

International Commission for the Hydrology of the Rhine Basin

CHR



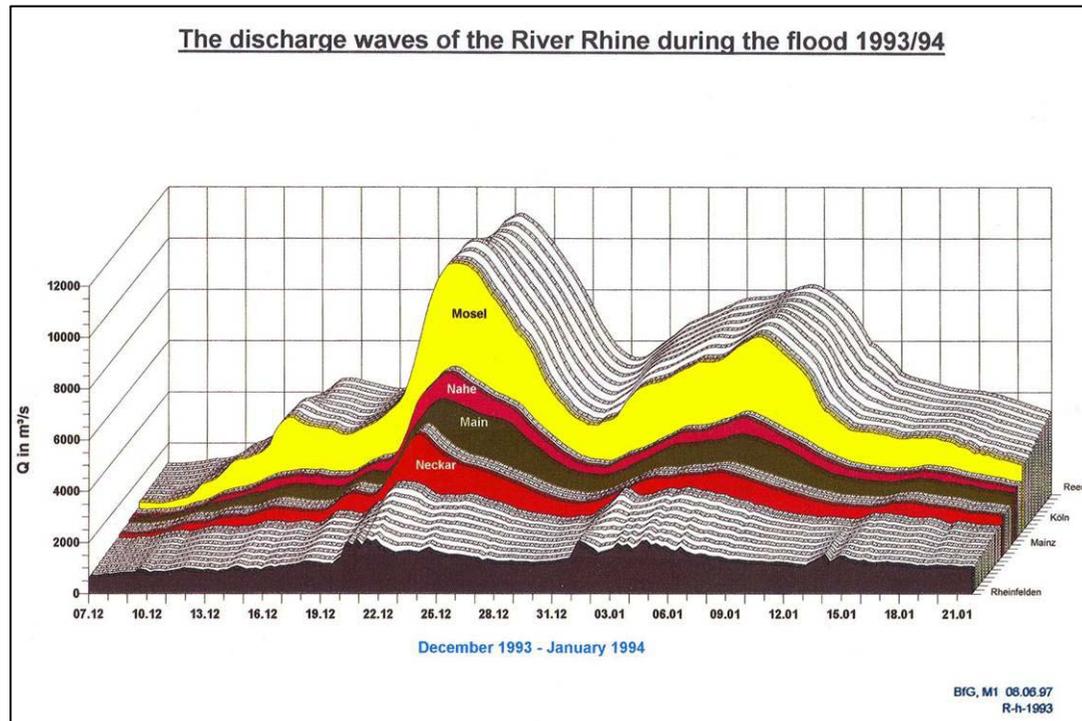
1970

Foundation of the CHR
in the framework of the
International Hydrological
Decade of UNESCO

