



Groundwaters under the UNECE Water Convention and the Protocol on Water and Health

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Outline of the presentation

- The Convention on the Protection and Use of Transboundary Water Courses and International Lakes
- The Inventory of transboundary groundwaters
- The Guidelines on Monitoring and Assessment of Groundwaters and related publications
- The first assessment of transboundary rivers, lakes and groundwaters
- The Protocol on Water and Health
- Provisions specifically related to groundwater

Principles and aims of the Convention



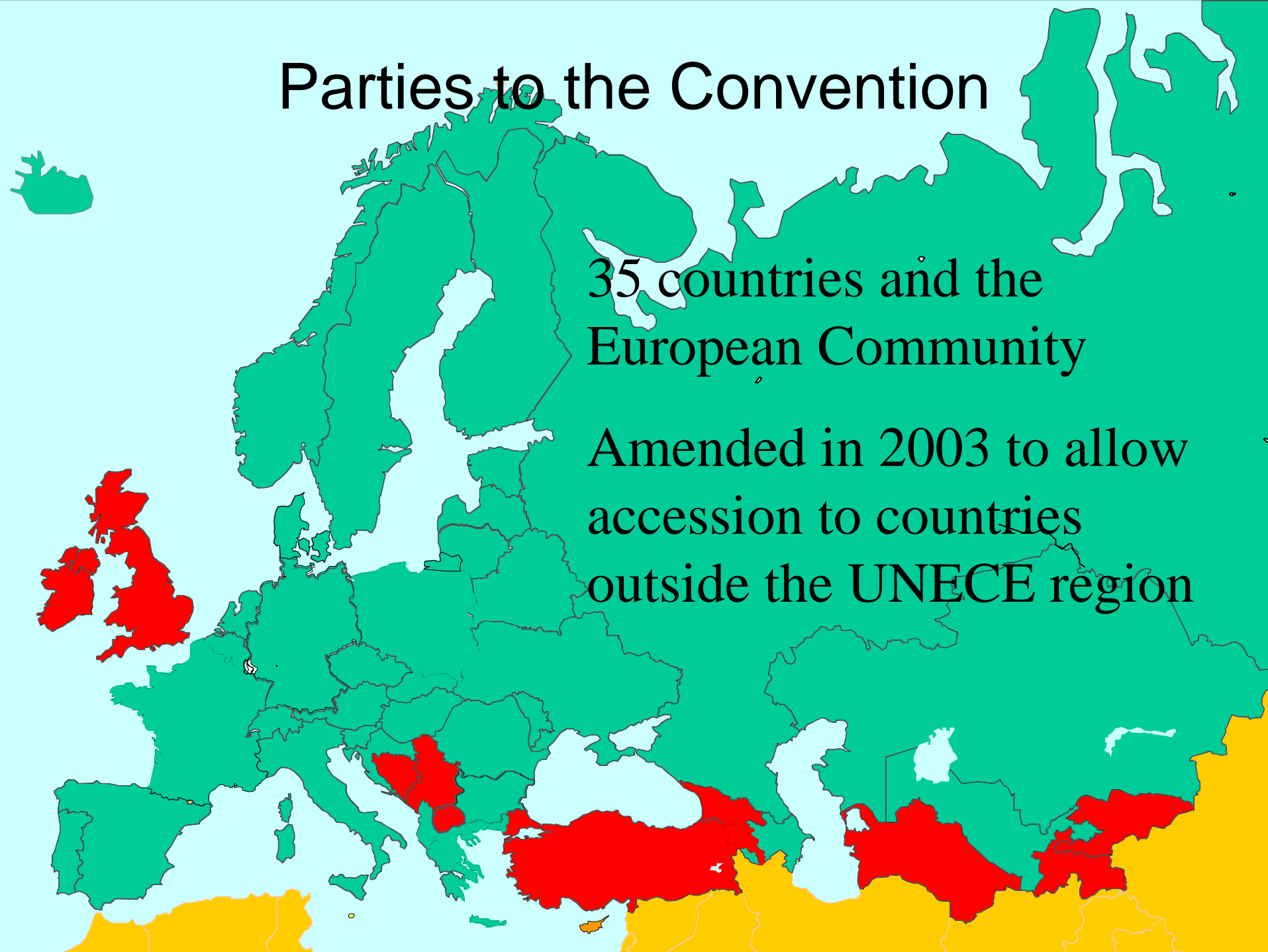
- The precautionary principle
- The polluter-pays principle
- Principle of sustainable water management
- Protection of transboundary waters by preventing, controlling and reducing pollution
- Integrated management of transboundary waters
- Reasonable and equitable use of transboundary waters
⇒ Conflict prevention
- Conservation and restoration of ecosystems
- Joint monitoring and assessment



