Monitoring and Assessment of Transboundary Groundwaters in Europe: the work of UNECE

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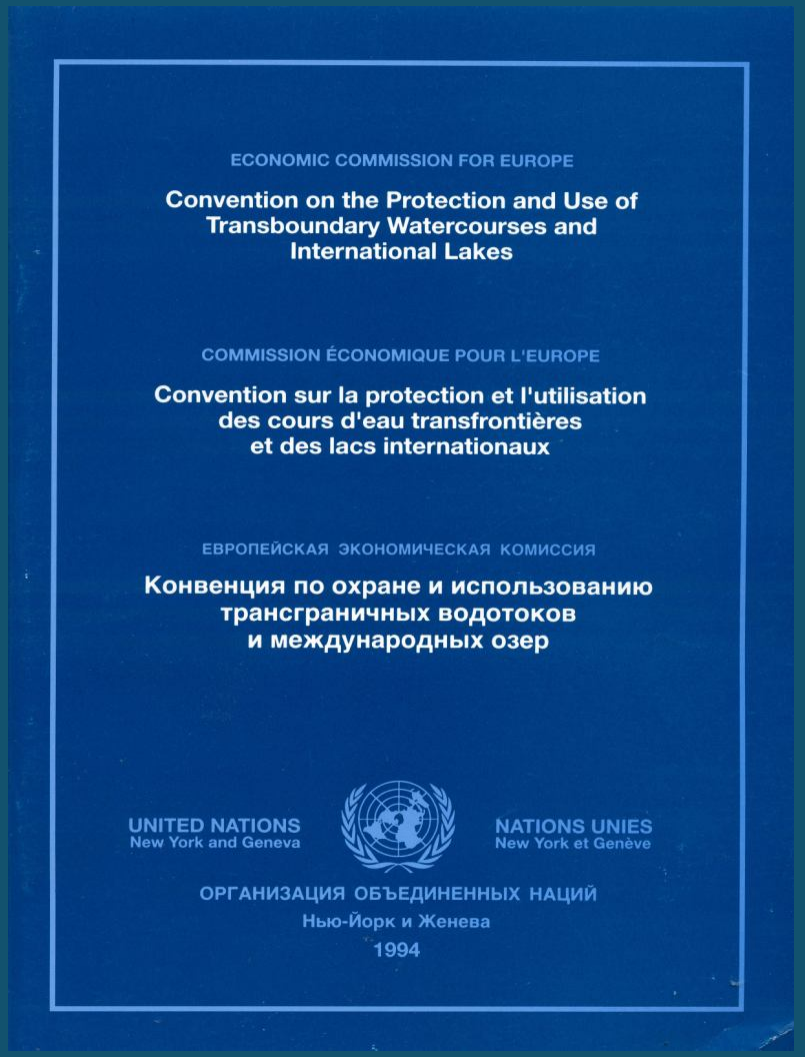
British Geological Survey

Workshop on transboundary aquifers
UNESCO, Paris 29/30 May 2007

UN/ECE
Convention on the Protection and Use of Transboundary Watercourses and International Lakes
Working Group on Monitoring and Assessment
Core Group on Transboundary Groundwaters

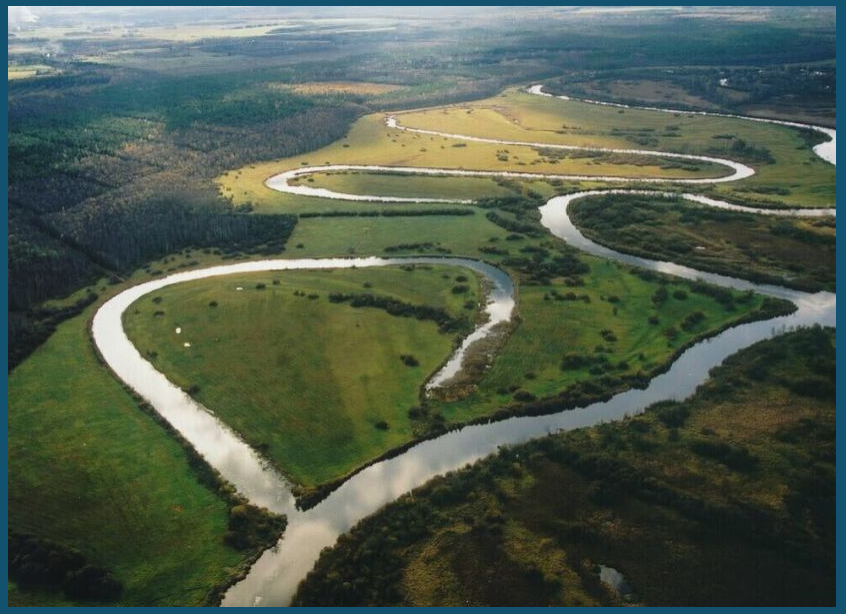
The UNECE Water Convention



- Signed in March 1992
- Entered into force in October 1996
- 34 countries and the European Union have ratified the Convention

