Summary and conclusions from the SIWI Seminar for Young Water Professionals
Food and urban security – breaking the urban/rural division in water management

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Abstract At the Seminar for Young Water Professionals, a group of young people from different parts of the world met to discuss and debate:
† the interface between the urban and rural environment – how can water management see to the interest of both the farmer and the urban citizen;
† how the spatial boundaries within water resources management will develop in the future due to changing population patterns.

Three key themes crystallized during the day: the challenges of the urban/rural interface, the need for new boundaries in water resources management and the importance of site-specific, appropriate solutions in relation to water re-use.

Keywords Peri-urban environments; rural; urban; wastewater reuse; water resources management

The urban – rural interface
All over the world, cities expand at an enormous rate, especially in countries in the South. Human activities reshape the anthropogenic landscape, but most human activities do not recognise physical divisions. In terms of urbanisation, the once so important local conditions have very limited effect on the growth of a city today. Natural boundaries, as the local availability of water are becoming less and less important for human activities in the 21st century. Separate planning of urban and rural areas has lead to a situation where water supply, sanitation and waste management has been dealt with sector wise and within administrative boundaries. And in a majority of cases, there are no plans for how the resource flow in the urban and rural interaction should be managed.

One example where the urban/rural interface is particularly clear is in the peri-urban environments, which can be found in the transition zone around most cities. The boundaries of these spatial entities are dynamic and change along with urban growth. Peri-urban environments are important in two aspects among others, firstly, because they are located between and are productively similar to both the urban and rural areas and secondly, because they serve as an important link between these two environments. In an example from Calcutta, these so called buffer zones clearly showed the interdependency between the rural and urban-based environments. These zones included for example livelihood opportunities such as aquaculture and the production of fruit and vegetables, which were sold at the urban markets.

Dynamic boundaries in water resources management
The growth of urban conglomerations increases the competition for water and other resources locally and regionally. Cities demand more and more water to meet the need from the urban domestic and economic sector. In many cases water is abstracted further
and further away from the actual demand site and transferred to these expanding nodes, whereby a web of water transfers develop. Imagine a country like India with a myriad of rapidly growing small- and medium-sized towns as well as mega cities, where the urban claims for water spreads like waves on a surface.

It is obvious that the demand for water does not follow any administrative boundaries and that present spatial entities in water resources management (such as drainage basins and upstream/downstream considerations) are not always enough to satisfy the thirst of both rural and urban sectors. The transition going on in water resources management due to merging spatial boundaries necessitates a complementary approach that incorporates future urban water claims. Planning based on the interaction between river basins and water claims from existing and possible urban growth points is crucial. It is also obvious that new ideas of how to link and bridge the gap between rural and urban water use are crucial for a more sustainable management of water in the future.

**Water after use**

There are three dimensions in the intricate linkages between urban growth and water security: firstly, to augment overall supply to meet an escalating demand for water, secondly, the difficulties in distributing water services to the entire population and thirdly, the alarming levels and concentrations of pollutants generated after use. A key theme discussed at the seminar, and also presented in the keynote speech by Professor Takashi Asano, concerned the importance of re-use and recycling of water. Wastewater should be seen as a resource and not as sewage. A question and remark that several of the speakers made related to how safety and health standards can be dealt with when water is reclaimed. This is a concern both in food production and regarding drinking water purposes. In most countries, people would be reluctant to accept to drink re-used water, for psychological reasons. In some countries still people do drink it, being unaware of the fact that the acute water shortage is met through technical means. But it was firmly pointed out by two speakers that modern treatment technology are nevertheless far from being appropriate solutions and realistic options in most urban and rural areas in developing countries today, or in the near future. Site-specific policy design was therefore argued for.

**Conclusions**

The conclusion or rather point taken at the end of the seminar was, that even though a management approach based on breaking the rural and urban division in water management is desirable, it is difficult to incorporate two so economically and socially different entities and that more work needs to be done to overcome these barriers. But the focus must be on creating appropriate management strategies that are based on local conditions. It was also concluded that there is a transition going on in water resources management due to the merging of spatial boundaries in the anthropogenic landscape. In many cases satisfying urban water demand goes beyond existing spatial boundaries such as river basins and upstream/downstream considerations, which necessitates a complementary approach that incorporates future urban water claims.