Parties to the Convention

35 countries and the
European Community

Amended in 2003 to allow
accession to countries
outside the UNECE region



Recommendations on specific measures to protect groundwaters

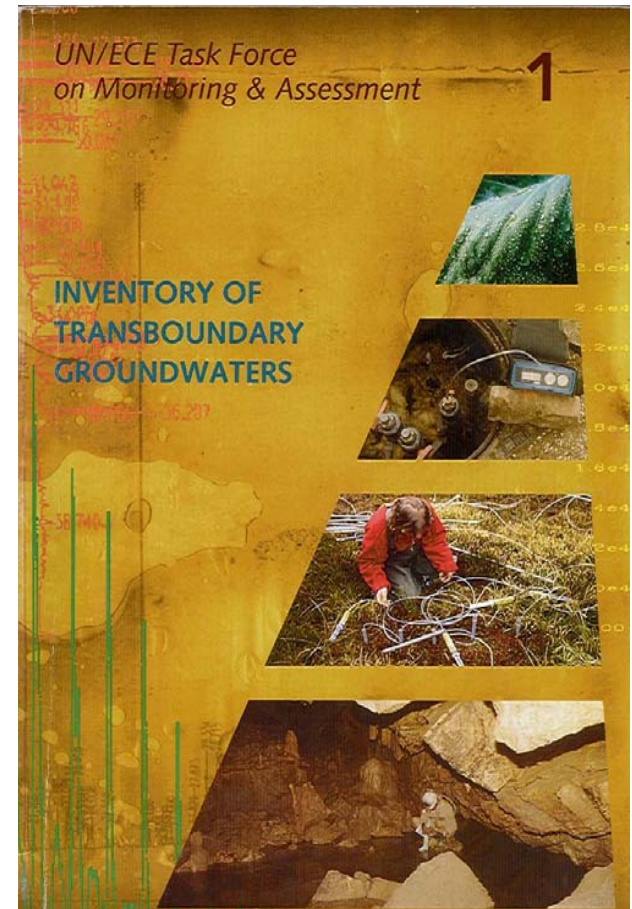


- Prevention: comprehensive protection, especially of unpolluted aquifers, EIA etc.
- Rehabilitation: priority to sites that threaten legally protected aquifers and ecosystems
- Liability
- Importance of research
- Importance of public participation