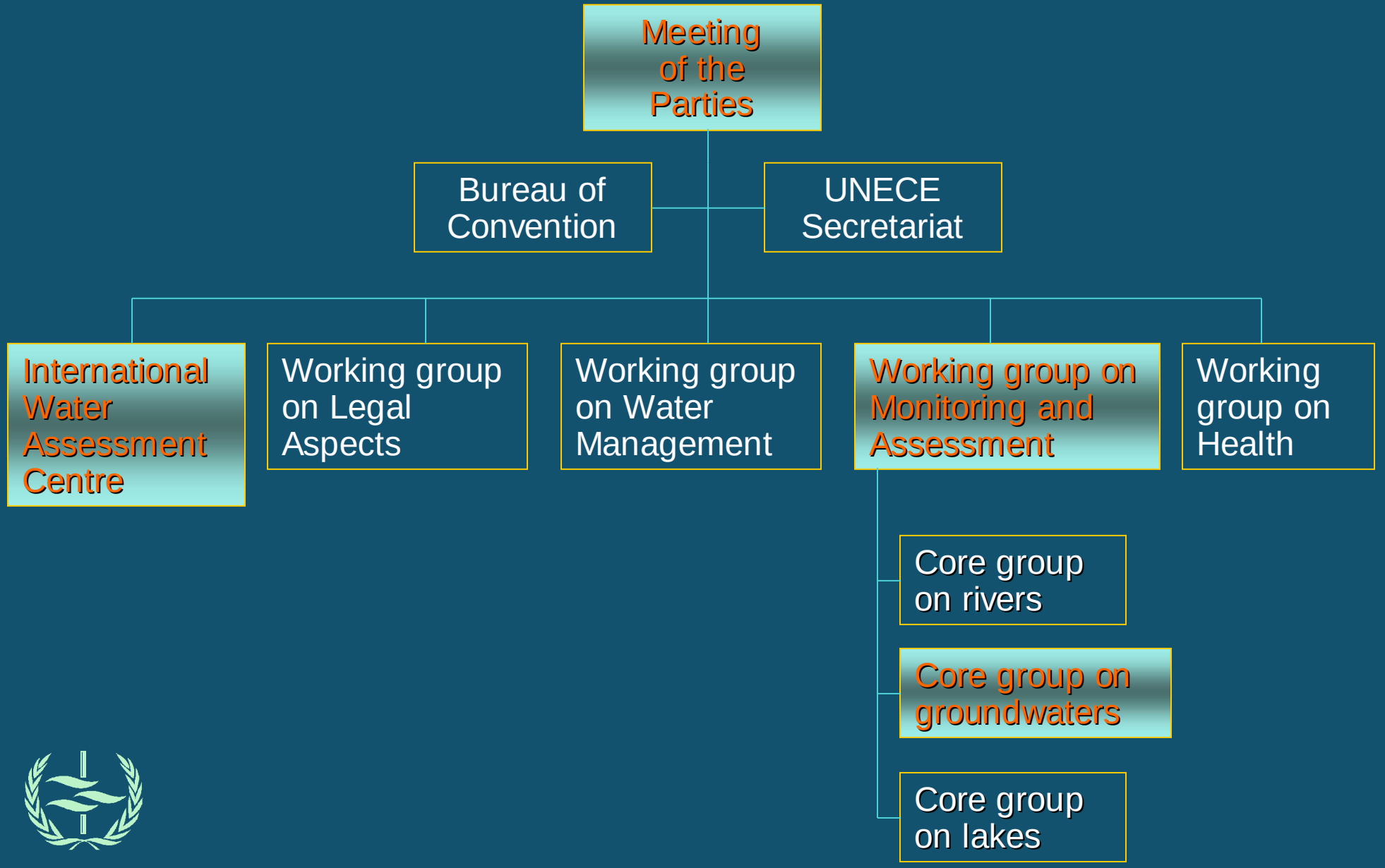

Parties to the Convention

Aims of the Convention



- Protection of transboundary waters - prevent, control and reduce pollution and overuse
- Integrated management of transboundary waters
- Reasonable and equitable use of transboundary waters
- Conservation and restoration of ecosystems

