

# Initiatives and projects reported in the “Act Now” reflection paper

**CCNR EXPERT WORKSHOP: LOW WATER AND ITS IMPACT ON RHINE NAVIGATION**

**18 January 2023**

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# Which measures to address low waters?



	Short-term	Medium term	Long term	
Infrastructure	<b>Improving water level forecasting</b>	Foster integrated project planning approach	<b>Investigate hydraulic engineering and water management options to ensure reliable transport conditions on the Rhine</b>	
	Up-to-date information about navigable channel depth, (digital solutions and exchange dynamic real time measurement)	Optimization of navigable channel depth in the Middle Rhine valley and Lower Rhine		
		<b>Cut administrative red tape</b>		Improve water management on the Rhine
		Dialogue between industry, logistics, politics and environmental associations		Study on possibility to have new /extension of existing water planning of reservoirs
Fleet	<b>Research in optimisation of existing vessels</b>	Dialogue between industry, logistics, politics and environmental associations		
	Research in optimisation of new builds			
	<b>Use of smaller vessels in coupled formations</b>			
Shippers, logistics, industry	<b>Secure time charter contract for barges adapted to low water levels</b>	Optimization of container transport	<b>Expansion of handling and storage capacities in the ports next to the industrial sites</b>	
		Construction/optimization of terminals to facilitate modal shift		
	Optimisation of supply chain control	Adaptation of transport/ storage concepts		
	Operational redesign of logistics site (e.g. longer opening hours)	<b>Dialogue between industry, logistics, politics and environmental associations</b>		

Leading to: an inventory of ongoing measures/projects to help inland navigation to overcome the challenges related to low water



## Inventory: example of a measure linked with water level forecasting

N°	Name	Contributing to measure identified in chapter 5 "Act now" number ....	Description	Main effects/ outcome	Status and timing	CCNR coordination possible (Yes/No)	What could be the CCNR role?	Country where program originated
			(What)		(When)	(Who)	(How)	Country
1	IMPRESX (Improving PRedictions and management of hydrological EXtremes)	A1	Project to improve the prediction and impact of extreme meteorological and hydraulic events (link : <a href="https://www.impresx.eu/">https://www.impresx.eu/</a> )	Related to inland waterways / inland waterway transport: Improve water level forecasting to medium-range and monthly time-scales	Past (finished in 2019)	No	Participation of the CCNR to the user group (CCNR was involved in IMPRESX as stakeholder)	Project coordinator: Royal Netherlands Meteorological Institute (KNMI) / NL ( <a href="https://www.impresx.eu/about/at-a-glance">https://www.impresx.eu/about/at-a-glance</a> )  Consortium: 23 partners from 9 countries ( <a href="https://www.impresx.eu/about/meet-the-team">https://www.impresx.eu/about/meet-the-team</a> )



## Inventory: example of a measure linked with optimization of vessels

N°	Name	Contributing to measure identified in chapter 5 "Act now" number ....	Description	Main effects/ outcome	Status and timing	CCNR coordination possible (Yes/No)	What could be the CCNR role?	Country where program originated
			(What)		(When)	(Who)	(How)	Country
	NOVIMOVE	C2, C3, C4	<a href="https://novimove.eu/">https://novimove.eu/</a>	Enhancing the logistics system density 1. Improved load factor of containers by means of cargo reconstruction; 2. Improved port logistics by reducing waiting times at terminals and sailing time between terminals; 3. Improved river navigation by satellite, sensor and data fusion; 4. Reduced waiting time at bridges and locks by dynamic scheduling system; 5. Innovative vessel solutions to cope with variable water levels; 6. New business models in current stakeholders' networks.	Kick Off June 2020			EU Lead TU DELFT



