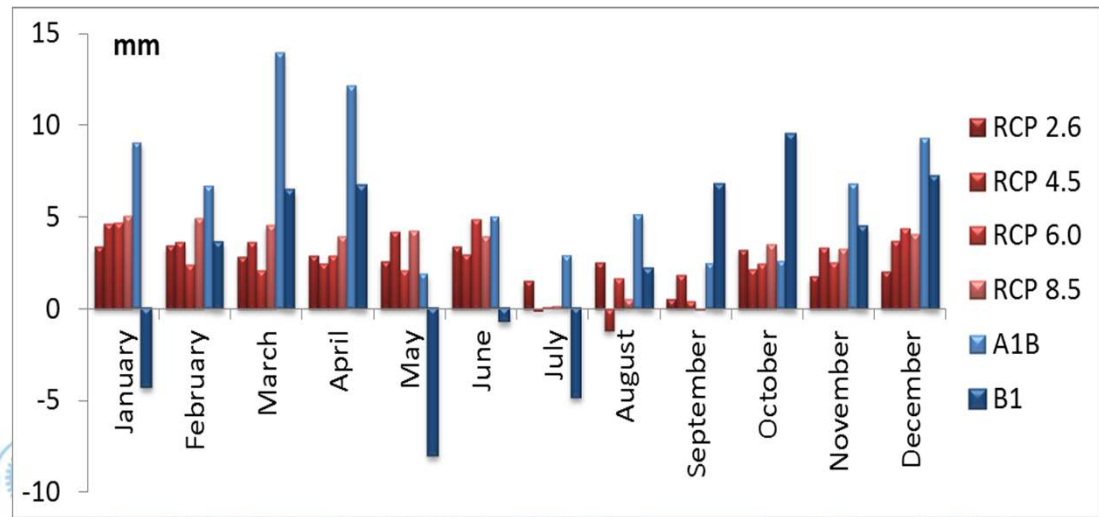
1 step Climate projections

Temperature



Temperature and precipitation forecast (up to 2050) in the Nemunas river basin

Precipitation





2 step Runoff projections

Annual



Multi-model maps with runoff forecast until 2050



Winter



Summer





3 step Water quality

Common Lithuanian and Belarusian approach for assessment of water quality of surface waters was developed.

Possible changes of water quality due to climate change were investigated





The main features of foreseen changes

- ❑ Mean annual air temperature in the basin territory will increase (mostly in winter).
- ❑ The annual precipitation amount will increase while negative changes are possible in some summer and autumn months.
- ❑ Mean annual runoff will increase insignificantly
- ❑ Maximum spring flood runoff will decrease
- ❑ Probability of summer rainfall induced floods will increase.
- ❑ Drought probability can increase in the second part of warm period
- ❑ Possible increase of nutrient because of dissolved oxygen content decrease





It was determined that the impact of climate change will be more important for runoff in the Neman River Basin in comparison with forecasted impact of water use changes





