

LOW WATER AND EFFECTS ON RHINE NAVIGATION

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Bonn, 26 November 2019 – On 26 November 2019, the Central Commission for the Navigation of the Rhine (CCNR) organised a [workshop on low water and its impact on Rhine navigation](#) at the German Federal Ministry of Transport and Digital Infrastructure (BMVI) in Bonn.

Nine presenters and eleven panellists at the workshop shared their views on low water and discussed the challenges facing Rhine navigation with the 150 participants present. The workshop's objective, which was to help inland navigation overcome challenges associated with the low water phenomenon and stimulate discussion on coping strategies, was supported through active participation of high-level participants from industry, administration, river commissions, universities and research institutes from six European countries as well as representatives from the European Commission. This diversity of participants favoured a discussion of the challenges of low water from several perspectives and forged a unique opportunity to address the points of view from a wide spectrum of inland navigation's key players.

Barbara Schäfer, from the BMVI, welcomed the participants on behalf of the President of the CCNR, Mr. Achim Wehrmann. In her introductory speech, she recalled the second half of 2018, when many cargo vessels and passenger cabin vessels had been unable to navigate some sections of the Rhine, or only with a considerably reduced load. This caused a decline in freight transport and economic losses on a considerable scale, including knock-on effects for the entire German economy. Logistics chains, especially for raw materials (iron ore, coal) as well as for chemical and petrochemical industry end-products, were severely affected, as was container traffic. In the aftermath of the 2018 low water phenomenon, the German Ministry developed the action plan "[Low water on the Rhine](#)" to for example improve water depth forecasts, provide data on fairway depth, adapt transport concepts as well as vessels, speed up infrastructure development and improve social dialogue.

In a keynote speech, Michael Heinz, commissioner at the CCNR and Head of the department for Civil Engineering, Waterborne Tourism at the Directorate-General for Waterways and Shipping, proposed an approach for an analysis of the entire inland navigation system. He underlined the fact that, if compared worldwide, the Rhine is hydraulically a relatively balanced river and therefore should not be disparaged, but rather be used and developed with intelligence, respect and prudence for the well-being of us all. As a matter of principle, the Rhine has no capacity issues, but does have challenges regarding navigational use. In recent decades, the Rhine fleet and requirements on the transport mode have changed significantly. Both vessel size and draught have increased markedly. The whole logistics chain, from industry to shipping companies, has therefore become more vulnerable to low-water periods. At the same time, integration with industrial logistics chains and the associated demanding requirements on transport reliability are posing major challenges to this mode of transport.

Jörg Uwe Belz, researcher at the Federal Institute for Hydrology in Koblenz and representative of the International Commission for the Hydrology of the Rhine basin (CHR), focused his presentation on the 2018 low water situation in Europe. For the Rhine, as a river with a dynamic water flow, a low water period such as that in 2018 is not unprecedented and therefore could also be anticipated in the future. Over the past 200 years, there have been 15 years in which the Rhine has experienced an at least comparable number of days which, in terms of today's infrastructure requirements, would constitute an obstruction to navigation, and five of them significantly even more severe. Admittedly, these 15 years all pre-dated 1972.

Norbert Kriedel, administrator in charge of market observation statistics at the CCNR, provided insights into the macroeconomic effects of low water levels on the Rhine, looking at their negative effects on German industrial production in particular. Philip Tomaskowicz, Head of Shipping at Rhenus PartnerShip, informed the workshop participants about the economic impacts from the perspective of a major inland navigation company and the challenges that must be overcome in such situations.

ABOUT THE CCNR

The Central Commission for the Navigation of the Rhine (CCNR) is an international organisation that exercises an essential regulatory role in the navigation of the Rhine. It is active in the technical, legal, economic and environmental fields. In all its areas of action, its work is guided by the efficiency of transport on the Rhine, safety, social considerations, and respect for the environment. Many of the CCNR's activities now reach beyond the Rhine and are directly concerned with European navigable waterways more generally. The CCNR works closely with the European Commission as well as with the other river commissions and international organisations.

Wytze de Boer, senior project manager for vessels, transport and shipping at MARIN, explained how vessels could be adapted in the future in order to be able to navigate even at very low water levels. Several projects and studies are ongoing so as to identify the range of possible adaptation measures. Vessels can be optimised either to work efficiently in shallow or in deep water. However, ultimately, it is up to the shipping companies to decide into which optimisation scenario they wish to invest.