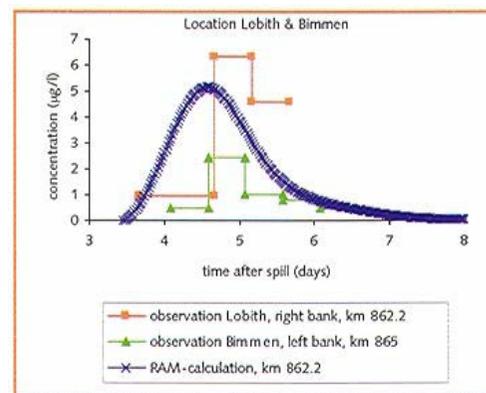
Member states

Switzerland, Austria, Germany,
France, Luxembourg, Netherlands

Mission

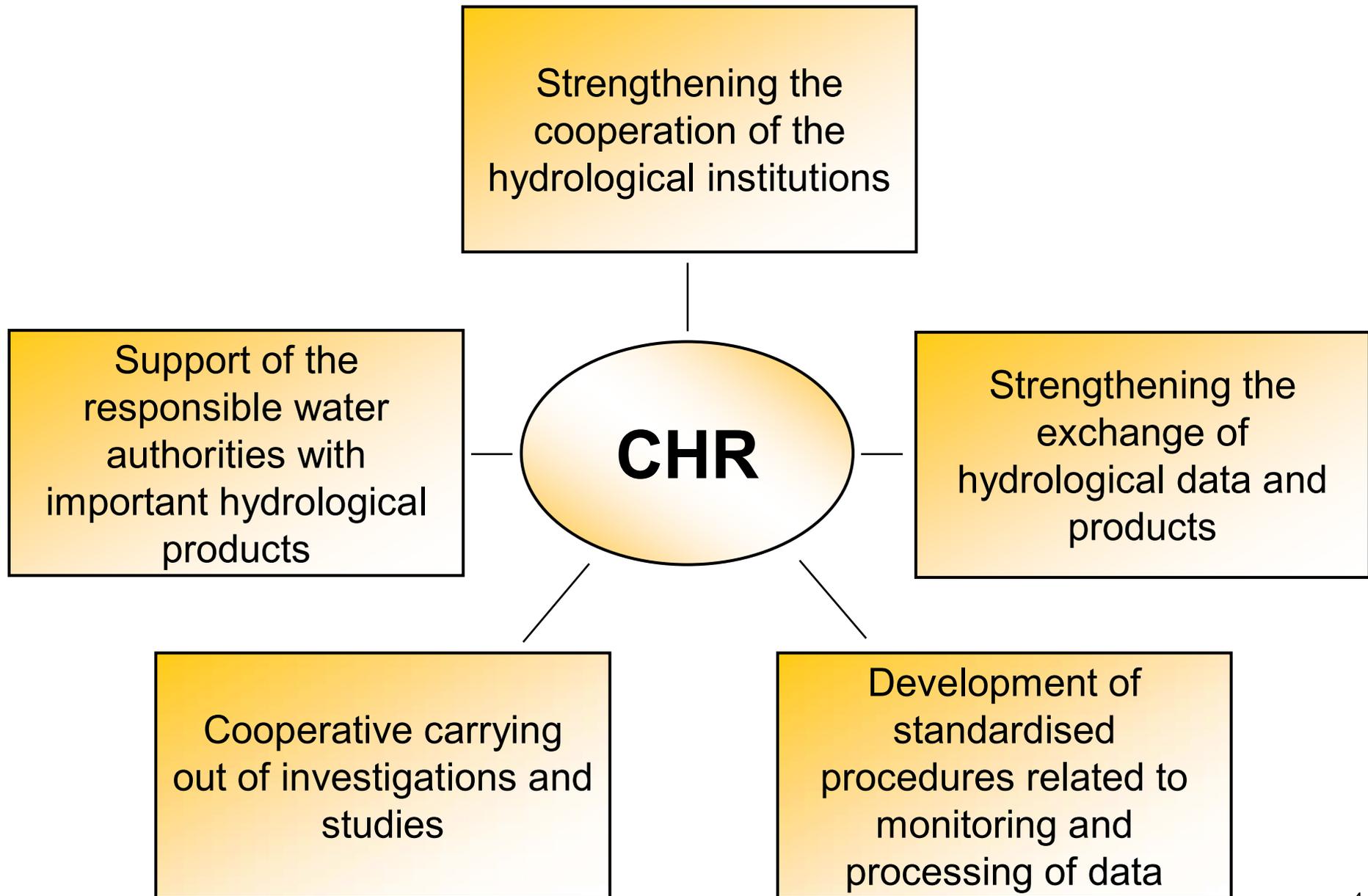


Expansion of the hydrological knowledge in the Rhine basin



Support of decision making in sustainable water resources management by solving of cross-border problems

Tasks

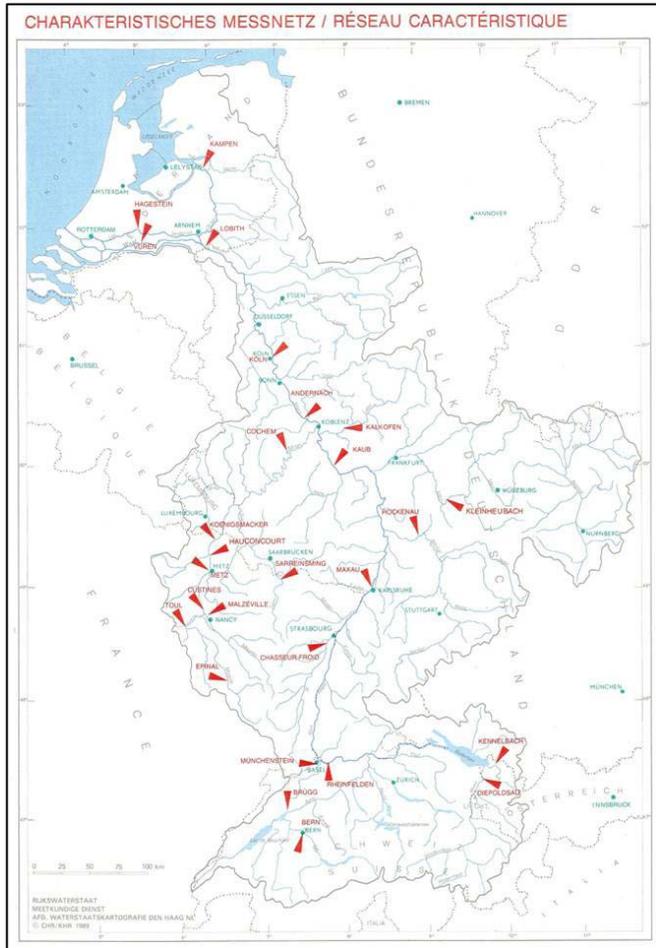


Strengthening the cooperation

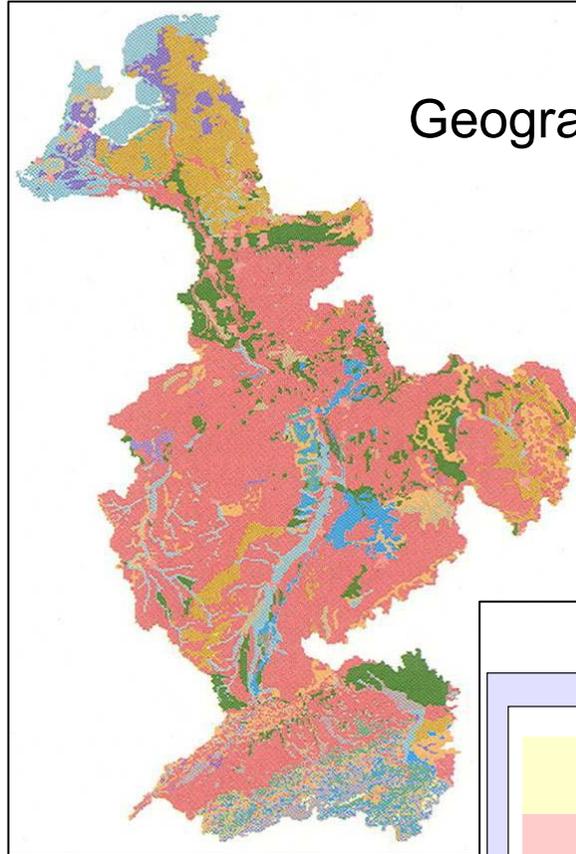
Hydrological institutions in the Rhine basin	<p>CH: Landeshydrologie A: Hydrographisches Zentralbüro, Amt der Vorarlberger Landesregierung D: Bundesanstalt für Gewässerkunde, Hessisches Landesamt F: Agence de l'eau Rhin-Meuse, Dir. régionale d'environnement Lorraine NL: Rijkswaterstaat</p>
Other institutions in the Rhine basin	<p>IКСR ZKR Water supply Universities</p>
International organisations	<p>WMO UNESCO</p>
International commissions	<p>Moselle Danube Elbe Mekong Rio Bermejo</p>

