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“Utilisation of diversity in land use systems:
Sustainable and organic approaches to meet human needs”

Urbanisation and Wastewater Irrigation in Developing Countries: Applied Research on Food Safety in the Rural-Urban Interface

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Abstract

In the discussion of current and future water challenges, the phenomenon of Urbanization is not only challenging cross-sectoral water allocations but has in particular in developing countries a strong water quality component. In most urban centers in Africa, urbanization has outpaced sanitation infrastructure by decades, and wastewater from domestic and industrial sources is polluting urban and peri-urban water bodies. Efforts to increase wastewater treatment will remain a patchwork also in the mid term.

This situation has a significant impact on the production of e.g. irrigated high value vegetables which are preferably grown in city (market) vicinity. In the case of - for example - Accra, Ghana, about 200,000 urban dwellers eat every day in street restaurants fast food with vegetables produced with this kind of diluted wastewater.

As Africa's industrial development is still limited, the largest problem are pathogens. Applied research is needed to improve food safety and reduce public health risks in a situation where wastewater treatment is no option. The new global WHO-FAO-UNEP “Guidelines for the Safe Use of Wastewater, Excreta and Greywater in Agriculture” offer an interesting approach but most of the recommendations have a limited application potential. The presentation will illustrate the situation with a 3 min video-clip and give examples from research along the farm-to-fork contamination pathway to find regional solutions, address knowledge gaps and highlight remaining challenges for applied research.

The examples derive from the work supported by the International Water Management Institute (IWMI). IWMI is one of the 15 centers of the Consultative Group on International Agricultural Research (CGIAR). It established in 2005 a research division on “Agriculture, Water and Cities” to focus on the global challenges of urbanization, urban food supply, food safety and cross-sectoral water allocation and competition in the rural-urban continuum. Current projects are located in West and East Africa and South Asia. Key partners are national institution and universities, the WHO and FAO.

Keywords: Greywater, IWMI, Ghana, water use