

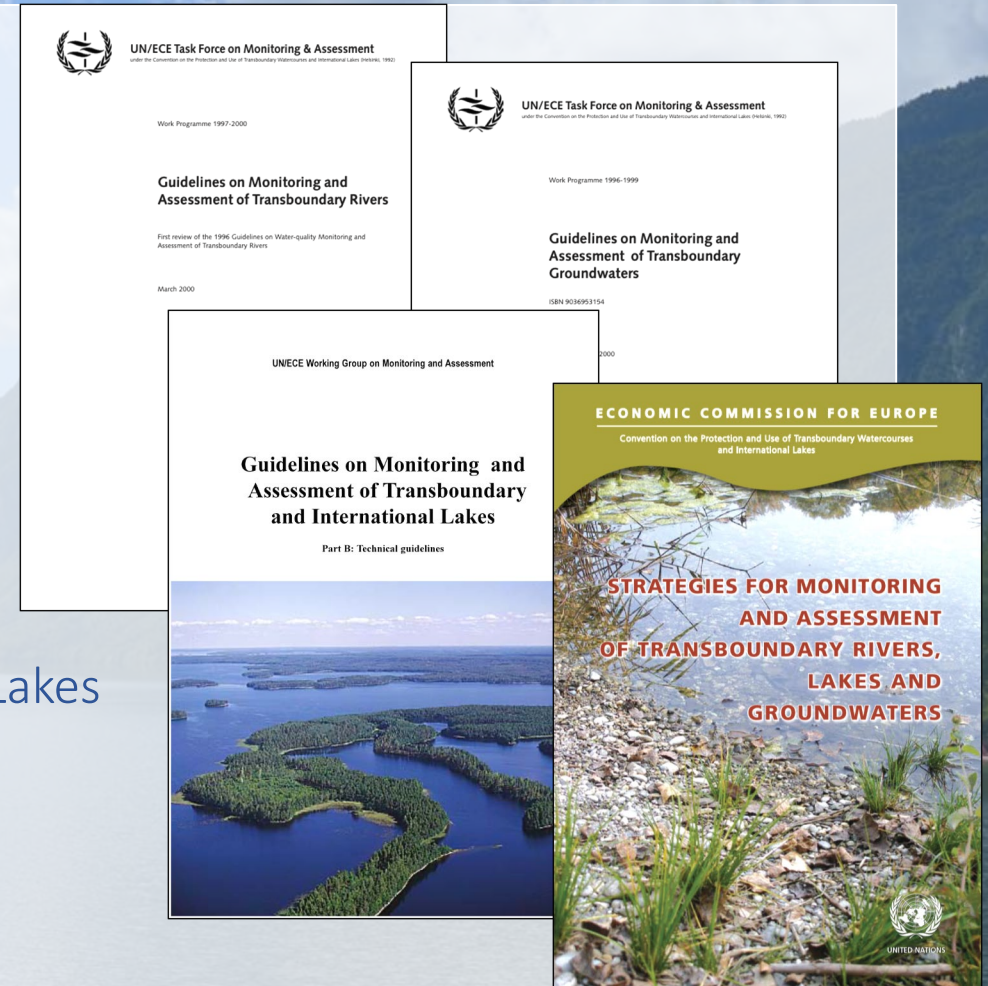
Updated strategies on monitoring and assessment of transboundary waters

Jos Timmerman

Waterframes - The Netherlands

History: Guidelines and strategies

- 1996
 - Guidelines on M&A of Transboundary Rivers
 - Guidelines on M&A of Transboundary Groundwaters
- 2000
 - Guidelines on M&A of Transboundary Rivers
 - Guidelines on M&A of Transboundary Groundwaters
- 2002/2003
 - Guidelines on M&A of Transboundary and International Lakes
 - Part A: Strategy Document
 - Part B: Technical Guidelines
- 2006
 - Strategies for Monitoring and Assessment of Transboundary Rivers, Lakes and Groundwaters



