



ACADEMIA ENGELBERG

6th Dialogue on Science – October 10 – 12, 2007
in Engelberg, Switzerland

Workshop 3: With respect to water and the water environment, what tools are needed to improve our knowledge base and solve the critical problems facing society?

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Knowledge base

The participants agree that the knowledge base is extensive. Water engineers are able to offer solutions for most of present day problems. However, it was criticised that success stories, for example from Africa, are not well enough known.

Furthermore, it was noted that the water system is complex and that influences like climate change and its consequences like the melting of glaciers and the poles must be understood in these systems.

Since such a broad knowledge base seems to be available, one wonders whether society sometimes spoils or pollutes water knowingly, hazarding the consequences and passing the problem on to the next generation.

The group agrees that society should apply the principle of precaution to the knowledge available. However, it was made clear that these precautions need to be financed.

This leads to a second point: the broad knowledge base determined before technical concerns. Many problems concerning water are highly influenced by government policy and social behaviour. In many cases, there is either insufficient knowledge of these factors or they remain too difficult to influence or change.

Examples for societal problems

Illegal groundwater capture seems to be a severe problem in Spain. A legal framework forbids it. However, from a farmer's perspective, they are given (indirect) incentives or rather no alternatives to capturing groundwater. Reasons for this inconsistency may have social and historical roots. After having lost its colonies, Spain began to use (and irrigate) its homeland in order to have a healthy and self-sufficient society. It was (and still is) considered to be a social contract that farmers produce food while getting water from the government. A possible solution would be to create examples. As a matter of fact, there is one available in Spain (near Barcelona). In this region, they gradually abandoned water rights over a long period of time in order to create a community that reallocates its water. Such a change needs time, a build up of trust as well as an understanding of history.



There are two (legal) approaches to regulating ground water. It might either be private (Roman law) or public in a sense that it must be shared with other interest groups (Germanic law). Spain, for example, put all flowing waters in the public domain. For this reason, the central government can decide upon water allocation in summer.

In Israel, the government sells the water to everyone, even the farmers. Water has a price there. This solution is driven by economic reasons and gives incentives not to spoil water. But might this water monopoly have also other reasons for existence? Is water also an instrument of power? On a regular basis, water supply to the Palestinians is cut. While the Palestinians are dependent on Israel, the Israelis seem to forget about their neighbours and rather support their own export, i.e. market interests.

As for the upstream/downstream problem: A downstream country (e.g. Egypt) will argue that an upstream country may use but not consume the water, i.e. it needs to give it back in a clean state. An upstream country may have different values. For example, Portuguese water policy maps show what is happening in upstream Spain, while Spanish maps show a white spot on its western borders.

Concerning water wars, it was judged that most conflicts in the future might have nothing to do with water, but water might be an important instrument of power.

A World Bank project in Haiti shows a good example of water management: The public water system in a city in Haiti serves all quarters but on different service levels. In very poor areas only an access point for water is supplied, in other quarters several public fountains are installed. The service level rises to fountains in every front yard to tap water in every house. In this way, different prices for water in one society can be justified. This measure does not aim at equality but at equity.

Closing remarks

Water management knowledge must be differentiated into several sub areas. While there are a lot of technical knowledge and instruments available, communication with the respective stakeholders might not work or the decision makers might act on other premises. The situation is similar at the level of tools: While many technological tools are at hand, only a few societal or political tools have been developed.