Organisational structure and WGMA



Mandate of the Working group (1994)

give guidance on the implementation
of the Convention
for
monitoring and assessment of
transboundary waters

- methodological aspects
- institutional support
- co-ordination of activities

Groundwater guidelines

objectives

to assist governments and joint bodies to set up and operate systems for transboundary groundwater monitoring and assessment

character

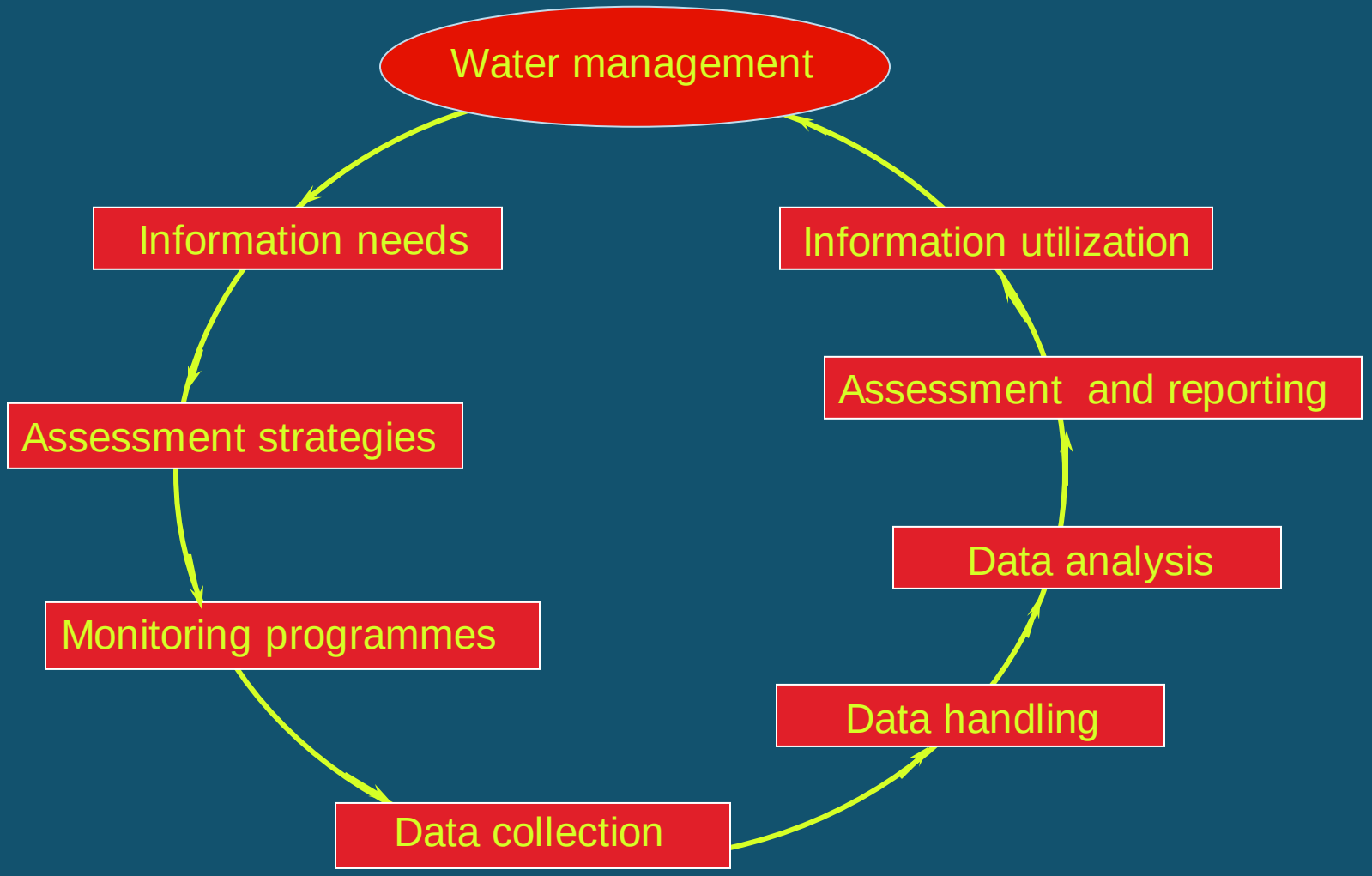
the guidelines are more strategic than technical