History: Technical documents

- [Biological Assessment Methods for Watercourses](#) (1995)
- [State of the Art on Monitoring and Assessment of Rivers](#) (1995)
- [Quality Assurance](#) (1995)
- [Guidance to operation of water quality laboratories](#) (2002)
- [Monitoring of International Lakes: Background Paper for the Guidelines on Monitoring and Assessment of Transboundary and International Lakes](#) (2002)
- [An inventory of transboundary estuaries and their current monitoring practices](#) (2003)
- [Good Practices for Monitoring and Assessment of Transboundary Rivers, Lakes and Groundwaters](#) (2006)

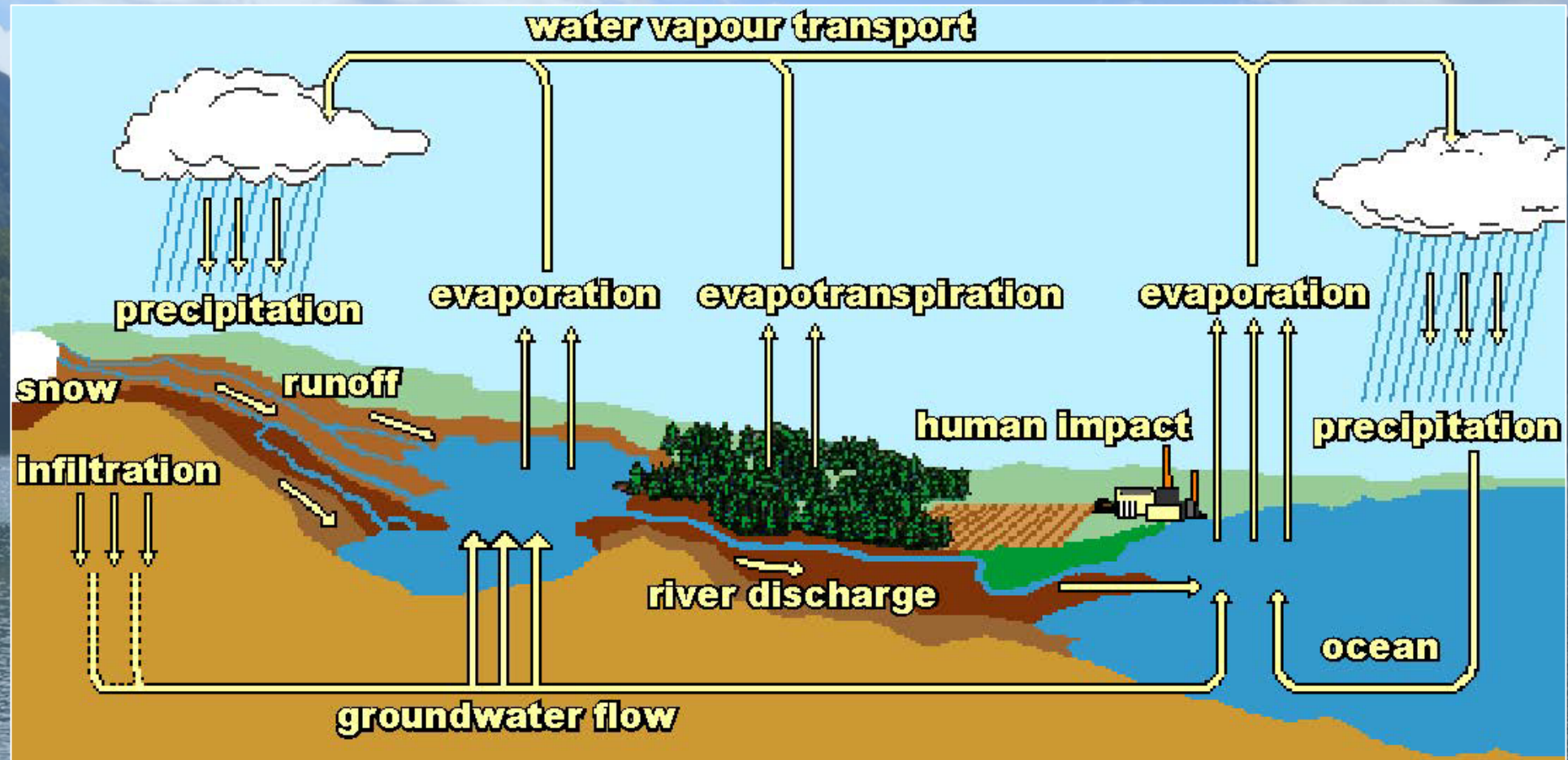
Why do we need information?

