International Commission for the Hydrology of the Rhine Basin
Strategy 2020-2030

THE RHINE RIVER

The Rhine, which flows over a distance of 1,233 kilometres, from the Alps to the North Sea, is an important lifeline for Western Europe. A multitude of users depend on the Rhine for an adequate and clean water supply, while maintaining a healthy relationship with the natural environment and its ecosystem. In addition, limiting the risks of an over-supply of water in the event of flooding, or an under-supply of water during drought periods, and managing the previously observed changes to its flowrates, caused by climate and weather changes, require considerable attention. For example, the physical management of the river and associated infrastructure must be considered.

After the Sandoz chemical spill disaster in 1986 near the city of Basel, and the flooding in 1993-1995, there has been considerable improvement in forecasting the transport of water contaminants in rivers, as well as flood waves, which has led to better flood protection. It has also become clear that the runoff regime of the Rhine is changing, most probably as a result of climate change, diverse and ever-changing human activities in the catchment areas, as well as other factors.

The recent drought and long-lasting low-water period, peaking in 2018, were a wake-up call for water managers and water users along the Rhine. Severe restrictions and significant economic difficulties were experienced as a result. Therefore, these changes are now palpable on a real and practical level, and have entered the sphere of public awareness. The question we need to ask is: "What future scenarios should be taken into account, given the physical, climatic conditions, and the current use and management of the river?"

We need to investigate these issues and provide relevant hydrological information pertaining to the present conditions, as well as future scenarios, up until the close of the 21st century. We should also be able to answer the relevant medium- to long-term questions, and decide on what short-term and medium-term actions are required. This is the primary objective of the strategy of the Commission for the Hydrology of the Rhine Basin and the associated work programme for the next ten years.

COMMISSION FOR THE HYDROLOGY OF THE RHINE BASIN

The Commission for the Hydrology of the Rhine Basin (CHR) is an independent scientific body, through which the relevant authorities of the Rhine's riparian states cooperate. The participating countries are Austria, Switzerland (also representing Liechtenstein), Germany, France, Luxembourg and the Netherlands. The CHR was founded in 1970, partly due to UNESCO and the WMO directives, within the context of the ongoing "hydrological decade".

The central task of the CHR is transboundary knowledge development and dissemination in the field of hydrology, which includes the entire Rhine catchment area. It therefore has a substantive focus on the medium to long-term developments. Technical and scientific collaboration have contributed to strengthening the ties between the riparian states, promoting, in its own right, mutual understanding and peace.

For the last 50 years, the CHR has provided advanced international hydrological expertise on the Rhine River, consistently and successfully. This supports the water-related Sustainable Development Goals (SDGs) and Agenda 2030, at a high level of scientific expertise, and on a socio-political level.

Quoted from its statutes, the CHR outlines the following tasks:

- Enhancement of the cooperation between hydrological institutes and services in the catchment area of the River Rhine
- Execution of research on the hydrology of the Rhine area and the exchange of results of these studies
- Support of the exchange of hydrological data and information of the Rhine area (e.g., actual data, forecasts)
- Development of standardized methods to collect and process hydrological data of the Rhine countries
- Support of the cooperation with other international organizations

Since it was founded, a great deal of basic knowledge has been acquired. For example, the Monograph of the Rhine (1978), which has been applied in numerous studies. It has led to widespread application in policy issues and management procedures for a multitude of stakeholders in sectors such as agriculture, nature management and fluvial-maritime transport.

The hydrological aspect was gradually broadened to include topics such as morphology, climate change and socio-economic developments, specifically how these impact water use. Further, this knowledge has been applied to projections for the water supply and discharges in the Rhine catchment areas. Rheinblick 2050, a CHR publication issued in 2010, was an important and notable milestone.

CHR'S VISION

Agreed working and funding structures are available within the Rhine-bordering countries. These allow the CHR to continually generate adequate and future-oriented scientific knowledge pertaining to the hydrology of the Rhine, for the targeted use of policy-makers and stakeholders. The CHR is a leading worldwide example of successful and peaceful international collaboration when it comes to transboundary river basins.

THE CHR'S MISSION

The CHR provides a scientific knowledge base for the hydrology of the Rhine catchment area, conducting both solicited and unsolicited research. The CHR makes these results available to scientists, decision-makers and stakeholders in the region. Consequently, we are focussing on advising politically-active and technically-oriented organizations, such as the International Commission for the Protection of the Rhine (ICPR) and the Central Commission for Navigation of the Rhine (CCNR), to support them with reliable science-based information for the implementation of guidelines, policy, management and decision-making.

Thematic focus 2020-2030

Two themes will be at the centre of the coming decade:

(1) The continuous maintenance of the hydrological-morphological knowledge base

The maintenance and expansion of the general hydrological-morphological knowledge base, is the core principle of the CHR. This includes knowledge-processing in terms of practical relevance, developing access to hydrological knowledge, data exchange and the facilitation of collaboration and communication in the field of hydrology.

(2) The effects of climate change, land and water-use, and socio-economic changes within the riverine system

In the coming 10 years, translating the effects of climate change, variations in land and water use, socio-economic developments, changes in the river's discharge behaviour (including droughts and floods), as well as the changing morphology and sediment transport within the riverine system, will be key issues. This knowledge will be made available for the benefit of the stakeholders who are responsible for the management of the river and its infrastructure. Projects which include these topics will be conducted in close collaboration with the ICPR and the CCNR.