structure

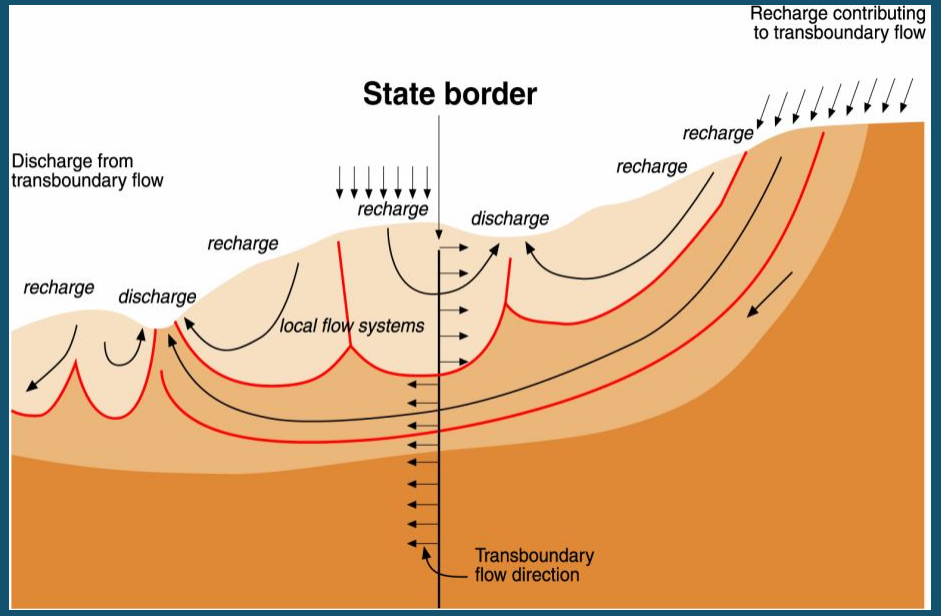
based on the monitoring cycle

Definitions, specific aspects of groundwater monitoring (characterisation of aquifers), integrated approach

The monitoring cycle



Aquifer types



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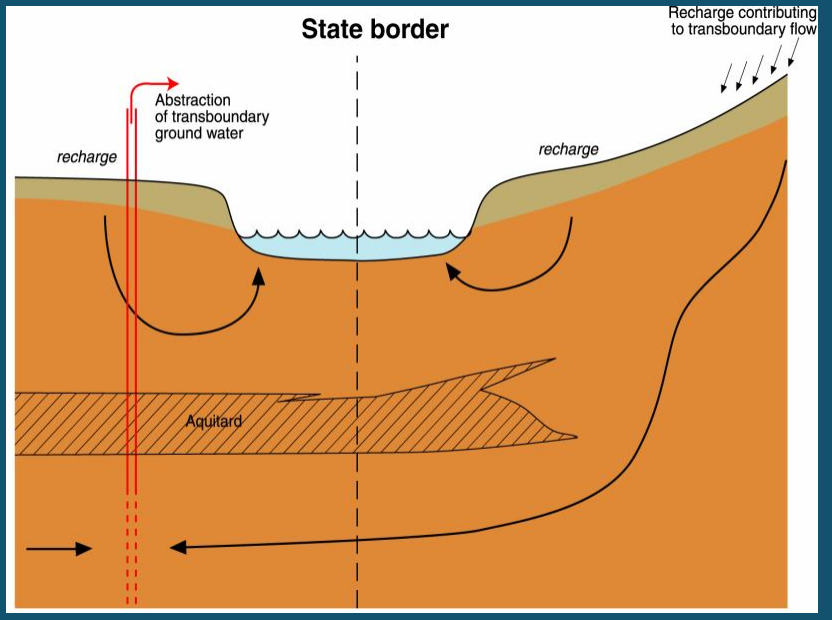