Strengthening the exchange of data and products

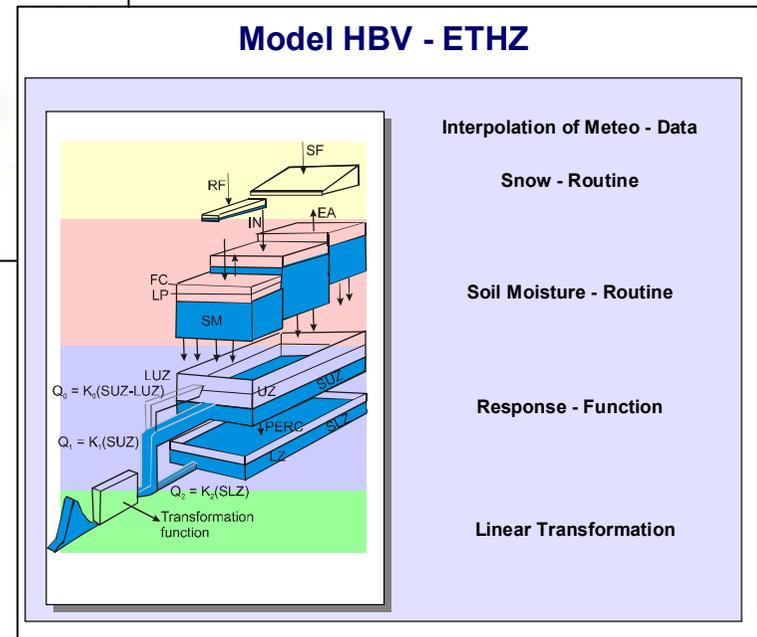
Hydrological data base



Geographic information systems



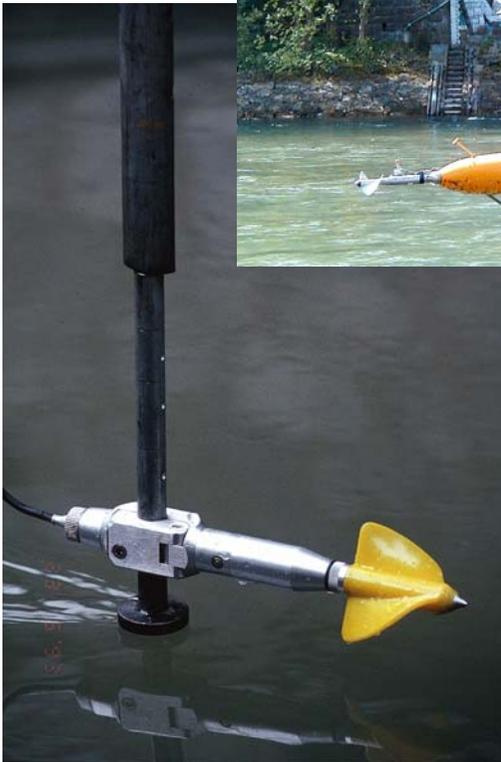
Hydrological models



Provision of high quality data

Discharge

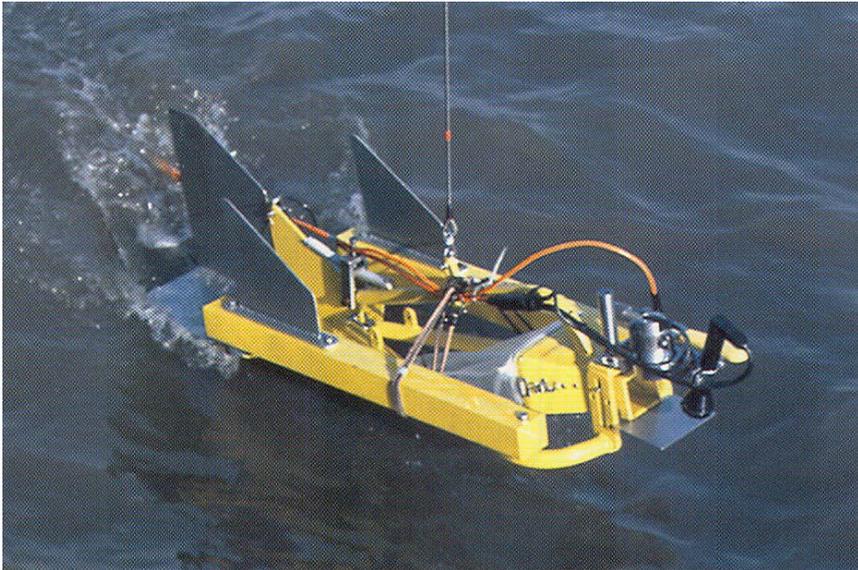
Current meters



