

Group 2: Land use and economic development

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J. Vrba, Introductory presentation:

- aquifers in karst, their use, characteristics (vulnerability is a main problem)
- the whole karst system needs to be known (input & output)
- qualitative & quantitative aspect
- IWRM and its components
- multidisciplinary approach: institutional, legal and scientific components
- Water resources governance (inter-sectoral, from state & regional to local)
- Water social and economic valuation (Dublin Statement 92, Agenda 21, WFD 2000)
- Water pricing (not everywhere socially acceptable, often the same price country-wise regardless of different costs)
- Valuing water and ecosystem function
- Pressure factors on transboundary aquifers (industrial, agricultural, water supply, hydropower production, etc)
- Mitigation of anthropogenic impact on groundwater (examples)

Proposed topics for discussion:

1. Water pricing policy in SEE countries
2. Change of regulation of farming practices in groundwater protection zones
3. Present status of institutional and scientific capacities responsible for national and integrated management of transboundary aquifers

- Example from Czech Republic of relation between pricing and consumption
- In Baden-Wittenberg The price of 2.50 Euro for water supply and it is not subsidized.

- Public water supply in Ljubljana 0.30 Euro the price is bounded to the inflation basket. Ljubljana uses groundwater from gravel aquifer. There are some problem with pesticides but locally. There are protection zones established in fifties.

- There are different prices for agricultural and industrial use
- in Maribor prices are also stabile but higher because of the necessary treatment
- Presentation of the water-supply in Ljubljana; clear connection with surface water, depletion of groundwater level due to pumping and deepening of surface water courses. The network losses are about 25%. About 30% aquifer capacity is used at the moment.

When the pesticides in the water were discovered the use of pesticide was immediately forbidden. From time to time there is flush of pesticides from the surface by rainwater.

Nitrogen pollution in Ljubljana is coming not primarily from agriculture, but unregulated sewage.

The services are being privatized not the water itself. What is a leverage to be used to regulate industrial and agricultural developments

In former Yugoslavia necessary development costs were not included in the price. Nowadays that is changing in B&H. Only 5% of sewage is purified in Bosnia and Herzegovina. Untreated urban water in the largest problem.

The karstic water in Herzegovina is still quite good but current problem is incidental pollution through the karstic sinks.

Limited area is used in Herzegovina for agriculture and there are no much data about it.

In Croatia the price varies across the country and differs also for industry which pays more and that fee is going to Croatian Water for the development. Fee from domestic water supply is going to municipalities.

The use of fertilizers in Croatia is generally according to standard and they are implementing WFD. The loss of water supply in Zagreb is 25-30%

Storage characteristics of the karst aquifers are different from those of has different characteristics

Slovenia uses the karst water for water supply of the coastal area. During the summer is water shortage and they are considering constructing reservoirs.

Example of pollution nearby of Rijeka (heavy metals and biological pollution) coming from road construction. It is often difficult to discover sources of pollution in karst

In Ljubljana the farmers are getting a subvention if they comply with regulations. In Germany, - like in most of the countries - in the second protection zones farmers are getting some kind of subvention if they comply with more strength regulations established for that zone.

Due to development of technology in Slovenia the protection zones could probably be adjusted in near future. There is a political pressure to allow more developments within the protection zones (example of the computer company put by a political decision in a protection zones).

Products of nano technology are very dangerous because they are going through sensitive filters - more research in this field is needed

B&H - the coordination of activity is the main problem; there are two state entities with parallel institutions.

Vrba: are there the problem with refineries? Damir: there is only one refinery in B&H (Bosanski Brod) but there is problem with that one exists - it pollutes Sava river.

In B&H is also problem of enforcement - the water supply companies are responsible for implementation but they need to be controlled by governmental institutions.

Third question

Are there some cooperation among countries regarding common use of aquifers?

Slovenia is cooperating with Austria. B&H is preparing a project about impact of construction of water accumulation on coastal springs. B&H and Croatia is also preparing cooperation on aquifers where the recharge (and protection) zone is in one county and the water usage in other.

We should not wait for pollution to cooperate but act in advance. On the other hand it is a matter of interest from both side of the border. The transboundary aquifers pointed out in the UNECE document should be ranked according to the current situation (pollution, vulnerability, possible usage). The pilot studies would be very much appreciated.