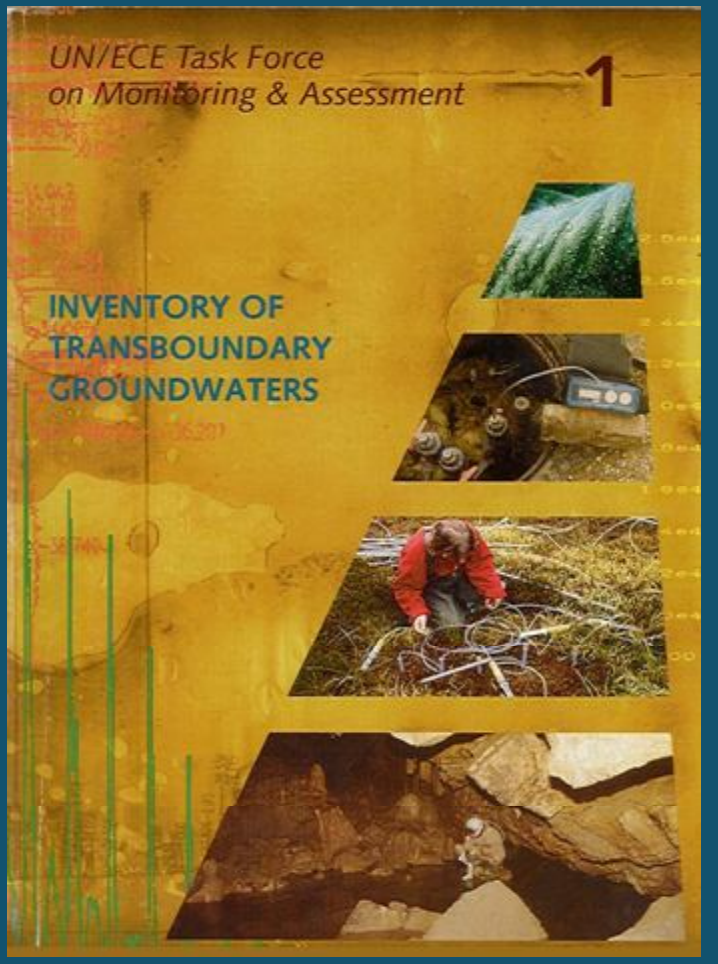
Water uses and issues in the Mures/Maros basin

Functions/uses / Issue/problems	Drinking water	Ecosystem functioning	Fishing	Recreation	Irrigation	Industrial use
Organic pollution	x	x	x	x		
Bacterial pollution	x			x		
Eutrophication		x	x	x		
Pollution by hazardous substances	x	x	x	x	x	
Accidental pollution	x	x	x	x	x	x