- Assessment of the status of water resources and the magnitude of water problems
- Essential for preparing policy actions to achieve goals and targets
- Common basis for decision-making – local, national, and transboundary
- Joint monitoring and assessments build trust, facilitate cooperation and avoid conflict

Driving force – Pressure – Status – Impact - Response



Basin approach



Different purposes for water data

Water data and information management are essential for:

Sectorial water management

- Ecosystem/ environment
- Drinking water supply
- Agriculture
- Energy
- Health
- Transportation

Integrated Water Resource Management

- Local level
- Basin level
- National level
- Transboundary basins
- Regional level

Climate change adaptation and disaster risk reduction

- Floods
- Shortages
- Drought

Decision making

- Development of policies and legislation
- Assessment of policy impacts
- Surveillance of policy implementation

Reporting

- Global
- Regional
- National statistics
- Specific Conventions

Specific decision taking

- Operational management
- Territory management
- Emergency situations

Other water activities

- Regulatory aspects
- Partners
- Public information

Requirements for monitoring and assessment

• Legal basis

- Transboundary agreements
- Global and regional instruments – Water Convention, Protocol on Water and Health

• Institutional set-up

- National and transboundary
- Quality control
- Data exchange

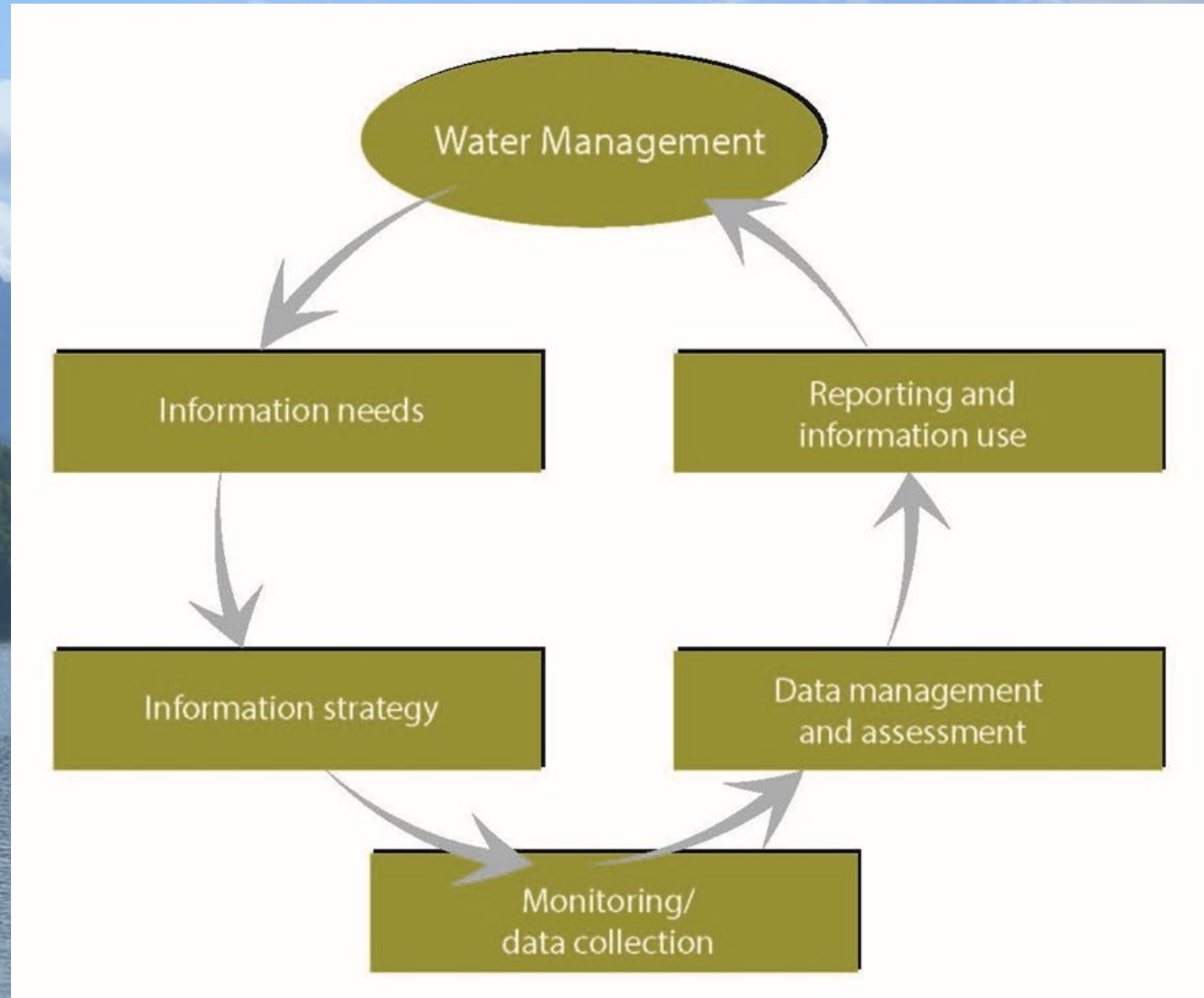
• Adequate funding

- Investment and operational costs
- Long-term commitment

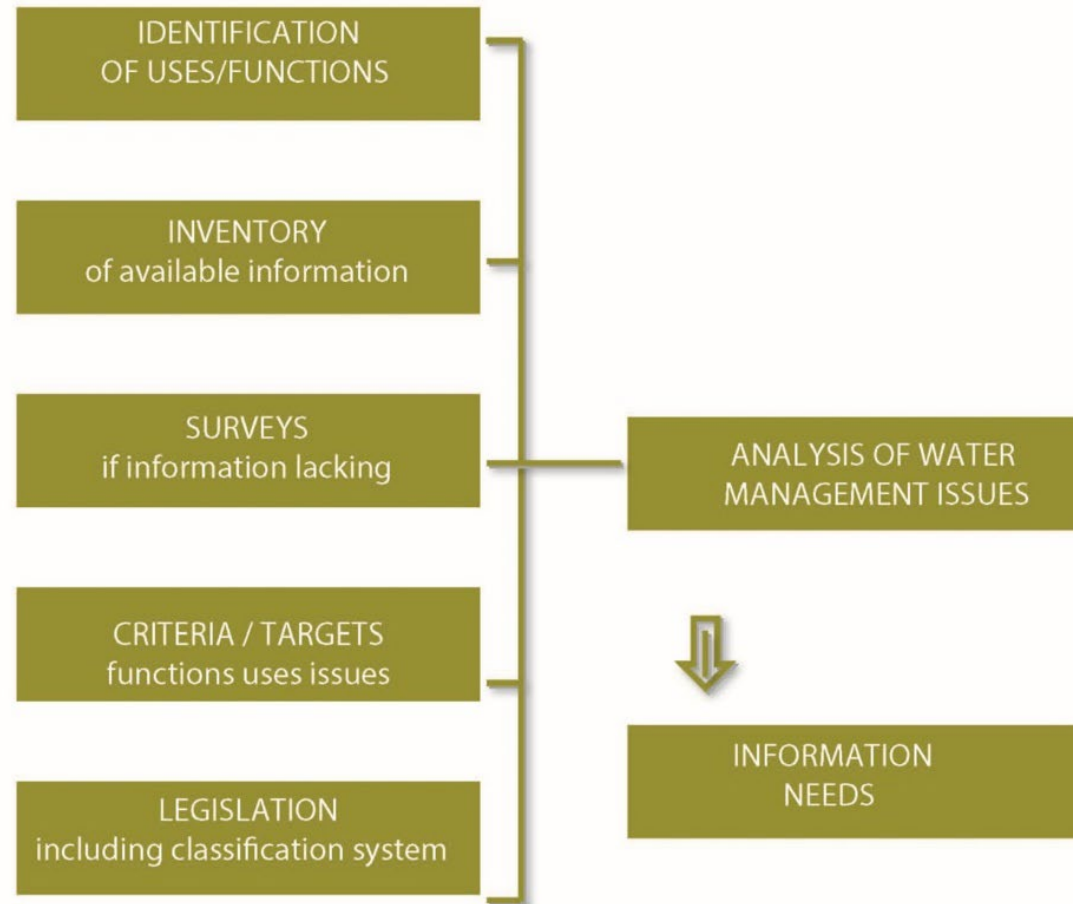
Develop step-by-step approaches

- Do not try to do all at once
- Build on existing elements
- Prioritize efforts
 - Evaluate the situation and focus on the most pressing/urgent/essential
- Models (numerical, analytical or statistical) can provide support
- Use pilot projects for new topics

Monitoring and Assessment Cycle



Developing information needs



Information strategy

How to collect the information?

- Measurements

- Manual samples
- Sensor
- Drones
- Remote sensing

- Inventory

- Modelling

- Citizen science – indigenous knowledge



Monitoring/data collection

- Data quality

- Sampling quality
- Laboratory quality
- ISO standards
- Harmonization

- Data storage

- Database
- Metadata
- Datadictionary
- Data formats

Microsoft Excel - Alles van MWTL Query.xls (Alleen-lezen)