Cok Vinke, managing director of Contargo Waterway Logistics BV, reported on the company's fleet and the vessels which performed well during the 2018 low water period. For instance, based on lessons learned from previous low waters, Contargo decided to modify the stern of four of its vessels to increase the pressure on the propeller in order for them to be able to navigate better in low water situations. However, he also highlighted the limits of such adaptation measures, such as the fact that it also depends to a great extent on the experience of the crews. Indeed, inland navigation vessels should be adapted to all situations and be versatile in order to be economically efficient; however, good qualified crews are essential.



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Michael Schreuder, senior advisor on inland shipping at Rijkswaterstaat, presented the sector's information needs. Making a distinction between strategic long-term information and operational short-term information, he informed participants that for the latter, good knowledge about the geography of the navigation area, real time water levels and short-term (3 to 6 days) water level forecasts are required to predict traffic flows and calculate the estimated time of arrival (ETA) of the ship. Referring to the available digital tools, he outlined the current limitations, such as availability of real time data, consideration of dynamic river bottoms and long-term water level predictions. He also presented an outlook of new developments such as improved water level forecasting in the context of the European IMPREX project and enhanced depth information in electronic navigational charts (ENC), as well as corridor management approaches such as RIS-COMEX.

To launch the first panel discussion on adaptation of vessels and waterways, Joachim Schürings, Head of Transport and Logistics at thyssenkrupp Steel Europe AG, explained how the 2018 low water episode impacted on thyssenkrupp's activity and that a portfolio of actions, to be implemented swiftly, is necessary to limit the negative impact of low waters in the future. Such actions were discussed among the panellists, including, for example: technical measures to reduce the draught of the inland navigation fleet, diversification of the fleet, infrastructure maintenance, increased fairway capacity and expansion of transshipment capacities in ports. The need for an intensified dialogue between the industrial, logistical, political and environmental organisations, a main reason behind the organisation of this workshop, was highlighted on several occasions. In particular, allowing these players to put at the forefront their ideas and visions for the future is essential so as to find the right balance between infrastructure and fleet development on the one hand, and preservation of biodiversity and water protection on the other hand.

To kick-off the second panel discussion on adaptation of the logistics concepts to low water periods, Benoit Blank, Head of Bulk Operations Europe at BASF, demonstrated the critical importance of the Rhine and the operation of barges for the raw material supply of the BASF Ludwigshafen site. Logistic flows and supplies to this plant were significantly perturbed by the low water in the second half of 2018. Hence, BASF is already preparing for the future and for the eventuality of a new low water period, by adapting its logistics chains and storage concepts. Among the range of available solutions, digitalisation was mentioned by several panellists, both for the optimisation of supply chain management and for the provision of more accurate longer-term forecasts for the Rhine water levels. Anticipation is key to allowing the logistics chains to adapt to low water phenomena. The availability of alternative modal solutions and further cooperation with other modes - rail in particular - is also paramount to secure the supply of critical raw materials and compensate for the volume of shortfalls of barges. This would require that a swift shift to other modes at loading terminals be possible. Vessel automation and water management were also other measures put forward during the second round of discussions, as was highlighting the vulnerability of container transport, which, compared to the dry and liquid cargo, can be more easily delivered by rail or road.

In his concluding remarks, the Chair, Ivo ten Broeke, from the Dutch Ministry of Transport, Public Works and Water Management, highlighted the fact that there are no "one size fits all" solutions to address the low water challenges being faced by the inland navigation sector. A range of actions needs to be taken rapidly regarding adaptation of fleet, infrastructure, logistics and storage concepts, as well as implementation of digital tools, in order to ensure that inland navigation remains a reliable mode of transport and to avoid a permanent shift away from inland waterways to other transport modes. The measures required are already well-known and available, but it is now time to make a first step towards implementation. To support this, there is consensus among inland navigation key actors that funding and financing solutions must be made available.

As a follow-up to this important workshop, the CCNR Secretariat will draft a report highlighting the challenges and measures already available to increase the resilience of inland waterway transport to low water, in close collaboration with the workshop participants and key inland navigation stakeholders. In the meantime, the German waterways and shipping administration announced the [extension of its water level forecast from four to ten days, for selected Rhine gauge stations](https://www.ccr-zkr.org/13020151-en.html).

The workshop presentations and pictures are available via the following link: <https://www.ccr-zkr.org/13020151-en.html>



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