## Inventory: example of a measure aiming at encouraging the adaptation of companies to low water situation

N°	Name	Contributing to measure identified in chapter 5 "Act now" number ....	Description	Main effects/ outcome	Status and timing	CCNR coordination possible (Yes/No)	What could be the CCNR role?	Country where program originated
			(What)		(When)	(Who)	(How)	Country
8	Clim-ability	A1, B1-3 and C2-8	<p>Consulting services for companies, which brings together experts and researchers with several objectives:</p> <ul style="list-style-type: none"> <li>- collecting meteorological, climatic, hydrological, economic and social information to identify risks</li> <li>- diagnoses the vulnerabilities of companies in the Upper Rhine and identifies scenarios for adapting to climate change.</li> <li>- develops specific information for companies and support for decision-making. It also helps to build innovation perspectives.</li> </ul> <p><a href="https://www.clim-ability.eu/en/welcome/">https://www.clim-ability.eu/en/welcome/</a></p>	Encourage the adaptation of companies	Ongoing project between 2019 and 2022	No	Making the project better known	France / EU



## Inventory: example of a measure linked with all aspects, infrastructure, fleet, logistics

N°	Name	Contributing to measure identified in chapter 5 "Act now" number ....	Description	Main effects/ outcome	Status and timing	CCNR coordination possible (Yes/No)	What could be the CCNR role?	Country where program originated
			(What)		(When)	(Who)	(How)	Country
3	Action plan for low water on the Rhine «Aktionsplan Niedrigwasser Rhein »	A1-9, B1-4 and C1-8	Eight-point plan to ensure reliably calculable transport conditions on the Rhine even in the event of an accumulation of extreme low water periods caused by climate change and to meet the climate change-related challenges for the industrial sites on the Rhine and its tributaries.	<ol style="list-style-type: none"> <li>1. Improve water level forecasts</li> <li>2. Set up DAS (German Strategy for Adaptation to Climate Change) basic service "Klima &amp; Wasser"</li> <li>3. Provide up-to-date depth information to boatmasters</li> <li>4. Adapt transport strategies/optimize transport and load receptacles</li> <li>5. Speed-up implementation of "Optimization of laden draughts on the Middle and Lower Rhine"</li> <li>6. Acceleration by acts to adopt measures</li> <li>7. Investigate options of hydraulic engineering and water management to ensure reliable and predictable transport conditions on the Rhine</li> <li>8. Social dialogue</li> </ol>	Ongoing (short-, mid- and long term)	National (Germany) Coordination with the Rhine riparian states should take place within the framework of cooperation in the CCNR	CCNR as a platform to spread knowledge among other member states	Germany



Federal Ministry  
for Digital  
and Transport

# “Rhine Low Water” Action Plan (8-point plan)

CCNR FOLLOW UP EXPERT WORKSHOP LOW WATER AND ITS  
IMPACT ON NAVIGATION ON THE RHINE on 18 January 2023

Markus Grewe, Federal Ministry for Digital and Transport

# Action Point 1 “Improve water level forecasts”

- ✓ Since 2019, probabilistic 10-day water level forecasts have been published for seven gauging sites with relevance to navigation via the Electronic Waterway Information Service of the Waterways and Shipping Administration ([www.elwis.de](http://www.elwis.de)) to support reliable logistics planning.
- ✓ Since July 2022, the 10-day water level forecasts have been extended to cover 14 days and the 6-week forecasts have been operational.

## Action Point 2 “Establish DAS ‘Climate and Water’ basic service”

- ✓ To provide a uniform data basis within the context of the German Strategy for Adaptation to Climate Change (DAS), the DAS ‘Climate and Water’ basic service has been established at an initial development stage as a permanent task of the executive agencies of the BMDV (German Meteorological Service, Federal Institute of Hydrology, Federal Maritime and Hydrographic Agency, Federal Waterways Engineering and Research Institute).
- ✓ Establish a web portal as central point of access [www.das-basisdienst.de](http://www.das-basisdienst.de)

