

# 50 YEARS CHR



## Conference in Wageningen (the Netherlands), 21-22 October 2021

In 2020, the CHR reached the impressive age of 50! Due to Covid, this anniversary was only celebrated a year later. The enjoyment and excitement of finally meeting face-to-face were apparent. Helmut Habersack, Chairman of the CHR, congratulated those present. "In the past, the Rhine was often a real battlefield," he recalled, "but within the CHR, this river is our unifying element."



"Let it flow" is the title of the commemorative booklet on the CHR: its people, its stakeholders, the results, and the future. The accompanying brochure, which you can always keep on hand, delivers facts & figures about the Rhine.

*"A collaborative expert committee is a privilege, but also a necessity, given the challenges of climate change and land use. The extreme rain in July 2021 in the Ardennes and the Eifel took us by surprise. We must work together to find solutions."*

Jaap Sloomaker, Director-General of the Ministry of Infrastructure and Water Management (the Netherlands).

*"The Netherlands has an extended history of floods and land reclamation. Can we live here? Yes, but only if we continue to examine all possible future scenarios and take adaptive measures. #AdaptNow!"*

Peter Glas, Delta Commissioner (the Netherlands)

## About the CHR

The International Commission for the Hydrology of the Rhine basin (CHR) was established in 1970. Six Rhine-riparian states have brought researchers together, to research the Rhine more effectively, from its source to the river-mouth. The CHR has delivered some unique products, such as the monograph of the Rhine, and the Rhine alarm model, which is now the model for scientific collaboration in river basins across the globe.



### The lessons learned from Manfred Spreafico

Manfred Spreafico, former Chairman of the CHR, reflected on the development that the CHR has undergone, and offered some sage learnings for the future:

- Stay flexible, apply science, and remain research-oriented.
- Engage all the stakeholders in research studies as well as solutions and find win-win solutions.
- Select projects that meet the needs of the Rhine riparian states.

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# We cannot manage what we cannot measure

Sustainable management of the river requires good, reliable figures, as well as insights. Therefore new cooperation agreements were signed between the six Rhine-riparian states and with the International Commission for the Protection of the Rhine (ICBR), the Central Commission for the Navigation of the Rhine (CCNR), UNESCO, and the World Meteorological Organization (WMO).

## FROM THE SIGNED RESOLUTION OF THE COOPERATING STATES:

*To continue to support the transboundary and basin-wide cooperation on the basis of the existing statutes,*

*To maintain hydrological knowledge, the exchange of data, methods and information as well as the development of standardized procedures, to update it and to make it available to the general public,*

*To continue to operate and promote applied hydrological research in the Rhine basin regarding the effects of global change (e.g. climate, weather extremes, socio-economic influences) on the water system of the Rhine and the related challenges for man and nature,*

*To adopt the «Strategy of the International Commission for Hydrology of the Rhine Area 2020-2030» and to renew it regularly and to implement it through work programs and*

*To provide the technical support for decisions makers, e.g. through the International Commission for the Protection of the Rhine (ICPR) or the Central Commission for Navigation on the Rhine (CCNR).*

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*“The younger generation demands decisions on major issues such as climate to be made. This requires the scientific knowledge of the CHR.”*

Veronica Manfredi, ICBR and EU

*“The CHR and the CCNR will work together even more intensively on shared issues, such as low tide and climate change, in the coming years.”*

Bruno Georges, CCNR

*“Water is affected by climate change, but also offers solutions for climate mitigation.”*

Abou Amani, UNESCO-IHP

*“The Rhine will be our joint pilot for an SOS: a Status and Outlook System for Hydrology.”*

Johannes Cullmann, WMO

*“What happens in the Alps affects the entire Rhine. Think of the melting glaciers.”*

Günter Liebel, Austria

*“We work together because we have trans-border issues, but also because we can learn collaboratively and from each other.”*

Karine Siegwart, Switzerland

*“This summer’s floods were a painful reminder: we must analyze such events and make farsighted plans.”*

Norbert Salomon, Germany

*“Climate change is on its way. We need knowledge to deal effectively with this reality.”*

Sophie Dorothée Duron, France

*“Collaborative effort is deeply rooted in Luxembourgers because we are such a small country.”*

