Two Transnational Water Issues – Mobile Substances and Wastewater Systems

Rivers propagate risks originating in one area to take effect on another. That concerns on the one hand changes in quantity and spatiotemporal distribution of water inflows which influence the downstream situation, especially with regard to the risk of floodings. That concerns on the other hand impacts on water quality depending on upstream chemical stress factors. Referring to this, the short presentation will point out two water issues of particular importance for transnational foresight processes.

First, there exist a lack of instruments for an adequate risk assessment for sub-toxic and sub-acute polar and persistent substances beside the regulation of priority substances and groups of substances listed in Annex X of the EU-WFD. Polarity and persistence result in a high mobility and therefore an exposure at long distances. An additional risk potential is given by the possibility of low-dose-effects which could be shown for several of these mobile substances. They outrun national efforts of regulation and need an environmental risk management which goes beyond classic concepts. Challenges are the development of regulatory structures beside the priority list, bringing together national regulations and overcome administrative barriers, and the implementation of a concequent participation of all relevant actors.

Second, the widely-used concept of centralised wastewater disposal and treatment systems causes strong impacts on the quantitative water balance of rivers as well as on their chemical situation, and finally it is embedded in certain governance structures. In order to reduce the risk of flooding by a slowdown of water discharge, to improve the chemical characteristic of rivers, to increase the availability of water in the ecosystems, and to increase the adaptability to changing (demographic) conditions, a conceptual change in favour of a differentiated centralised and decentralised wastewater system is needed. The transformation of the system structure have to be analysed and assessed on a transnational level regarding consequences for societal and environmental risks, administration and management, and technique.

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