high stress medium stress moderate stress

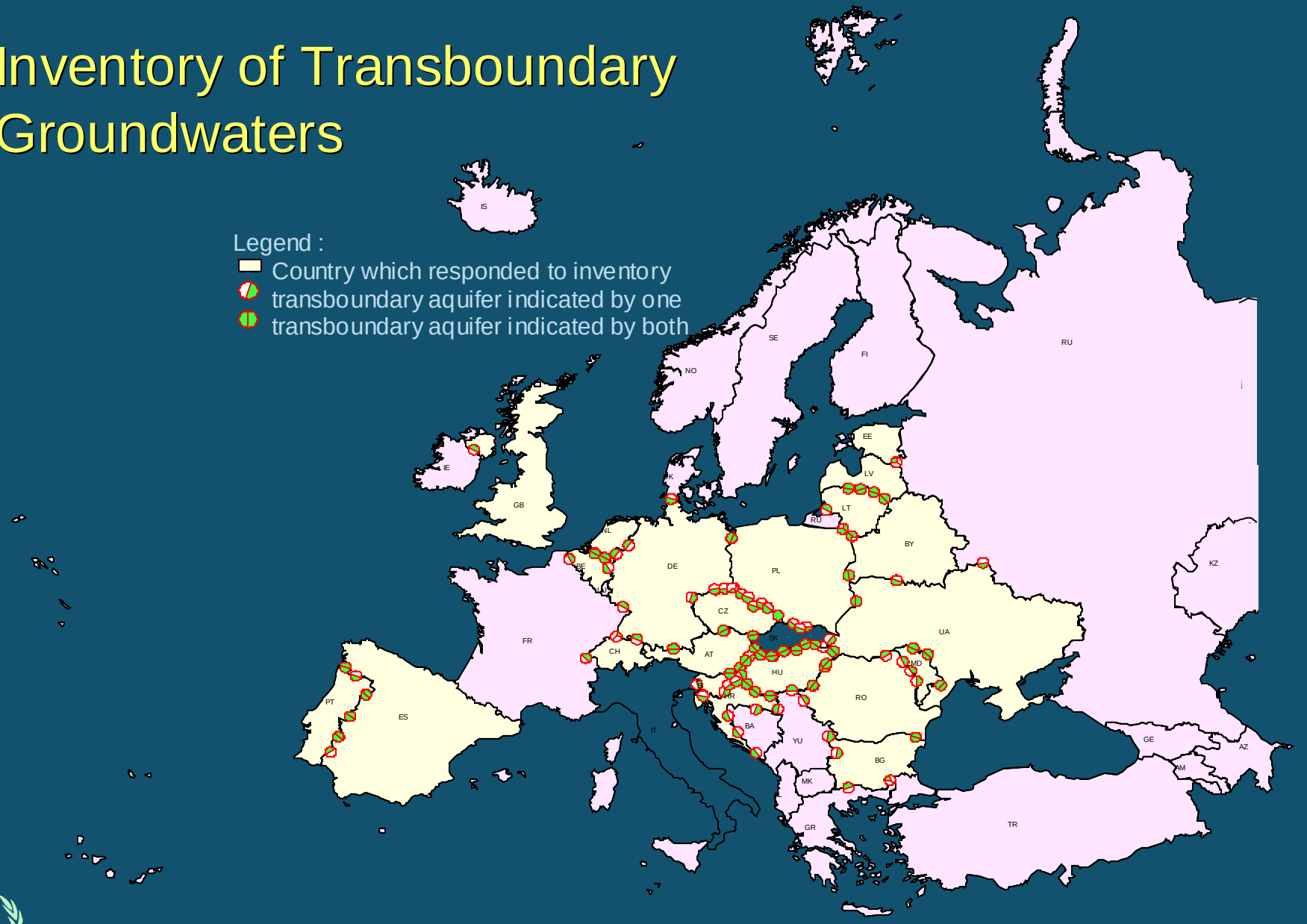
Inventory of transboundary aquifers

- location, extent and type
- uses, problems, pollution sources
- status and trends
- monitoring activities
- legal and institutional aspects
- bilateral agreements



1997, led by Hungary

Inventory of Transboundary Groundwaters



Current activities in groundwater – as requested by the Meeting of the Parties

- preparation of common strategic guidelines for all transboundary waters – *completed and published*
- the Parties decided at their 3rd and 4th meetings to prepare an assessment of transboundary waters – *rivers, lakes and groundwaters*
- this assessment is being prepared for the Belgrade Ministerial Conference on Environment for Europe in October 2007
- pilot projects for guideline implementation – *Aggtelek Karst (HU/SK, under way) and Bug river basin (PL/UA/BY, proposed)*

Assessments –rivers and lakes

- assessment of the water quality situation and monitoring programmes
- proceeding well for rivers and lakes – led by Finland with network of supporting colleagues providing data
- will be comprehensive for all of Europe
- if the smallest are excluded, this still leaves 130 transboundary rivers and lakes

Assessments - groundwater

More selective approach for groundwater:

- the Balkan region – led by BGS (John Chilton)

- the Caucasus and Central Asian Republics - led by Slovak Hydrometeorological Institute, SHMU (Peter Roncak)

Meeting of the groundwater core group of the WGMA in Paris in April 2006, hosted by UNESCO

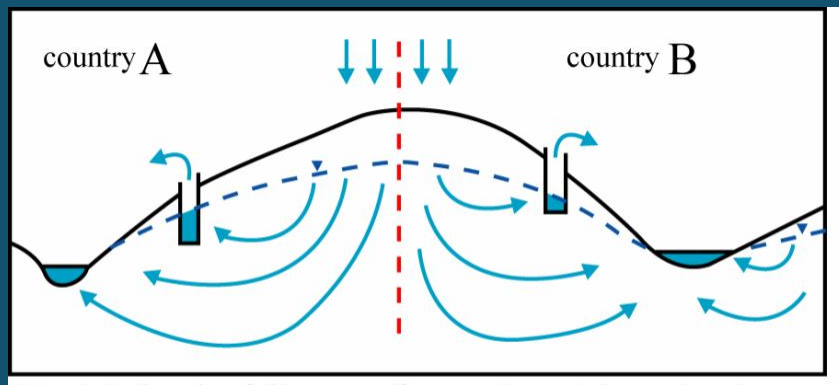
Scope of assessment agreed, questionnaire designed