Tom Schaul, Luxembourg

*“The CHR is not only a commission, but also a community.”*

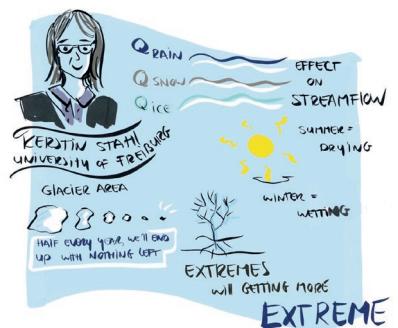
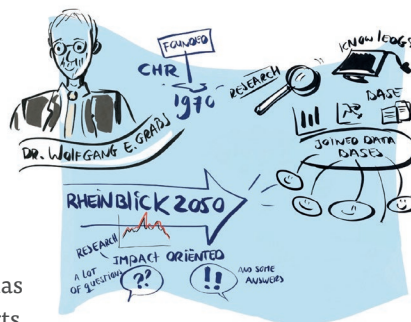
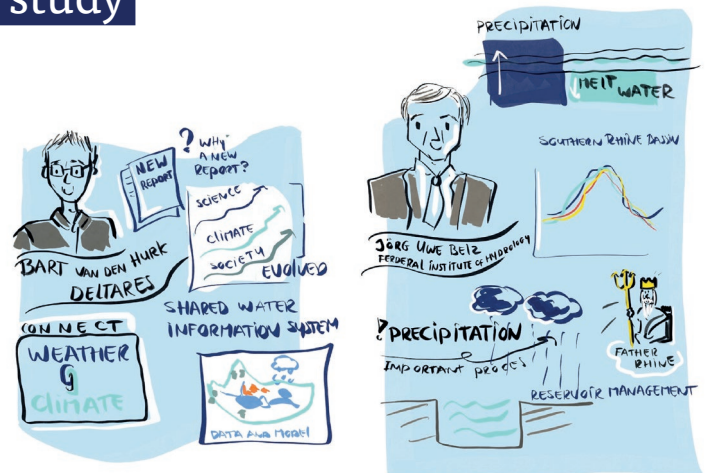
Jaap Sloomaker, the Netherlands





# The results of the CHR study

The CHR has delivered dozens of research studies since 1970. Often, the added value was already apparent purely due to collating the data from the various countries. At the conference, researchers presented the latest results from current research.



### Bart van den Hurk (Deltares and VU Amsterdam)

outlined the context of the CHR research: the climate has already changed. This is shown by the latest IPCC reports. Almost everywhere in the world, temperatures have risen significantly since 1950. The statistics are adrift, which makes predictability difficult. “The recurrence windows of extreme events is no longer reliable as a (data) design criterion”, he concluded, “We need to establish the link between risk and impact, by means of digital twins, for example.”

### Wolfgang Grabs (former Bundesanstalt für Gewässerkunde)

The CHR does not make policies, but supports policy-makers with knowledge, scenarios and options. For example, the CHR has analysed drainage scenarios to feed the discussion on Climate Adaptation in the ICBR. Several scenario studies by the CHR have proven themselves and become (our new) reality. In the future, we need to focus more on the impact of developments.

### Jörg Uwe Belz (Bundesanstalt für Gewässerkunde)

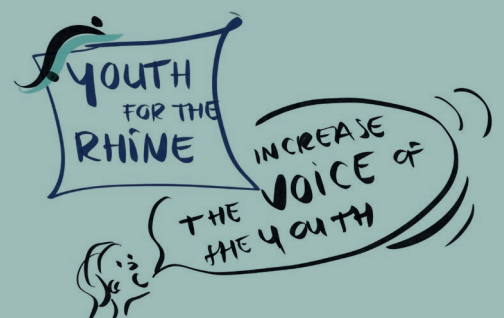
The Rhine discharge regime is changing, but not in the same way throughout. In the southern part, both high

and low discharge has increased, while annual rainfall has remained the same. Management of water reservoirs for electricity generation is probably one cause. In the northern part, only the high discharges have increased, especially within the last 25 years. This is related to the increased rainfall in winter.

### Kerstin Stahl (University of Freiburg)

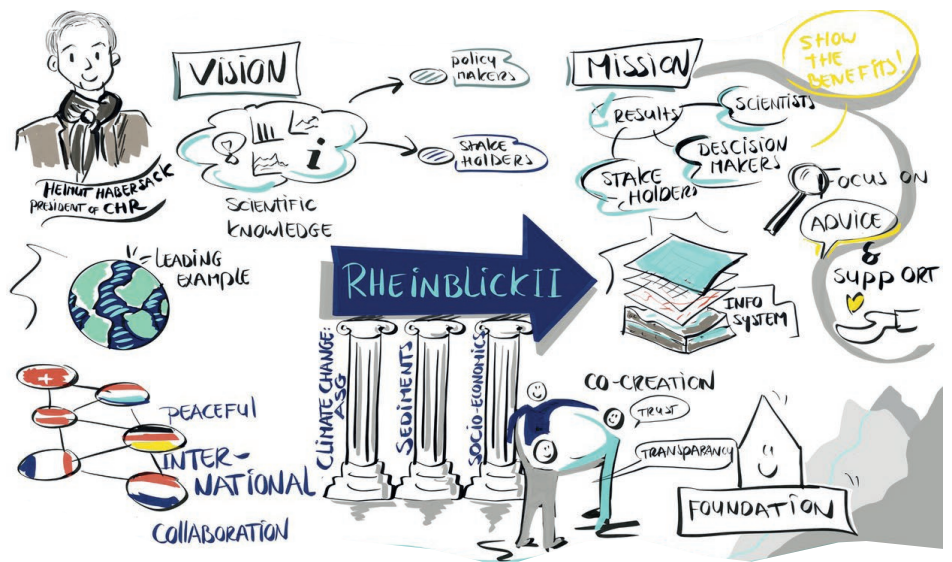
The Rhine is increasingly becoming a purely rain-fed river. Now the discharges consist mostly of rainwater, partly made up of melt-water from snow and glaciers. Due to climate change, the glaciers will have virtually disappeared by 2100, with no more melt-water. The snow melt-water will be halved by then. This has consequences for low summer discharge. The low-water discharge at Lobith may therefore decrease by 25% by around 2100.

