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Wastewater Irrigation in two South Asian Settings – Is the Negative Perception of the Practice Justified?

PHILIPP WECKENBROCK¹, AXEL W. DRESCHER²

¹*Die Agronauten, Germany*

²*University of Freiburg, Dept. of Environmental Social Sciences and Geography; Physical Geography, Germany*

Abstract

Two of the physical links connecting cities and their surroundings are water and nutrients. Usually, they enter cities separately and – at least in the context of many cities in developing countries – exit combined: as wastewater. In areas downstream of urban centres, an estimated 200 million farmers worldwide use wastewater to irrigate their fields.

In an interdisciplinary international research project coordinated by the International Water Management Institute, risks and benefits of this practice were analysed from 2005 to 2008. Working in periurban areas of Hyderabad, India and Faisalabad, Pakistan, the project's particular focus was on health and environmental risks of wastewater irrigation. Our sceptical perception of the practice at the onset of our research reflected the predominant negative view of wastewater irrigation, which is shared by most planners, decision makers and scientists.

After three years of research, we were forced to reconsider this view: the data from the different project groups showed that neither health nor environmental risks of wastewater irrigation were as serious as expected. For instance, there was no clear evidence for a negative impact of wastewater use on parasite infections and on heavy metal contamination of soils. Benefits of the practice, though more difficult to assess, were however obvious. Examples for such benefits include higher returns on investments in agriculture and higher crop diversity in wastewater irrigated areas.

One possible interpretation of our findings is therefore that management of wastewater irrigation in cooperation with farmers might under some circumstances be preferable to highly centralised, technological and expensive approaches like wastewater treatment plants. This is particularly relevant for contexts in which other, competing infrastructure issues like provision with drinking water and basic health care are pressing.

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