



The warming up of the Rhine













Beeldbank VenW

Deventer 1993







Management of the Rhine, I

- Mostly national and subnational
- 1950/ 1963: International Commission on the Protection of the Rhine
 - 1970: Rhine dead
 - 1976: Chemicals Convention and Chlorides Convention
 - 1986: Sandoz disaster
 - 1987: Rhine Action Plan
 - 1993/5: Flooding
 - 1998: Action Plan Flood Protection
 - 2001: Rhine 2020

Management of the Rhine, II

Also: European Union

- 1976: Dangerous substances directive
- Fish water directive (2006/44/EC)
 - E.g. standards for T
- 2000: Water framework directive (2000/60/EC)
 - “Good water status” in 2015
 - (International) river basin management planning
 - Rhine: Rhine water directors meetings

Climate change 1990-2050

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Global	M	M+	E	E+
T	+1 °C	+1 °C	+2 °C	+2 °C
Circ. pattern change	N	Y	N	Y
NI Winter				
Prec.	+4%	+7%	+7%	+14%
NI Summer				
Av. Temp.	+0.9 °C	+1.4 °C	+1.7 °C	+2.8 °C
Prec.	+3%	-10%	+6%	-19%
Pot. evap.-transp.	+3%	+8%	+7%	+15%

Assignment Rhine, I

Client:

- European Environment Bureau
- RWE
- Secretariat of the International Commissions for the Protection of the Rhine as supporting body for the Rhine Water Directors, or
- Environmental Ministry NRW

Answer the following questions for your client:

- What will be the *impact of climate change* on the *temperature* of the Rhine river water and ultimately on the *functions* of the Rhine river?
- What *measures* could be taken to *reduce the heating up* of the Rhine and/ *or the negative effects* of heating up?
- *Who* should take what type of action?

Assignment, general

Activities:

- Analyze stakeholders
- Model the problem
- Draw conclusions
- Give recommendations
- Discuss your own work and the usefulness of the IWRM theory
- Cooperate

See “Additional Information CIE4450” on Blackboard

You work for a client, but do not forget the other “stakeholders”

a) Affected stakeholders

– Organizations, groups and individuals who are affected by the problem or a possible solution

b) Influential stakeholders

– Organizations etc. who may influence the problem or its solution

Sh's can be characterized by their:

Interests and goals

- E.g. nature protection, economic profit
- Official and unofficial

Resources

- Legal powers
- Money
- Political influence
- Information and expertise
- Etc.

A possible typology of stakeholders...

	Water management	Other gov. sectors	Non-governmental
International level			
National level			
Regional/local level			

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