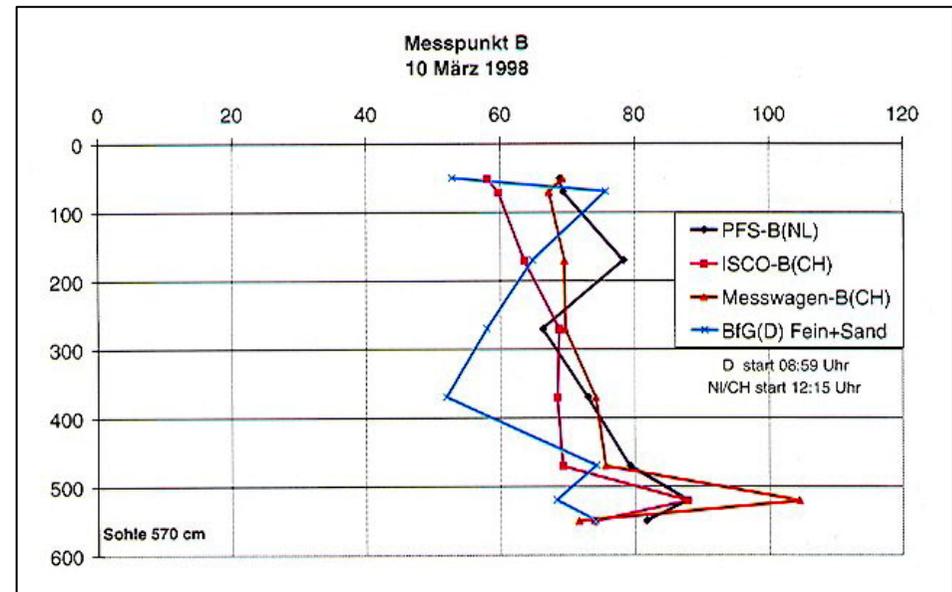
Acoustic Doppler Current Profiler



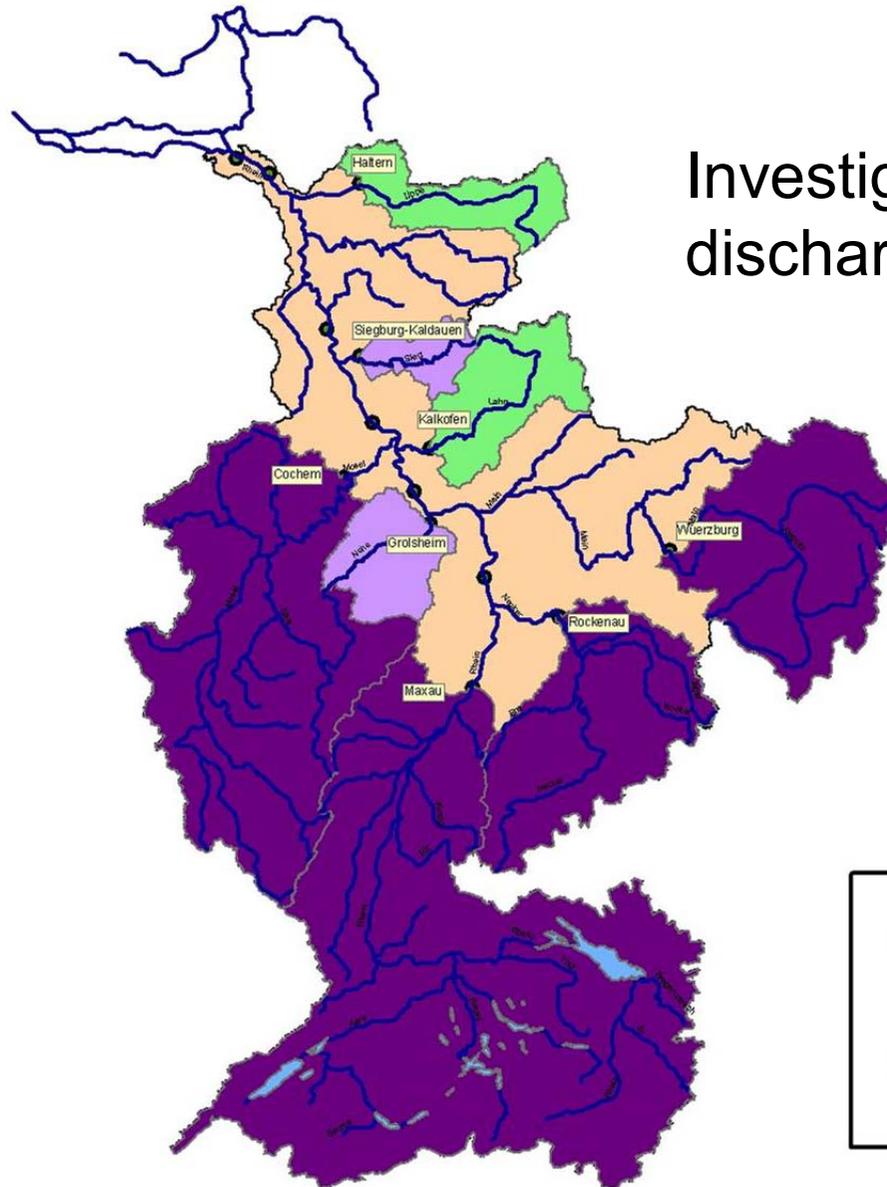
Securing the comparability of data



Suspended sediment concentration



Climate change and water cycle

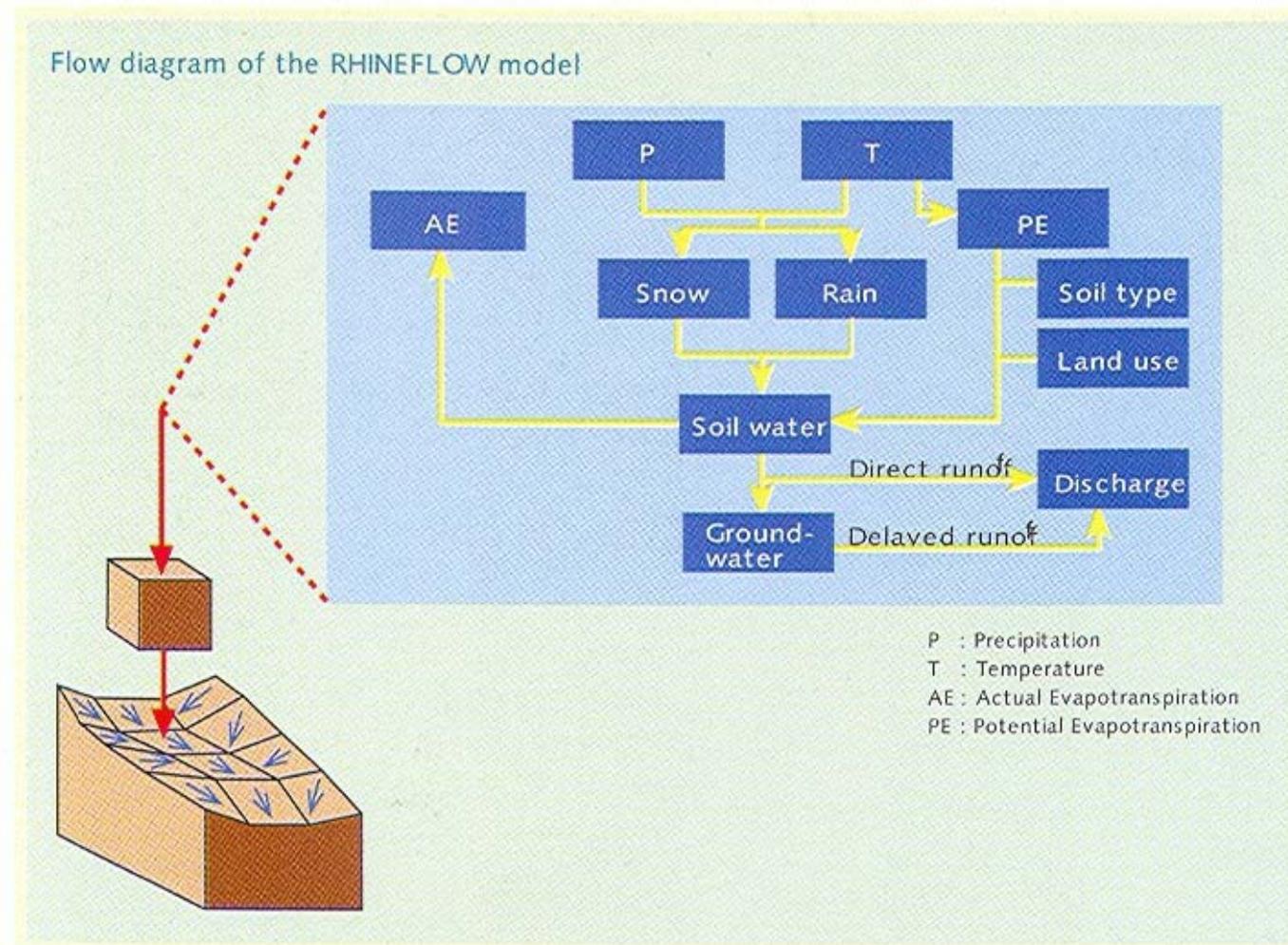


Investigation of long term discharge time series

Legende:

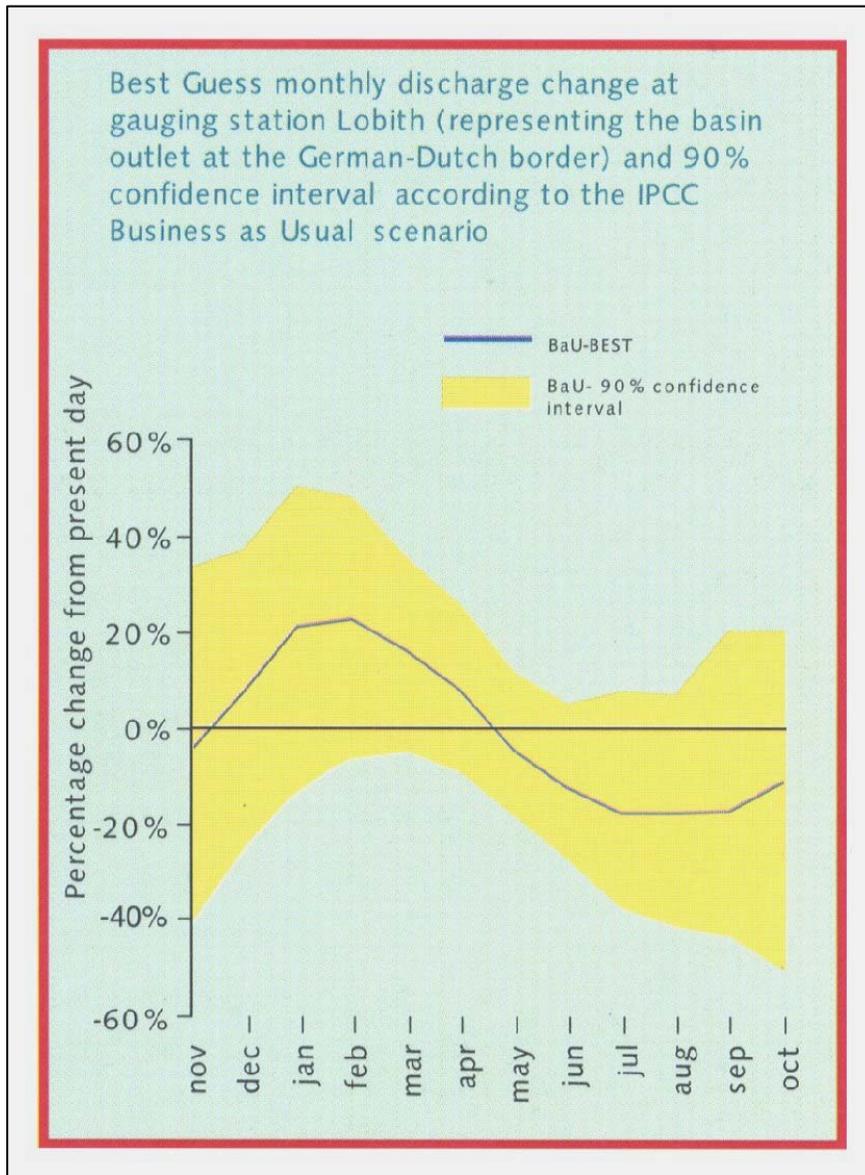
- signifikant, steigend
- nicht signifikant, steigend
- nicht signifikant, fallend
- signifikant, fallend
- Gesamteinzugsgebiet