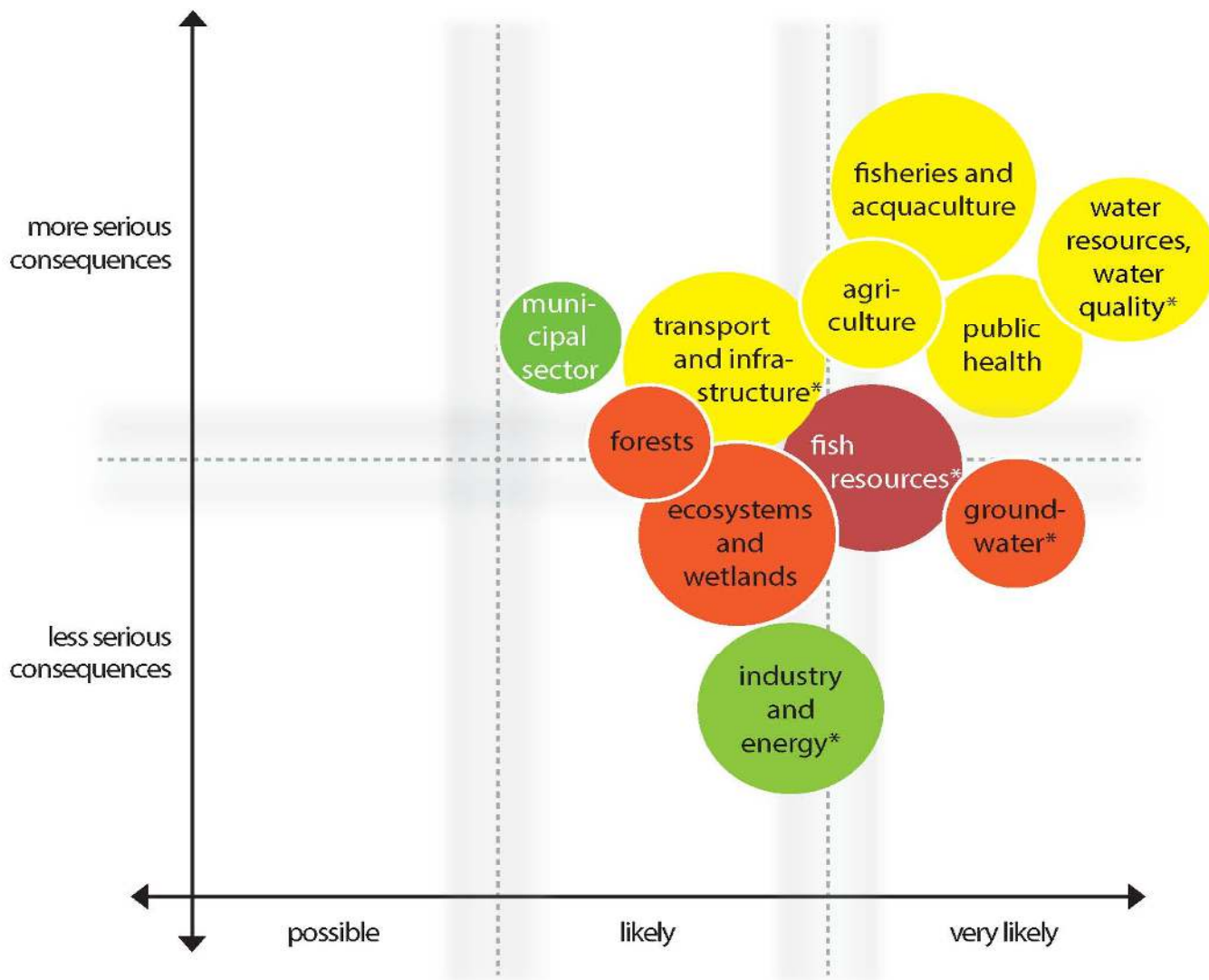
4 step Multi-stakeholder seminars

➤ Multi-stakeholder seminars in Belarus, Lithuania and Kaliningrad region (Russia)