Approved by the WGMA in May 2006, distributed in July 2006

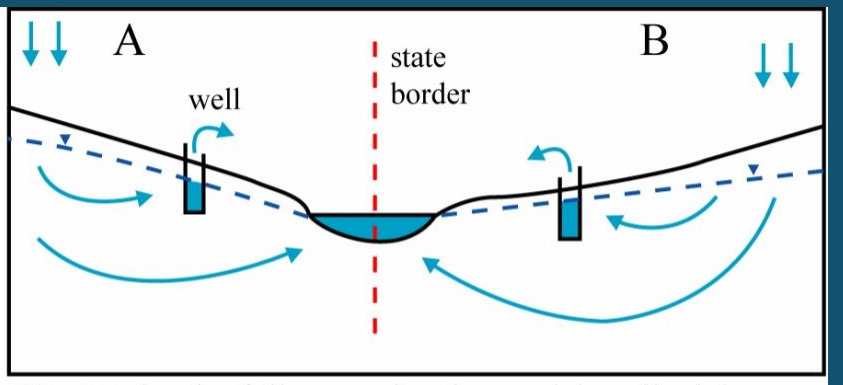
Collaboration with INWEB established for SEE region

Workshop in Thessaloniki in April 2007

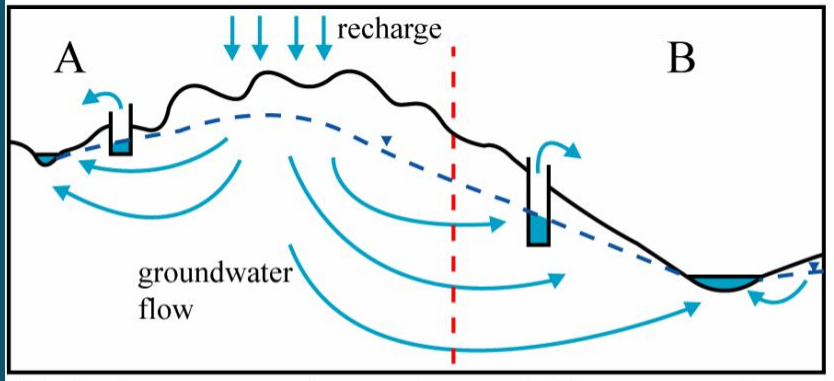
Types of transboundary aquifers



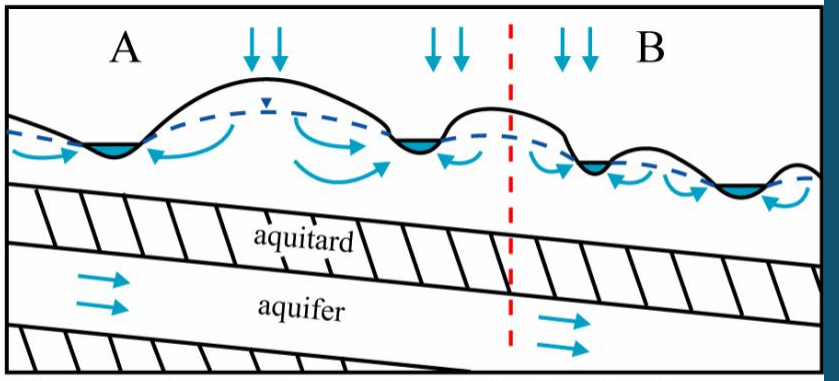
(1) state border follows surface water catchment and groundwater divide, little transboundary groundwater flow.



(3) state border follows major river or lake, alluvial aquifer connected to river, little transboundary flow.