Inventory of transboundary groundwaters



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

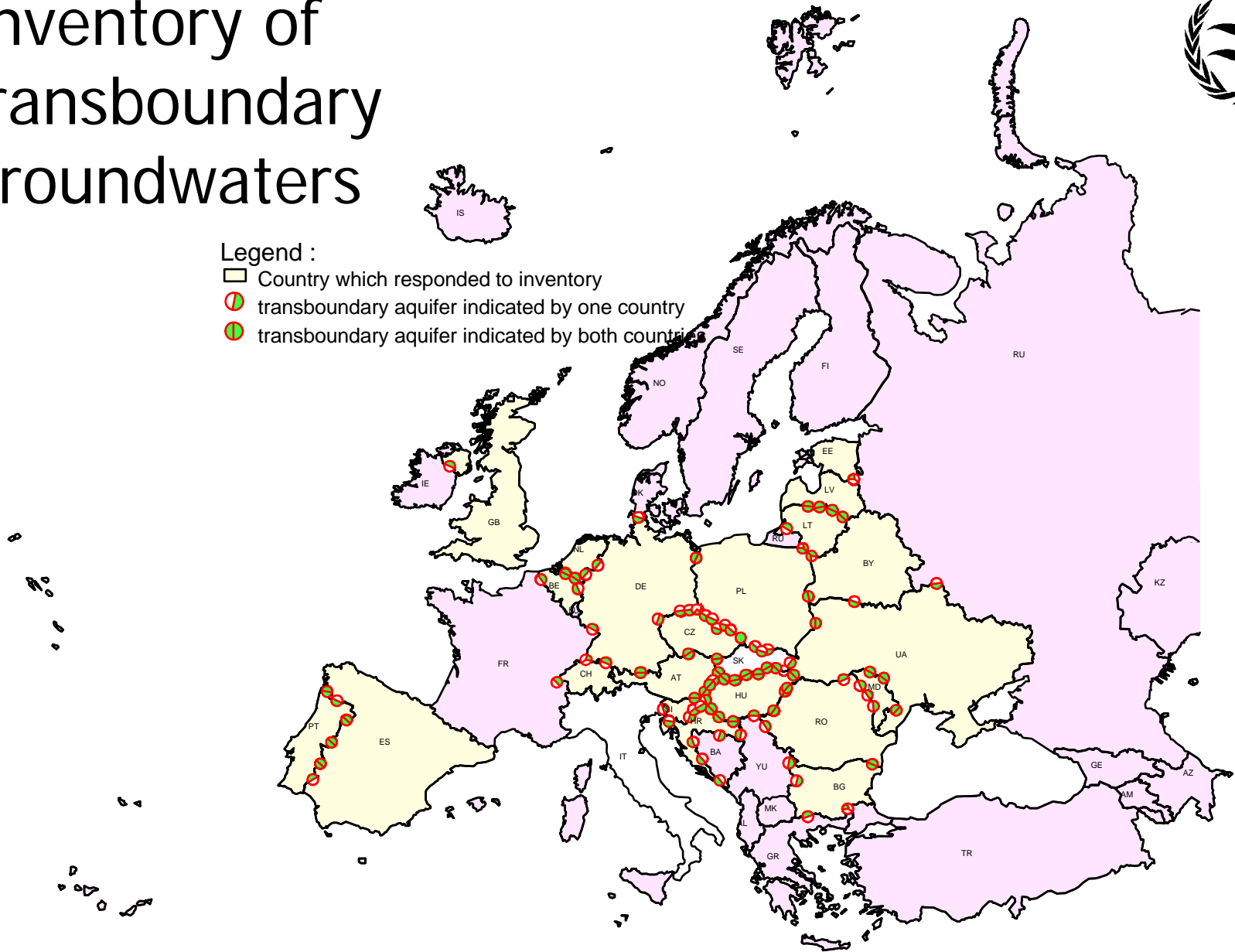


Inventory of transboundary groundwaters



Legend :

- Country which responded to inventory
- transboundary aquifer indicated by one country
- transboundary aquifer indicated by both countries



The Guidelines on Monitoring and Assessment



- Guidelines published in 1999
- Background documents:
 - Inventory
 - Problem-oriented approach and the use of indicators
 - Application of models