Impact of climate change on the discharge regime and water resources management



Flow diagram of the meso-scale RHINEFLOW model

Effects of climate change in the Rhine basin

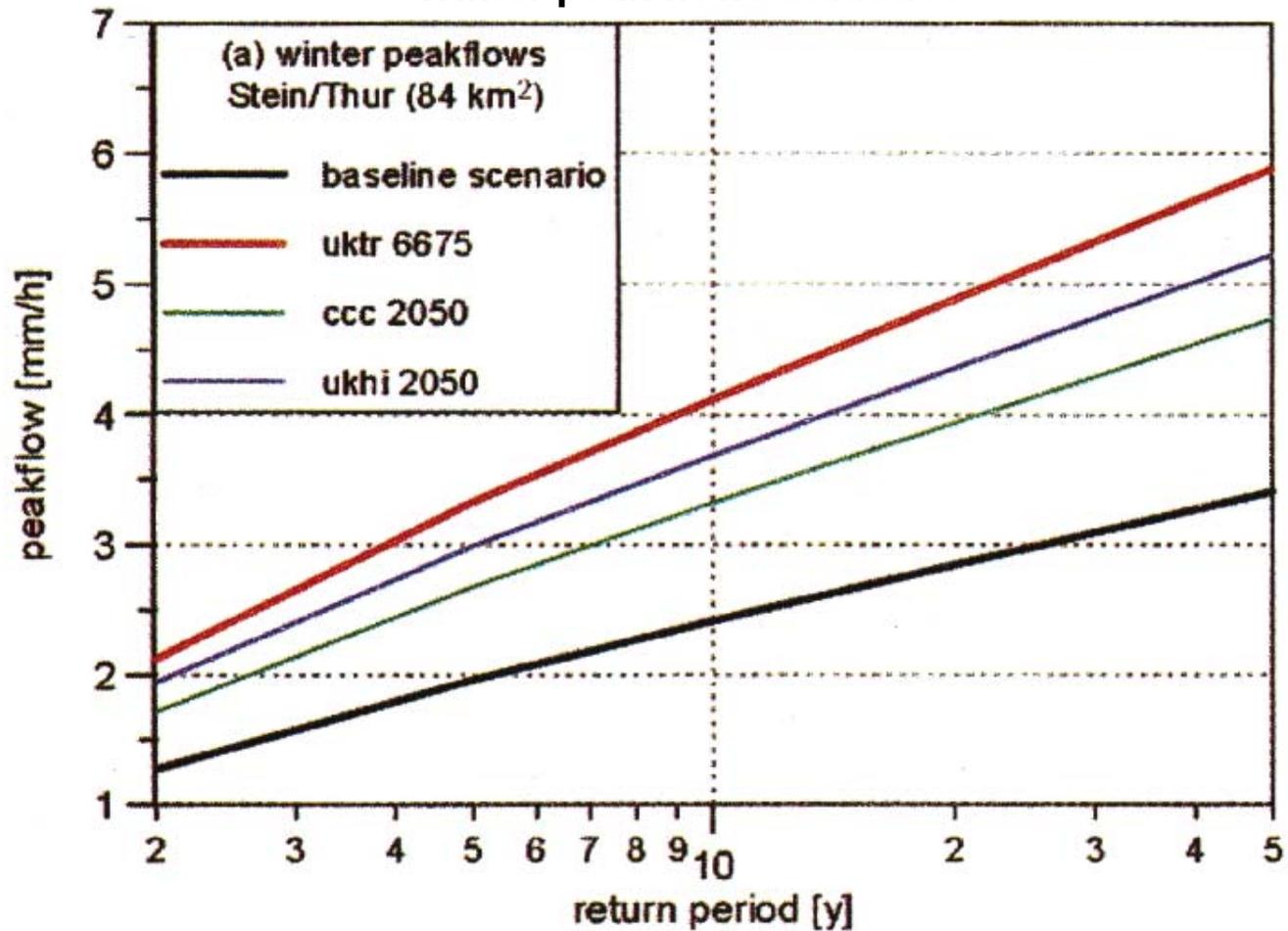


More discharge in winter half year and decrease in summer
Increase of demand for irrigation water

