Convention on the Protection and Use of Transboundary Watercourses and International Lakes

Working Group on Water Management

Workshop on the protection of groundwaters used as a source of drinking-water supply
Budapest, 8-10 November 2001

CONCLUSIONS AND RECOMMENDATIONS

1. In many regions, population growth and water scarcity will have a greater effect on the quantity and quality of the available groundwater resources as expected. The development and implementation of groundwater protection policies and legislation should therefore be seen as dynamic processes with social, economic and environmental interests. The Convention and its 1999 Protocol on Water and Health, and the EC Water Framework Directive drive new developments in the ECE region.

2. Groundwater is an important source of drinking water in many ECE countries. Not all groundwater is of drinking-water quality; therefore health aspects of contaminated waters have also to be considered.

3. The integration of economics into groundwater water policy and planning via the economic analysis of groundwater water uses and the use of pricing for providing incentive to better use and recover costs will become more significant, as good-quality groundwaters are becoming a scarce resource.

4. It is of utmost importance to raise the understanding of politicians and policy makers of the basic principles of water management, water supply and sanitation, and encourage the updating and improvement of their knowledge and skills: Often technical aspects that were not or not sufficiently taken into consideration when preparing legislation and regulations will come up in the implementation phase. Examples include: (i) the delineation of protection zones and their application in practice; (ii) compensation for use restrictions in protection zones; and (iii) a possible conflict between land-use planning and environmental planning.

5. New principles and approaches include:

   (a) Groundwater protection through land-use planning as a means of preventing contamination;

(b) Risk assessment and risk management as a framework for groundwater protection schemes;

(c) The concept of "balanced" protection stipulating that the shorter the travel time the stricter the use-restriction should be. This concept also stipulates that a differentiation should be made planned and existing activities, respectively;

(d) Monitoring should be carried out over the whole aquifer or at least over its protection zone, and not only on the production wells.

6. Two central tenets are being followed in many cases:

(a) Resource protection based on assessment (and mapping) of groundwater vulnerability defined on the soil and groundwater system (unsaturated and saturated) properties;

(b) Source protection through the delineation of source protection zones and the characterization of the extent of permitted human activities.

7. The delineation of protection zones is based, in many cases, on the travel time of "unpolluted" water. The travel time of individual pollutants in the saturated zone and travel time of these substances in the unsaturated zone have to be additionally considered when permitting planned activities and/or imposing restrictions on existing activities (e.g. agriculture) in groundwater basins. Isotope (hydrology) methods can play an important role in the delineation of groundwater protection zones.

8. Pilot projects can demonstrate the effectiveness or efficiency of established protection zones.

9. Water protection in karstified aquifers is a challenging task. Two major problems may arise: the determination of the flow regime and the establishment of effective protection schemes. In the case of transboundary karstified aquifers, the drawing up of effective protection schemes if often hampered by the fact that bilateral of multilateral agreements are still not on place for most UNECE countries that share such water bodies. However, the scope of the problem both within the ECE region and the other regions in the world has still to be determined.

10. Efficient protection of groundwaters and decision-making on sustainable groundwater management requires reliable information. To increase public involvement on groundwater issues, awareness campaigns are needed; and policies

have to be transparent and understandable.

11. It is well accepted that a region-wide partnership is needed to foster dialogue between representatives of Governments, public and private sector organizations; joint bodies established for the protection of inland waters and the marine environment, NGOs, and the scientific community.

12. To establish priorities for future activities, the following should be taken unto account:

(a) There is a need for tiered approaches that filter out the less problematic issues of groundwater protection and use and allow more detailed analysis of the difficult ones;

(b) Environmental protection and land-use planning should move closer together;

(c) There will be much more detailed and complete environmental protection legislation, and there will be a more litigious society;

(d) Science will give more certainty – but there will never be enough knowledge. Consequently, there is a need for a development and the use of risk-based approaches to decision-making for potentially polluting activities, and more precautions should taken unless the complex science of the sub-surface is understood;

(e) More integration is needed: groundwater and surface waters should be considered as a whole in catchment scale planning as it is introduced by the Convention, the Protocol on Water and Health, and the EC Water Framework Directive.