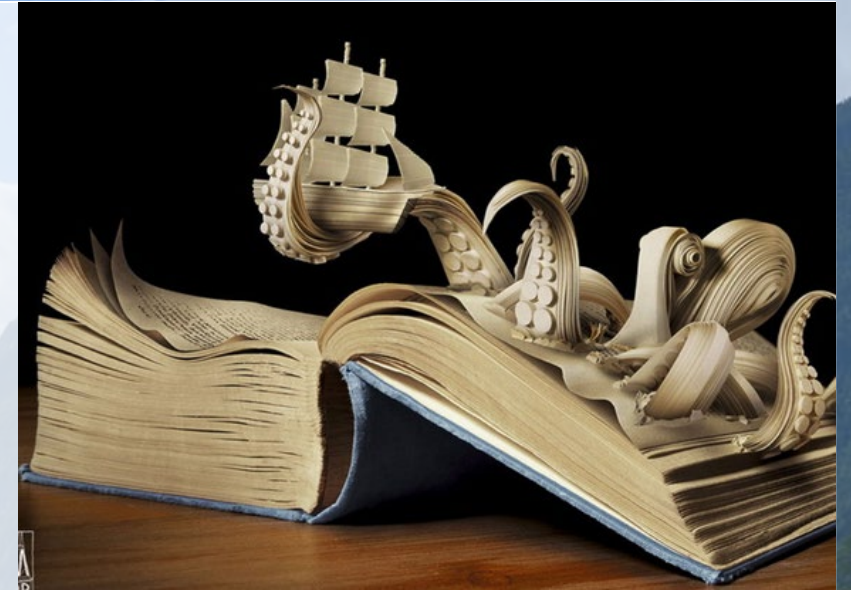
	A	B	C	D	E	F	G	H	I	J	K	L
20	BZV5a	mg/l	LOBPTN	1970	6,8	51 2,8	12,1	6,7	+67E+01	+68E+01	+28E+01	
21	BZV5a	mg/l	LOBPTN	1971	8,9	52 2,8	16,8	9,5	+95E+01	+89E+01	+28E+01	
22	BZV5a	mg/l	LOBPTN	1972	8,5	51 3,6	15,2	8,8	+88E+01	+85E+01	+38E+01	
23	BZV5a	mg/l	LOBPTN	1973	8,6	50 3,8	12,6	8,5	+85E+01	+86E+01	+38E+01	
24	BZV5a	mg/l	LOBPTN	1974	9,8	49 1	15	9,1	+91E+01	+98E+01	+10E+01	
25	BZV5a	mg/l	LOBPTN	1975	6,8	52 3,8	11,2	7	+70E+01	+68E+01	+38E+01	
26	BZV5a	mg/l	LOBPTN	1976	10	52 4,8	17,2	10,4	+104E+02	+100E+02	+48E+01	
27	BZV5a	mg/l	LOBPTN	1977	5	52 2,7	12,2	5,5	+55E+01	+50E+01	+27E+01	
28	BZV5a	mg/l	LOBPTN	1978	3,9	51 2,4	10,3	4,4	+44E+01	+39E+01	+24E+01	
29	BZV5a	mg/l	LOBPTN	1979	4,1	49 1,8	7,1	4,29	+429E+01	+41E+01	+18E+01	
30	BZV5a	mg/l	LOBPTN	1980	3,1	52 1,2	6,8	3,23	+323E+01	+31E+01	+12E+01	
31	BZV5a	mg/l	LOBPTN	1981	3	52 1,2	6,6	3,22	+322E+01	+30E+01	+12E+01	
32	BZV5a	mg/l	LOBPTN	1982	2,5	51 1,1	7,2	3	+30E+01	+25E+01	+11E+01	
33	BZV5a	mg/l	LOBPTN	1983	2,2	52 1,1	6	2,57	+257E+01	+22E+01	+11E+01	
34	BZV5a	mg/l	LOBPTN	1984	2,5	50 0,5	5,7	2,6	+260E+01	+25E+01	+5E+00	
35	BZV5a	mg/l	LOBPTN	1985	2,1	25 1,5	4,3	2,32	+232E+01	+21E+01	+15E+01	
