Newsletter 5

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The ECCONET, or "Effects of Climate Change on the inland waterway NETwork," project is a 3-year Coordination and Support Action funded by the European Commission (DG MOVE) in the context of the 7th Framework Programme. Coordinated by Transport & Mobility Leuven and conducted by an interdisciplinary consortium of 10 partners, it has come to an end now. The first objective of ECCONET was to assess the future navigation conditions, taking into account the influence of climate change on the waterway network. In parallel, ECCONET also analysed possible adaptation strategies in order to improve the performance of inland waterway transport (IWT) in the light of climate change.

The first ECCONET newsletter presented a summary of the results of a general assessment of climate change effects on European inland waterways (IWW), providing a good overview of the state of the art as well as indications for necessary complementary investigations.

In addition to novel knowledge on climate change impacts on navigation conditions in the Rhine-Main-Danube corridor, the second and third ECCONET newsletters presented different types of adaptation measures that were considered to counter the effects of climate change on the inland waterway network, concluded by considerations related to the assessment of feasible adaptation strategies.

The fourth ECCONET newsletter discussed the usage of cost functions in order to determine the relationship between water levels and transport costs on inland waterways between origins and destinations.

This newsletter presents the overall conclusions related to the climate change impacts on IWT in the Rhine-Main-Danube corridor, as well as recommendations for improving the robustness of IWT against extreme weather events and climate change.

More details on the project including relevant public deliverables can be found here: http://www.ecconet.eu.

ECCONET Final Meeting

On Tuesday, 11 December 2012, the ***ECCONET Final Meeting*** took place in Rotterdam. The project's main results were presented to a keenly interested audience, followed by vivid interactive discussions with the project partners, the European Commission and stakeholders.

To download the agenda and the presentations given, you are kindly advised to consult the project website www.ecconet.eu.

ECCONET main findings and conclusions

ECCONET focussed on the evaluation of the effects of climate change on the network of inland waterways and the operational performance of IWT. The results of the study did not indicate a significant effect of climate changes until the mid of the century, but they provide sufficient evidence that climate change adaptation strategies and related measures shall become part of an overall long-term European inland navigation policy. The adaptation needs refer in particular to the second half of the 21st century when climate change is projected to change the discharge characteristics of the analysed rivers more significantly.

The expected increase of low water periods is not foreseen to cause a substantial effect on modal shift in both analysed scenarios ("wet" and "dry") until the mid of the 21st century. As a consequence, inland waterway transport is expected to stay a reliable and cost-effective transport mode.

For the more distant future (2071-2100), the study revealed that the costs of IWT will increase more significantly in all analysed areas of the Danube and Rhine waterways due to adverse impacts of climate change. Accordingly, suitable adaptation measures were defined and evaluated according to different criteria. The long-term aspect of waterway infrastructure investments and the unclear impact of human interventions, like increased water storage for irrigation and energy production, not only justify the elaboration of these adaption measures, but also demonstrate the need for further research. It also has to be mentioned that the efforts to reduce global greenhouse gas emissions are lagging significantly behind the political ambitions, thus increasing the level of uncertainty for the future development.

With regard to the impact of climate change on Danube transportation, the underlying input to models lack the level of detail of those applied for the Rhine. There are indications that e.g. the different characteristics in water discharge, the more continental climate of the Danube region and other different natural and anthropogenic factors will have a more significant impact on low water periods as the analogical assumptions to the Rhine imply. The current insufficient status of waterway maintenance and the high number of existing low water bottlenecks presume a higher vulnerability of Danube transportation to additional external strain caused for instance by droughts.

An important task of ECCONET was to draft policy recommendations and to design a long-term development plan for the implementation of the recommended policy actions, based on the results obtained. This development plan will assist in the preparation of the IWT sector for the forthcoming periods, and it will enable IWT to maintain or even upgrade its competitiveness as an environmentally friendly, cost efficient and reliable transport mode.

The overall conclusion is that, although no immediate action to combat the climate change effects seems to be necessary, a targeted policy taking into account the climate change and its effects on the IWT system is advisable. Therefore, future IWT strategies, development plans and implementation programmes should include the proposed specific activities aimed at the adaptation to the predicted climate change impacts. Further research to monitor the development path of climate change and its impact on European waterways is essential, as well as the reduction of uncertainty.

Policy actions

ECCONET proposes the following set of policy actions to improve the robustness of IWT against extreme weather events and climate change:

- Policy action 1: Continuous observation of climate change impacts on IWT and their quantification
- Policy action 2: Support the adaptation and modernisation of the IWT fleet for coping with altering navigation conditions
- Policy action 3: Development of adaptation measures for infrastructure and improved hydrological predictions
- Policy action 4: Stronger cooperation of waterway administrations and enhanced use of ”smart waterways”
- Policy action 5: Permanent and pro-active cooperation of river commissions
- Policy action 6: Preparation of ports for efficient handling of climate change adapted and modernised vessels

Having in mind the transnational scope of the predicted climate change effects on the European IWT system, all proposed policy actions must be defined and implemented in close cooperation with the states adjoining the rivers. River commissions as well as the relevant industry stakeholders have to be involved and should strongly be supported by the European Commission services for pan-European-wide coordination and EU funding.

It also has to be mentioned that some of these policy actions require changes and improvements in national and supranational - European - legislation for the purpose of fostering a full scale policy implementation. Due to the pan-European dimension, the policy implementation should be based on a long-term development plan. Core elements of this plan and its necessary environment are detailed in the ECCONET Deliverable 5.1 - POLICY GUIDELINES AND LONG TERM DEVELOPMENT PLAN, available at www.ecconet.eu.

The ECCONET project has been completed successfully after three years of intense investigations. Finding a common language and close cooperation between the project partners with the proper expertise in the different fields of research considered was essential for the success. Based on scientific evidence, the project was able to establish more clarity on climate change impacts on IWT in the EU, resulting in recommendations for proper adaptation measures. The objectives set were achieved, constituting a useful knowledge base for further research.

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Coordinator

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ECCONET - Assessing effects of climate change on the inland waterway network and developing adaptation strategies
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