**Youth for the Rhine** is an international youth network that deals with major social issues in the Rhine Basin. Not with thick reports, but for example with an online youth consultation and a photo-Story Contest (My Rhine, My Story). In our last minutes, Luuk Somerwill (IHE) encouraged participants to think about how young people are involved in everyone's work. He asked what they could add to our work, and what is preventing us from involving them.



Helmut Habersack presented the CHR Strategy and Work Programme up until 2030.

The CHR reinforces the hydromorphological knowledge base, paying special attention to climate change, sediment and the impacts of socio-economic developments. This results in an update of the Rhine's future prospects: Rheinblick II.



### Judith ter Maat (Deltares)

The amount of water that flows into the Rhine also depends on the water use in the river basin. Irrigation and cooling water are the largest water consumers. Water use is expected to increase in the summer months due to climate change, and the management of water reservoirs is expected to have a greater impact. The data is now supplemented by global, national, regional and local datasets. The research group develops narratives (scenarios) on this basis, for future water use in the river basin.

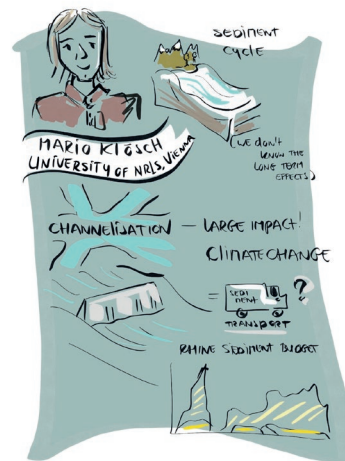
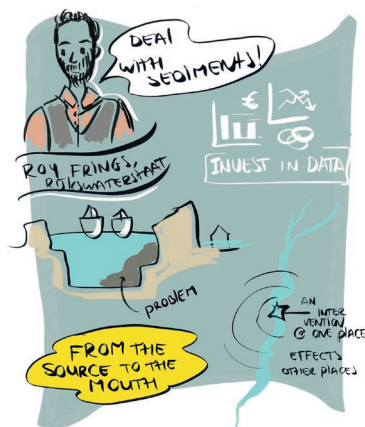
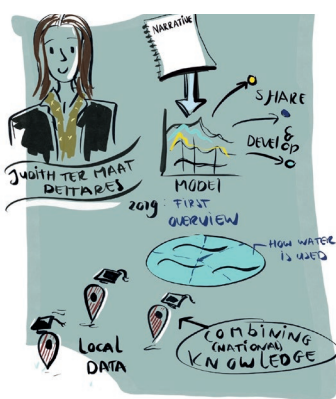
### Roy Frings (Rijkswaterstaat)

Until a few years ago, little was known about the sediment balance of the Rhine. The collation of data from different countries is an important source of information and the

'sinks' of sediment are now apparent. The surprising result of this data is the enormous amount of clay in the Alpine Rhine, that is settling entirely in Lake Constance. The sediment balance data makes the effects of operations such as dredging more predictable.

### Mario Klösch (BOKU, Vienna)

Along the entire Rhine, administrators are struggling to solve sediment-related issues. For example, the best time to remove vegetation along the Alpine Rhine and why the sand-gravel transition is shifting into the Upper Delta. The CHR has identified the most important issues and gaps in knowledge. This has led to recommendations for further investigation. One of the most important issues is the impact of climate change and land use on the sediment regime.



### The CHR Secretary is central to the organisation

After twenty years Eric Sprokkereef (Rijkswaterstaat) left his position of CHR Secretary. Helmut Habersack expressed everyone's sentiments: "Eric was both the face and the heart of the organization, you don't want to lose someone like that!" The attendees thanked Eric for his incredible contributions. Eric himself responded: "It was never an obligation, I felt that it was a privilege." He passed on the baton to Roel Burgers (Rijkswaterstaat).

