

Press Release 17 March 2014

World Water Day 2015

World water decade ends - Problems of global water supply stay

The World Water Day on March 22 marks the end of the UN-Decade "Water for Life" the goal of which was to improve the water supply worldwide. But access to clean water and sufficient amounts of industrial water has remained a big challenge in spite of all efforts – and this does not just apply to arid agricultural regions but also to cities. Especially in megacities with annually up to 300,000 new inhabitants the pressure on the resource is increasing. Water experts from ISOE – Institute for Social-Ecological Research demonstrate how it is possible for cities to handle water shortage and reduce user conflicts.

Worldwide water demand is increasing fast. The consequences are well known: many groundwater reserves are already overexploited, more and more regions are suffering from water shortage and the contamination of natural water resources is causing considerable risks for health and environment. Conflicts over the limited resource are starting to emerge. In 2025, according to estimates of the UNESCO, two thirds of the world population could be affected by water shortage.

Reducing the per capita consumption in spite of a growing population

Having access to clean water is a human right according to the UN. But how can this right be sustainably put into effect considering the growing population and dwindling resources? "If we continue to handle the situation as we have up to now: increasing demand - increasing supply, then we will increase the pressure on the already strained water resources" says Stefan Liehr, head of the research unit "Water Resources and Land Use". The supply cannot be endlessly increased as the water reserves on planet earth are not unlimited. "Instead of tapping more and more new water resources with disastrous consequences for humans and the environment we have to develop safe and sustainable strategies that will reduce the per capita consumption."

Water demand prognoses can determine saving potentials

In order to reduce the per capita consumption, we first have to find out where relevant saving potentials are located. "For this endeavor there already exists a powerful instrument that has hardly been used up to now", says Liehr. "With water demand prognoses we can develop a differentiated picture of water usage and can precisely assess what kind of demand we are facing and what saving potentials we may expect." Possible conflicts over water usage are thus also becoming apparent at an early stage." The prognoses are based on assumptions on plausible, social, economic, and technical developments with respect to future demand. They provide the basis for future scenarios which allow to deduct priorities for concrete measures for households, the economy and urban development.

Recommendations for efficient measures in the field of water supply

"Meanwhile we dispose of very good water saving technologies and now we know very well how to handle drinking and industrial water in an economic manner - particularly with the help of water treatment and reuse", says water researcher Liehr. According to him, what is missing is knowledge concerning the actual water demand and water consumption in cities: How much water is required by whom and for what purpose? For example, how high is the share of necessary drinking water for households compared to the water demand of small

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trade? What role is the specific structure of industrial branches playing for the overall demand? And in which areas is drinking water quality not required but reclaimed water can be used instead.

The same water can be used twice or three times. After having been treated it can be used in households – for example for flushing the toilets – as well as in industry. It can further be used for the irrigation of green areas or the restauration of rivers. Recommendations for such differentiated ways of usage can be worked out based on water demand prognoses. "There is a huge potential for saving water considering the number of inhabitants in megacities", says Liehr. But obviously water demand prognoses are only a first step. The political decision makers have to make use of the results and recommendations by developing strategies for a sustainable and safe water supply, the ISOE-researcher is pointing out.

ISOE – Institute for Social-Ecological Research, Frankfurt am Main, Germany

The ISOE – Institute for Social-Ecological Research is a leading non-commercial and non-academic institute for sustainability research. For 25 years, the Institute has been developing scientific basics for future-orientated concepts for politics civil society and economy – regionally, nationally and internationally. Among its research topics are water, energy, climate protection, mobility, urban spaces, biodiversity, as well as population dynamics and supply.