Possible impacts of climate change in the Neman river basin

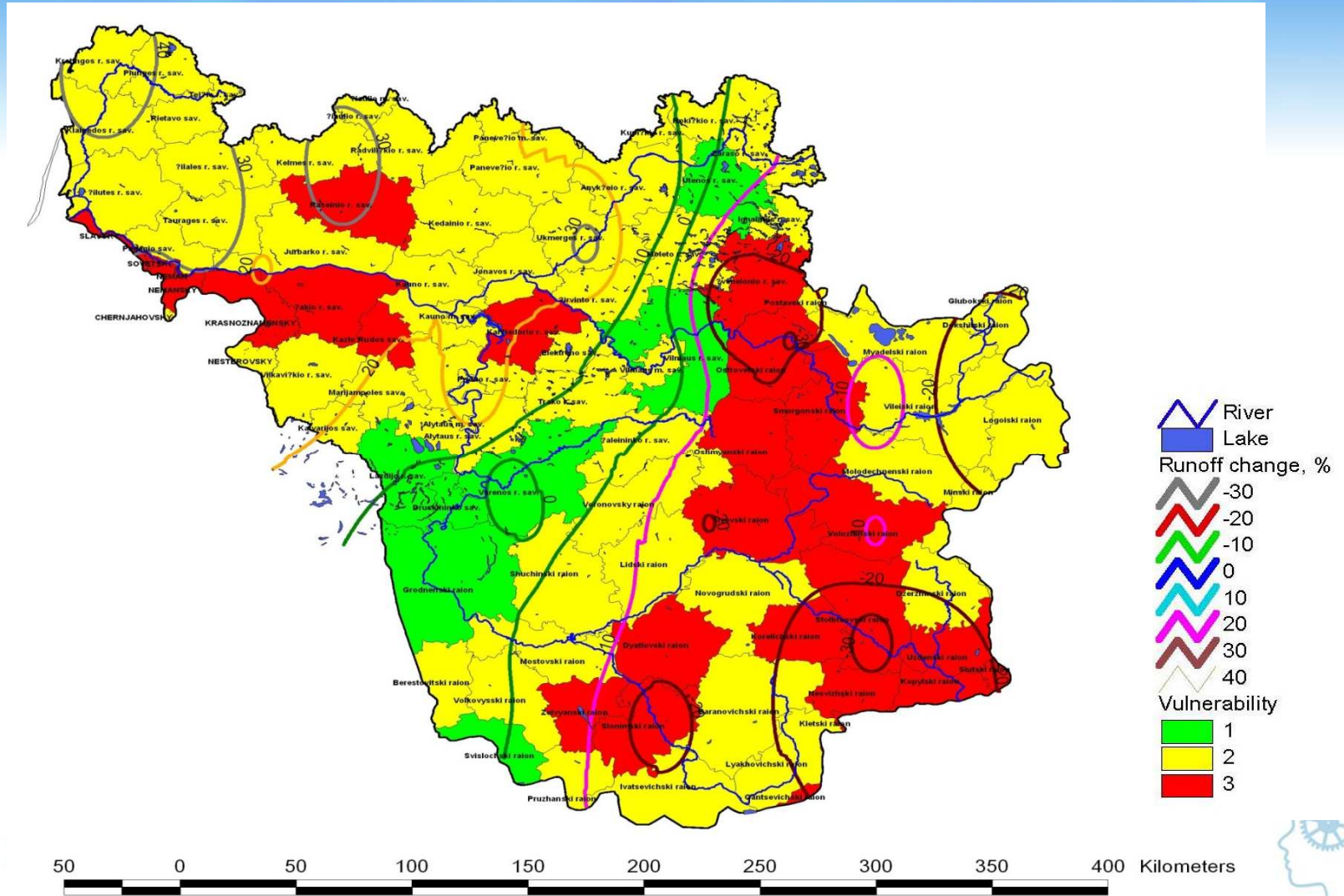


Current adaptation potential:

- high
- medium
- low

* (coordinated) basin-level actions are needed

Vulnerability analysis





Outcomes of the project

- Climate change scenarios developed for the entire Neman River Basin;
- Assessment and forecast of river runoff was made;
- Agreed on indicators (qualitative and quantitative) of water bodies status,
- Assessment of water quality with using agreed indicators and criteria;
- Proposals to optimize the monitoring systems with account of climate change;
- Common information platform (Internet database)
- **STRATEGIC FRAMEWORK FOR THE NEMAN RIVER BASIN ADAPTATION TO CLIMATE CHANGE**





Lessons learned (1):

- Consider climate change vs. Anthropogenic impacts on water resources
- “De-politicize”, bring experts together, field visits (e.g. trip along the river), exchange data informally
- Communicate results appropriately to policy-makers
- Find a compromise, consider interests from all riparians





Personal lessons learned (2):

The formal transboundary agreement or national documents about water management under changing climate conditions are crucial. It's "official permission" for actions.

Better to start with small projects where local communities in riparian countries are involved.

The best way to communicate with local community is to talk about already existing threats (which probability can increase in the future). Discussions about the hardly imaginable new threats are not viable.

The best way to implement adaptation measures is to include them in ongoing projects, which initially are a little related with climate change issues

Communication can reduce any differences of opinion and help to find common solutions





Thank you!

Water and Climate Change website:

http://www.unece.org/env/water/water_climate_activ.html

<https://www2.unece.org/ehlm/platform/display/ClimateChange/Welcome>

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