36	BZV5a	mg/l	LOBPTN	1986	2,1	26 1,3	5,7	2,34	+234E+01	+21E+01	+13E+01	
37	BZV5a	mg/l	LOBPTN	1987	1,8	28 1,2	3,8	1,96	+196E+01	+18E+01	+12E+01	
38	BZV5a	mg/l	LOBPTN	1988	2	21 1,3	6,8	2,8	+28E+01	+20E+01	+13E+01	
39	BZV5a	mg/l	LOBPTN	1989	2	3 1	6	2,8	+28E+01	+20E+01	+10E+01	
40	BZV5a	mg/l	LOBPTN	1990	2	5 1	3	1,6	+16E+01	+20E+01	+10E+01	
41	BZV5a	mg/l	LOBPTN	1991	2	4 1	2	1,8	+18E+01	+20E+01	+10E+01	
42	BZV5a	mg/l	LOBPTN	1992	1	5 1	1	1	+10E+01	+10E+01	+10E+01	

Data management and assessment

- Data ownership
- Exchange protocols
- Data analysis and interpretation - data analysis protocol (DAP)
 - Assessment methodology
 - Trends
 - Standard testing - classification

Reporting and information use

- Information dissemination
 - Audience
- Reporting obligations
- Information use
 - Information products should be relevant, accessible and attractive to users
 - DPSIR
- Revision of the monitoring and assessment system



Annexes

- Specific aspects of groundwater monitoring
- Specific aspects of lake monitoring
- Specific aspects of river monitoring
- Specific aspects of monitoring in transitional waters
- International programmes and information sources



Thank you for your kind attention!