Mountain area

Thur

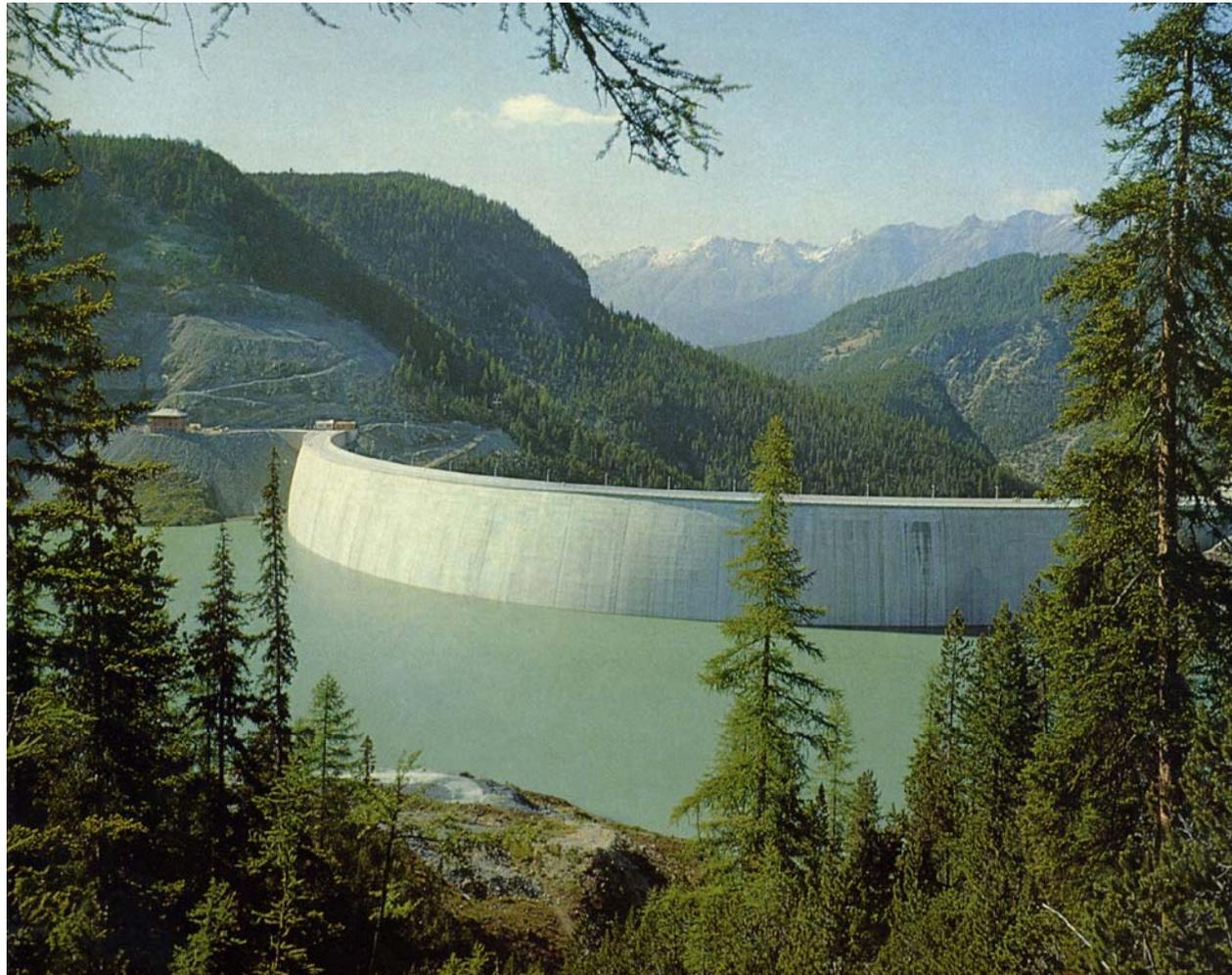
Winter peak flows statistics



Frequency and height of peak flow will increase

Effects of climate change in mountain areas

More hydropower in winter



Effects of climate change in mountain areas

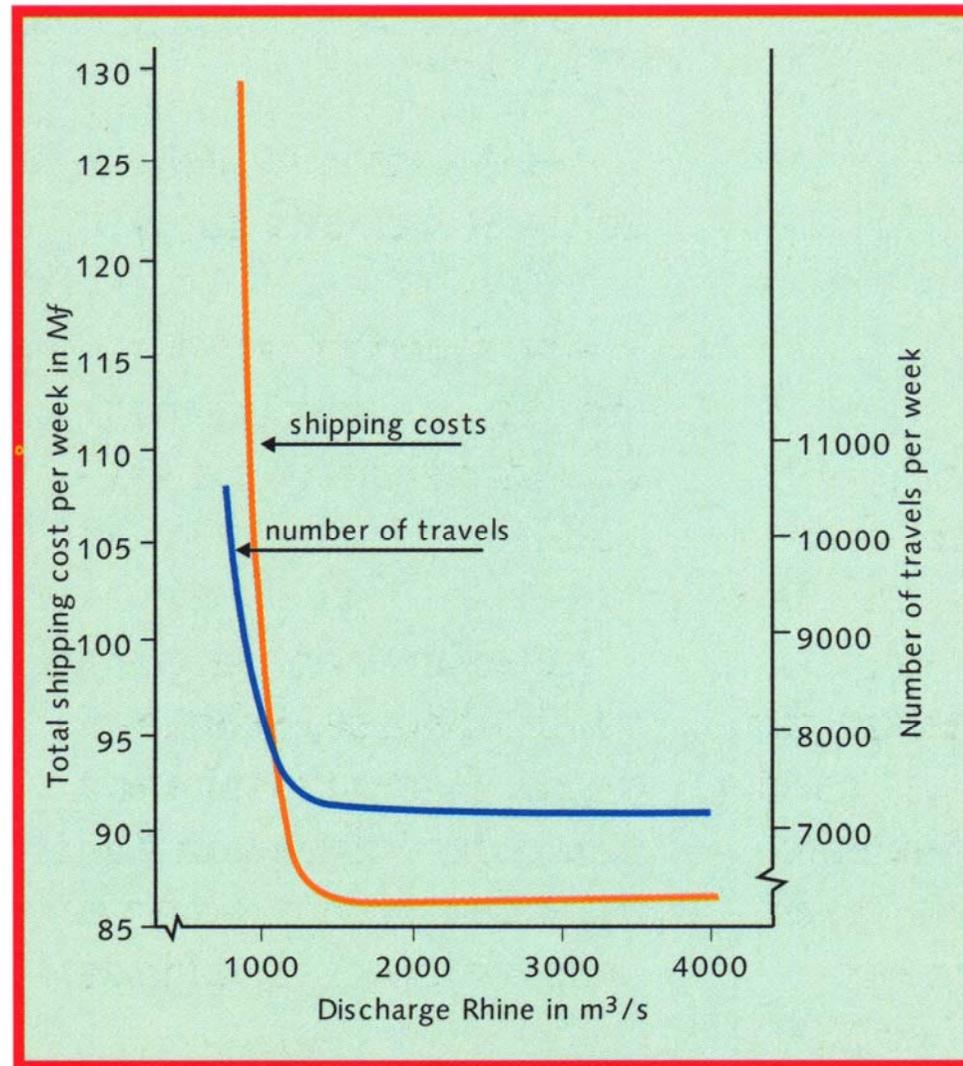


Decrease of winter sport potential
Loss in yearly income

Effects of climate change in mountain areas



Increased frequency of mud flows and land slides



Increase of shipping cost and dredging cost

Policies

Immediate response strategy

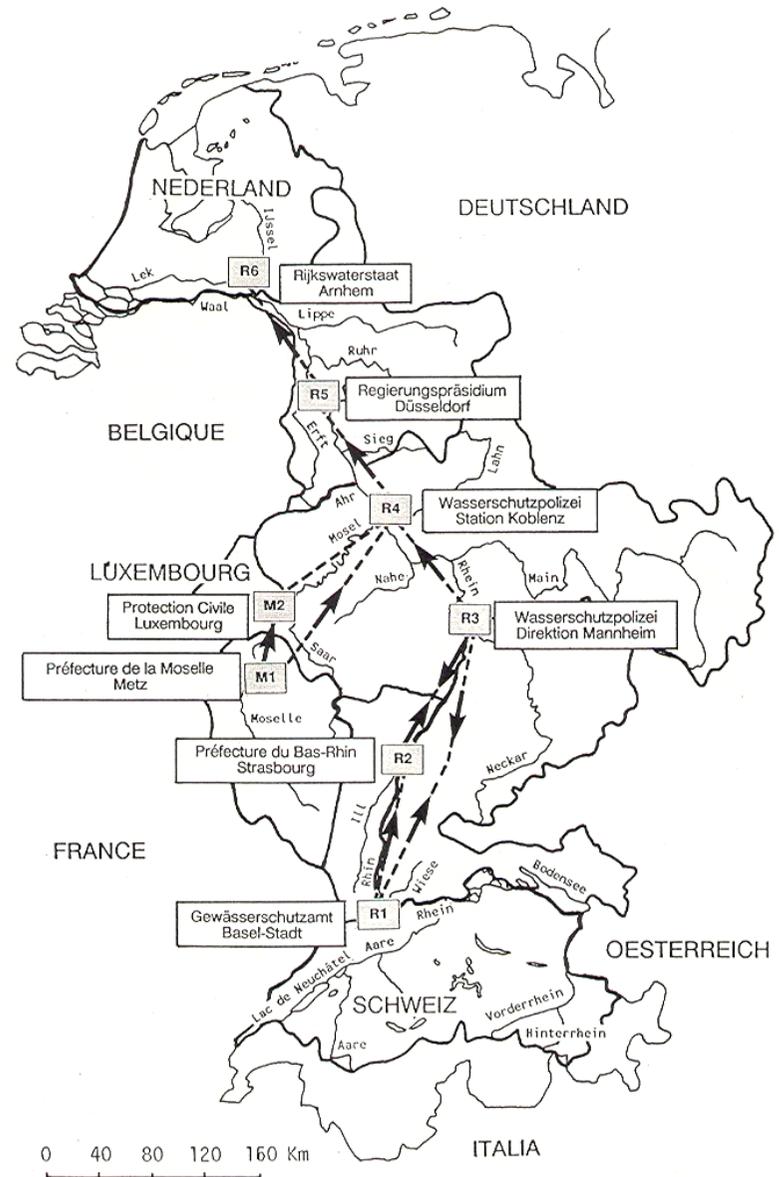
Wait and verify strategy

No regret strategy