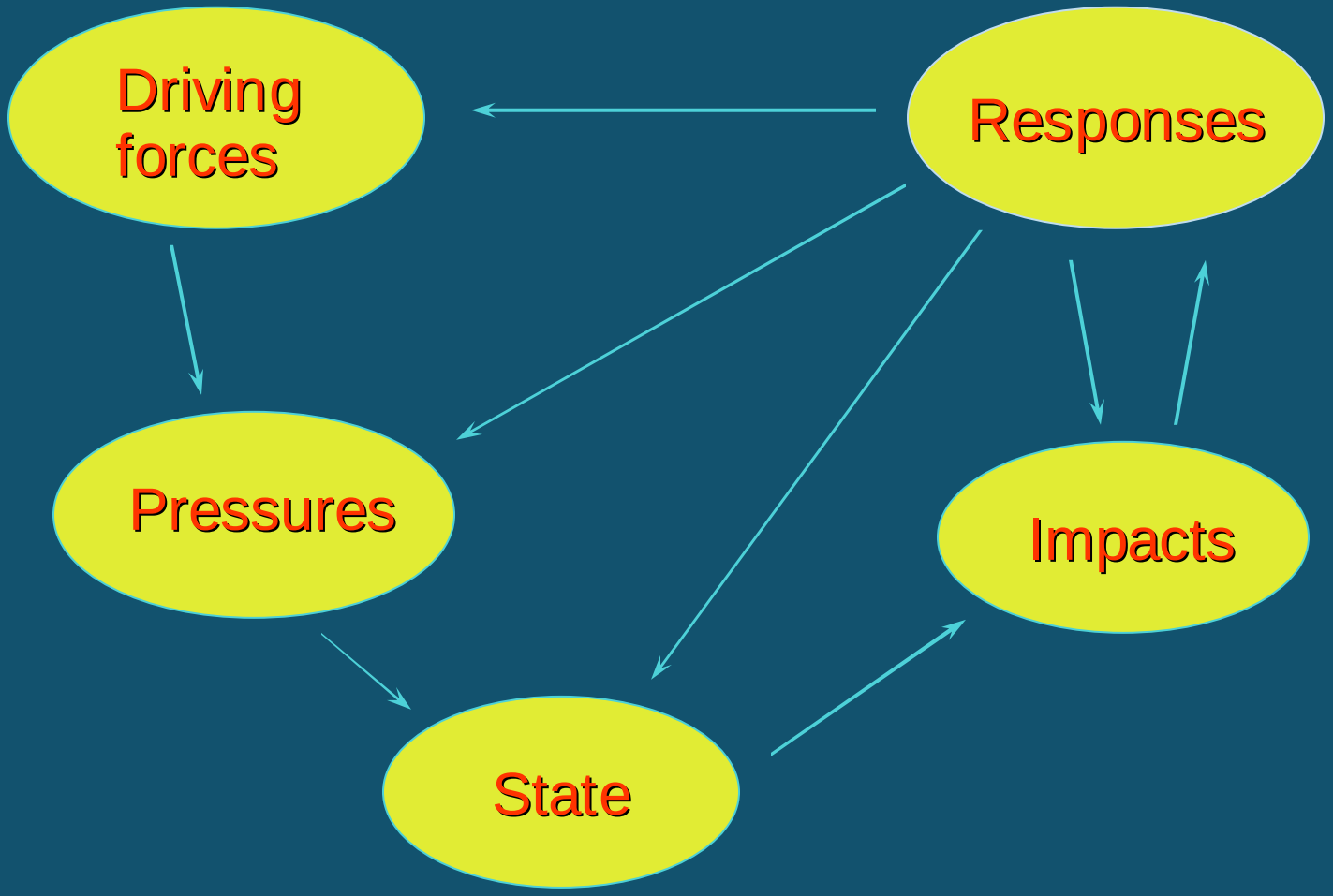
(2) Surface water and groundwater divides separate from state border, recharge in one country, discharge in adjacent.



(4) Large deep aquifer, recharged far from border, not connected to local surface water and groundwater.

Developed for questionnaire


Austria
Hungary
Slovenia
Croatia
Bosnia and Herzegovina
Serbia
Montenegro
Romania
Moldova
Ukraine
Bulgaria
FYR of Macedonia
Albania
Greece
Turkey
Italy
Alluvial-Sedimentary
Karst
* Questionnaires received



DPSIR framework

SEE Assessment – main conclusions 1

- Regional geology produces two distinct main aquifer types – karstic limestones of the Dinarides and alluvium in the plains of the Lower Danube and tributaries
- Both are hydrogeologically very vulnerable to pollution and often closely linked to surface waters
- Groundwater is very important, often providing >75% of total water use and generally dominant for drinking water
- More than 60 transboundary groundwaters in this region alone, but not all are currently recognised as such by both neighbours

SEE Assessment – main conclusions 2

- General status remains good, little evidence of widespread degradation of quantity or quality, or of transboundary impacts
- But may reflect recent history and economic situation
- ICPDR is an established facilitator for collaboration in water management in the region and was widely referred to
- Need bilateral agreements for joint identification, monitoring and data exchange and management
- Scarcity of data highlighted; some from short-term projects but need more systematic and sustained approaches to monitoring

What's next?

- WGMA, Helsinki, June 2007 will approve assessment
- Presentation at Belgrade Ministerial Conference
- Balkans Action Plan for Transboundary Water Cooperation (priorities for groundwaters)
- Pilot projects/capacity building activities
- Other joint activities with UNESCO, GWP and other partners


Thank you