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Institute of Agricultural Sciences in the Tropics (Hans-Rothenberg-Institute)

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Understanding arsenic risks of groundwater irrigation in the rice value chain in Bangladesh

Master Thesis

Submitted by

Mohammad Anisuzzaman

Matriculation no.: 647955

Supervisor: Prof. Dr. Manfred Zeller

Second Supervisor: Prof. Dr. Petra Högy

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Abstract

It is well known that arsenic in drinking water poses a serious threat to human health in Bangladesh. People suffer or die resulting from drinking water with a high level of arsenic. Besides drinking water, arsenic has been found in rice produced with arsenic-contaminated groundwater.

Rice is a major food grain in Bangladesh, where with an increasing population, demand for rice is expected to increase in the coming years. Groundwater is often used to irrigate rice in Bangladesh. Irrigation leads to arsenic contamination to the soil. As a result, consumption of rice or other food grains produced with arsenic-contaminated water is a risk to human health.

A survey with rice farmers and wholesalers which was conducted in five districts of Bangladesh revealed that not only the people live in the districts with higher arsenic concentration but also the people living in other districts are at risk of being affected by contaminated rice.

Interviews with government officials, rice farmers, consumer, and wholesalers indicated that there is no awareness concerning the use of arsenic-contaminated groundwater for irrigation. This situation must be addressed by relevant stakeholders in order to ensure the safety of the people.