 - State of the art on monitoring and assessment of groundwaters



Guidelines on Monitoring & Assessment of Transboundary Groundwaters

Objectives:

- problem identification
- specification of information needs
- setting up monitoring and assessment systems for transboundary groundwaters

Activities/studies:

- Inventory
- Indicators
- Models
- State of the Art

GUIDELINES

Implementation of the guidelines

- Legend :
- responded to inventory
 - transboundary aquifers
 - transboundary aquifers

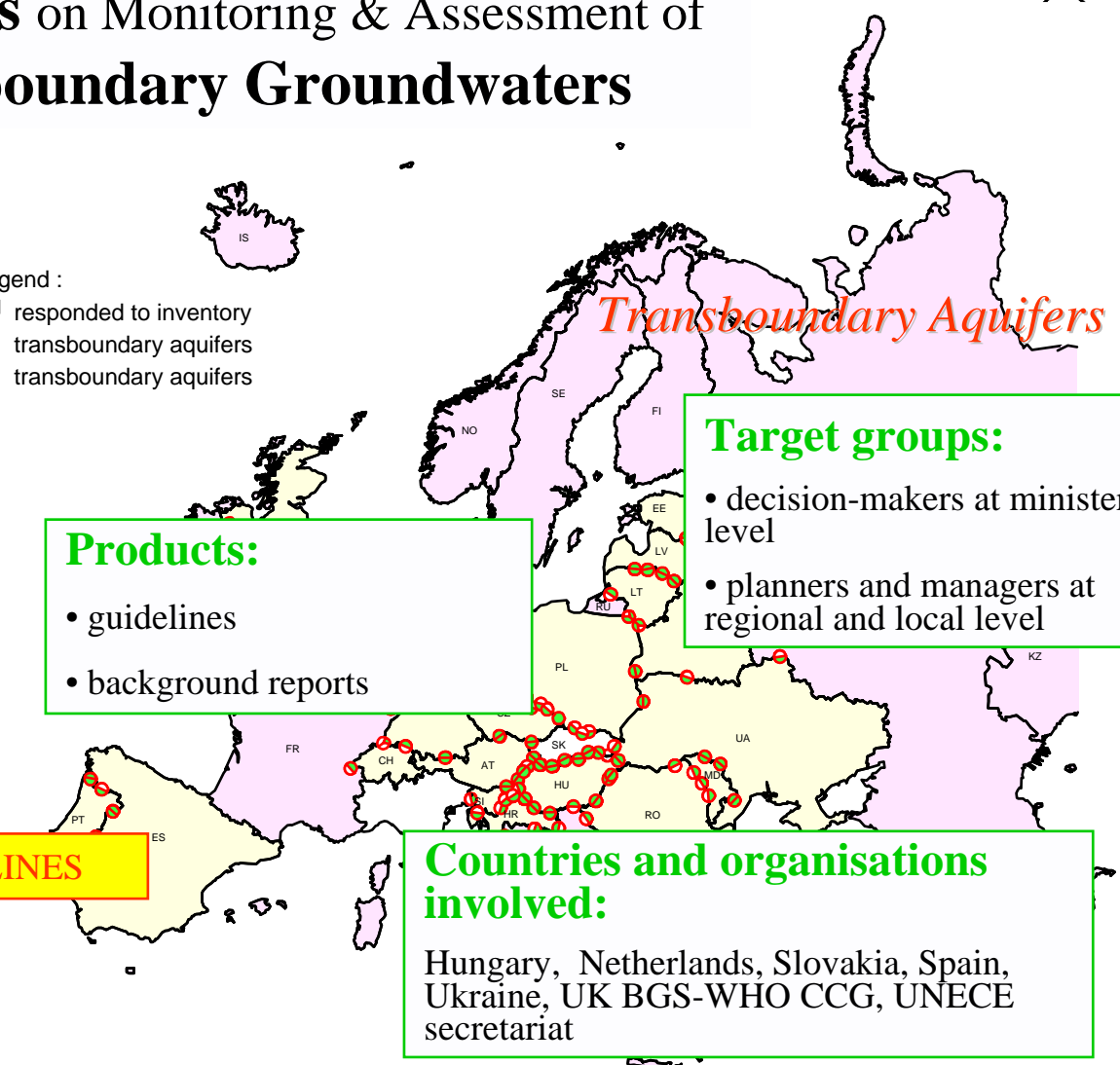
Products:

- guidelines
- background reports

Target groups:

- decision-makers at ministerial level
- planners and managers at regional and local level

Countries and organisations involved:
Hungary, Netherlands, Slovakia, Spain, Ukraine, UK BGS-WHO CCG, UNECE secretariat



Monitoring and assessment guidelines

- Monitoring cycle approach
- Characterization and description is a prerequisite
- Groundwaters peculiarity: residence time and interaction water/aquifer material
- Groundwater is invisible and less accessible => implications to be taken into account
- Integrated approach
- Prioritization of issues and targets
- Institutional arrangements



OUR WATERS: JOINING HANDS ACROSS BORDERS

First Assessment of Transboundary Rivers, Lakes and Groundwaters



2007: The Assessment

140 rivers

30 lakes

70 aquifers

>150 experts

40 countries



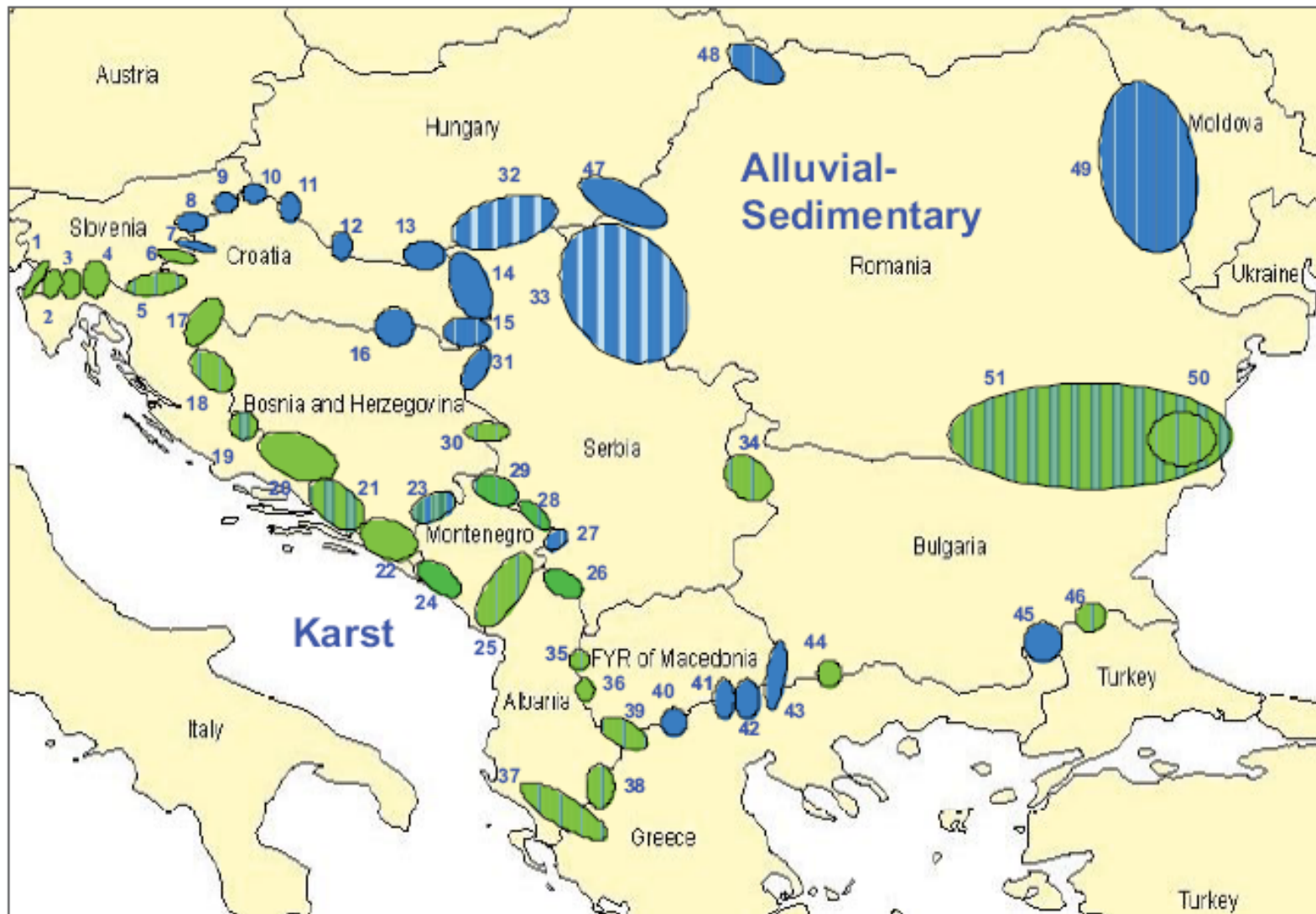
Assessments - groundwater

Selective approach for groundwater:

- the Balkan region – **led by BGS (John Chilton)**
- the Caucasus and Central Asia - **led by Slovak Hydrometeorological Institute, SHMU (Peter Roncak)**
- meeting of the UNECE groundwater core group in Paris in April 2006, hosted by UNESCO
- scope of assessment agreed, questionnaire designed
- approved in May 2006, distributed in July 2006
- collaboration with INWEB established



Assessment of transboundary groundwaters in South-Eastern Europe





Distribution of transboundary groundwaters in Caucasus and Central Asia



Content of the aquifer part:

- General characteristics of the transboundary aquifer;
- Uses and functions;
- Groundwater abstraction and use;
- Problems related to groundwater quantity;
- Problems related to groundwater quality;
- Evidence for transboundary effects;
- Groundwater management measures for the transboundary aquifer.

Major findings of the assessment related to groundwater



- The contamination of drinking water supplies is significant in EECCA- and SEE-countries, and causes water-related diseases
- In transboundary aquifers, increasing abstraction for agricultural purposes and drinking water supply is often a major water-quantity issue, and in some cases leads to overuse
- Proper attention should be devoted to land-use planning and the joint management of surface waters and groundwaters
- Plans for integrated water resources management still need to be developed for almost all basins



Findings related to karst aquifers

- Many of the transboundary karstic groundwaters provide 60% to 80% of total water usage, sometimes even 90% or 100% in South-Eastern Europe.
- Main quantity problems with karst aquifers: Increased pumping lifts or costs, reduction of borehole yields, Degradation of ecosystems
- Main quality problems: polluted water drawn into aquifer, Salinization or saline intrusion, pollution with nitrogen, pathogens, arsenic or other natural salts and minerals (Fe, Mn)



Current activities in groundwater

- pilot projects for guideline implementation -
Aggtelek Karst (Hungary/Slovakia, completed)
- guidance on water and climate adaptation
- Initial preparations of the second assessment





The Protocol on Water and Health

- Adopted in 1999 by 36 countries
- Entered into force in 2005
- Ratified by 21 countries



Core provisions of the Protocol



- Prevention, control and reduction of water-related diseases
- Outbreak detection, contingency planning and response
- Effective protection of water resources
- Provision of adequate supplies of safe drinking water and adequate sanitation

Provisions related to groundwater



- Integrated approaches should be applied across the whole catchment area, including its associated coastal waters, groundwater aquifer etc.
- Parties shall develop water-management plans preferably on the basis of catchment areas or groundwater aquifers.
- **The main aim of the Protocol is the protection of health and thus drinking water; thus, it is very relevant for groundwater and especially karstic aquifers**



Thank you

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