Rhine Alarm Model



A tool for the description and management of pollutant transport



Flood Hydrology

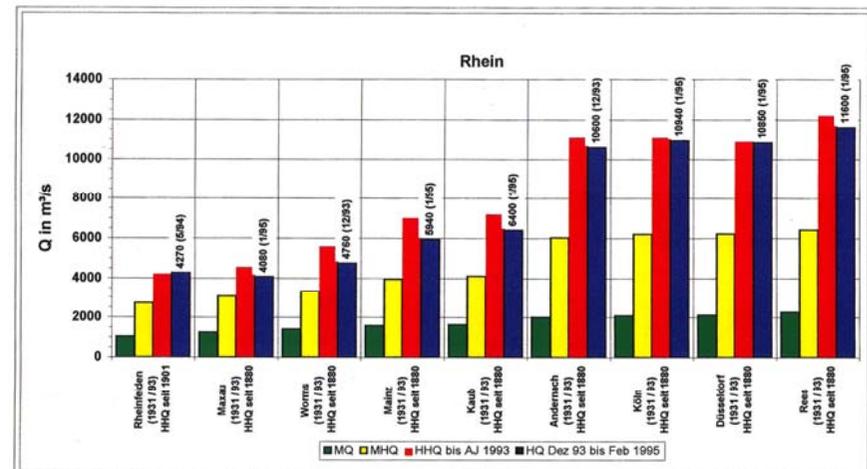
Observation



Analysis

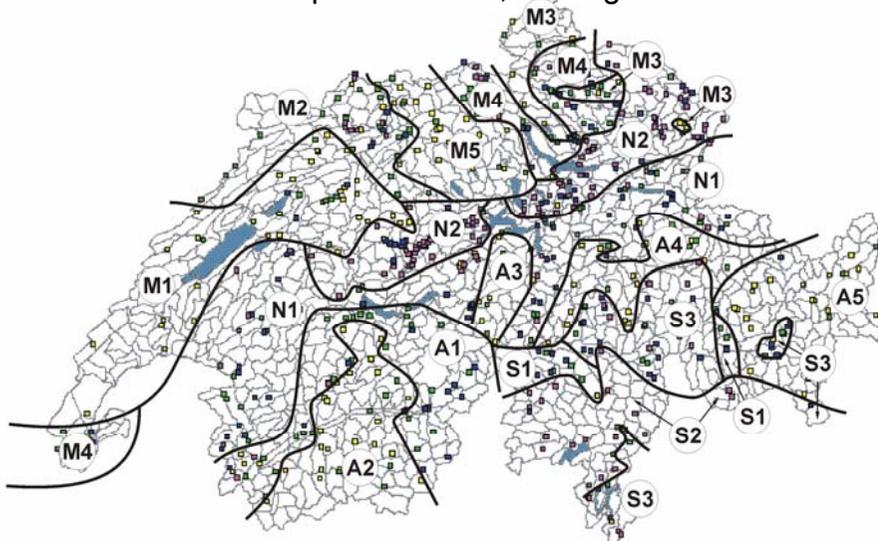
Documentation and analysis of extreme events

Bericht Nr. I-17 der KHR, 1999
Extremereignisse zwischen Dezember 1993 - Februar 1995



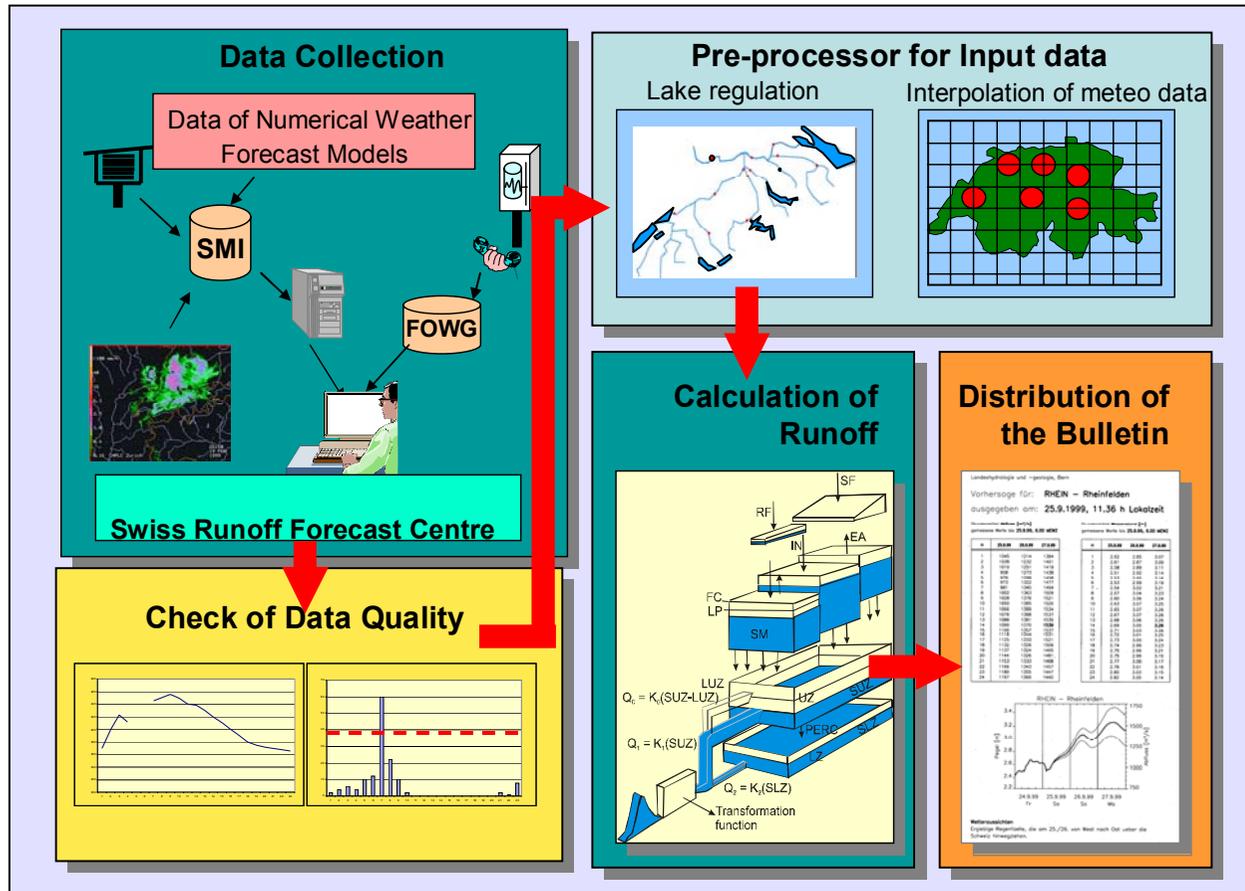
Estimation of flood peak discharges in ungauged basins

Overview and comparison of methods
Aids for the professionals, training courses



Extrapolation

Flood forecast and warning



CHR

C Collective Cooperation

H Hydrological Help

R Rational Results