## Action Point 3 “Provide up-to-date depth information”

- ✓ Provide a depth atlas via the Electronic Waterway Information Service of the Waterways and Shipping Administration ([www.elwis.de](http://www.elwis.de)) as an interim solution
- Since autumn 2022, the creation process for the depth layer of the Inland Electronic Navigational Charts has been tested along three pilot sections. After that, it will be gradually provided.
- Furthermore, the option to establish a low water corridor is currently being examined.
- Plan “(partly) autonomous measuring” action: Optimize the measuring and evaluation processes by using artificial intelligence and unmanned surface vehicles (USVs) (implementation is being prepared, duration 7 years)

## Action Point 4 “Adapt transport strategies/optimize transport and load receptacles”

- ✓ Among other things, shippers have considerably extended contractual relations concerning inland waterway vessels suitable for low water levels; increased storage capacities and optimized handling capacities and crisis management
- ✓ Shippers and shipping companies have commissioned a number of newly build vessels that are suitable for low water levels
- ✓ The conversion of the existing fleet to optimize them for low water levels is supported by the evolved “Sustainable Modernization of Inland Waterway Vessels” financial assistance programme of the Federal Ministry for Digital and Transport, which entered into force on 1 July 2021.
- Adapt availability of vessel types suitable for low water levels

## Action Point 5 “Speed-up implementation of ‘Optimization of laden draughts on the Middle and Lower Rhine’”

- The project area to remove bottlenecks along the Middle Rhine has been divided into three subsections, which all require separate approval procedures:
  - upstream dialogue phase: concluded for all subsections
  - early public participation process: concluded for the subsection „Lorcher Werth“ and „Bacharacher Werth“ as well as for the subsection „Jungferngrund“ and „Geisenrücken“; for the third subsection „Oestrich“ and „Kemptener Fahrwasser“ in 2023
  - scoping procedures: concluded for the subsection „Lorcher Werth“ and „Bacharacher Werth“; for the subsection „Jungferngrund“ and „Geisenrücken“ expected early 2023; for the subsection „Oestrich“ and „Kemptener Fahrwasser“ not yet scheduled
- In 2022, the BMDV and industry representatives agreed to establish an acceleration commission for the project to remove bottlenecks along the Middle Rhine. The commission serves to create transparency and identify approaches to simplify and optimize planning and approval procedures.

## Action Point 6 “Acceleration by acts to adopt measures”

- ✓ The Preparation Act for Acts to Adopt Measures (MgvG) entered into force on 1 April 2020; the project to remove bottlenecks along the Middle Rhine has been included in it.
- The European Commission has introduced infringement proceedings against Germany on the grounds that the Preparation Act for Acts to Adopt Measures violates the EU Environmental Impact Assessment Directive.

## Action Point 7 “Investigate options of hydraulic engineering and water management”

- ✓ In 2022, the Federal Waterways Engineering and Research Institute and the Federal Institute of Hydrology, both executive agencies, carried out studies on hydraulic engineering and water management options, which served to initially determine the potential of different solutions at abstract level.
- Starting in 2023, in-depth studies will be conducted.

## Action Point 8 “Social dialogue”

- Intensify the professional dialogue with stakeholders along the Rhine
- Exchange views and ideas concerning the impact of extreme low water incidents on the different stakeholders and the requirement for action resulting from them (commonalities of ‘multifunctional solutions’, conflicting objectives, etc.)
- Create public awareness and acceptance of necessary future measures to adapt to climate changes along the Rhine

# “Rhine Low Water” Action Plan



## *Provision of information*

1. Improve water level forecasts
2. Establish DAS ‘Climate and Water’ basic service
3. Provide up-to-date depth information



## *Freight transport and logistics*

4. Adapt transport strategies/optimize transport and load receptacles



## *Infrastructure*

5. Speed-up implementation of ‘Optimization of laden draughts on the Middle and Lower Rhine’
6. Acceleration by acts to adopt measures



## *Long-term solution approaches*

7. Investigate options of hydraulic engineering and water management
8. Social Dialogue

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