Hygienic aspects of sanitation and nutrient recycling in selected rural areas of Uzbekistan and Viet Nam

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Introduction
Nutrient recycling by application of human excreta to maintain soil fertility has been practiced in the Eastern Asia and the Western Pacific for 4,000 years. In other countries the need for nutrient recycling increases due to the economic downturn, resulting in socio-economic constraints for the population, e.g., in rural areas of countries in transition like the Central Asian republics.

Are there differences concerning hygienic aspects of human excreta management in Central and South-East Asia?

Within the framework of the ZEP/UNESCO Khorezm project a multi-factor analysis regarding water, sanitation, hygiene and diarrhoeal diseases was carried out in 2003 and 2004.

Thus, in 189 randomly selected households spot checks and interviews using standardised questionnaires were carried out in summer 2003.

About 30% of the households applied human excreta directly to the vegetable garden or agricultural land; another 50% use safer nutrient recycling practices and bury human excreta close to trees and bushes thus in the garden or under trees.

Excreta management in Khorezm

In Khorezm, hygienically unsafe nutrient recycling of human excreta is common. Human excreta from pit latrines are dug out by family labour and applied as fertilizer to agricultural fields and vegetable gardens.

Furthermore, open disposal of children’s faces and frequently open defecation of children contribute to an environment loaded with faecal-oral pathogens.

Uzbekistan

- Area: 447,000 km²
- Population: 26 million
  - Urban 36%, rural 64%
- Access to improved sanitation: 57%
  - Urban 73%, rural 48%
- Khorezm province
  - Area: 4,550 km²
  - Population: 1.4 million
    - Urban 37%, rural 63%
  - Access to improved sanitation: 96%
  - Access to sewerage: 12%

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Viet Nam

- Area: 330,000 km²
- Population: 84 million
  - Urban 26%, rural 74%
- Access to improved sanitation: 41%
  - Urban 84%, rural 26%
- Mekong Delta
  - Area: 40,000 km²
  - Population: 17 million
  - Access to sanitation: 83%
  - Access to sanitary sanitation: 20%

The SANSE D project develops site-adapted concepts for decentralised water supply and waste water treatment.

In pilot facilities, nutrients contained in human and animal excreta are converted into substrates for fertilising, either by applying biogas digestion and/or vermicom-posting.

The hygiene module assesses the reduction efficacy of different excreta sanitising techniques and the impact of a ground water work to human health.

Excreta management in the Mekong Delta

In local farming systems excreta are predominantly used as fodder in aquaculture. For this reason simple latrines are located directly over fish ponds which leads to heavy faecal contamination of the surface water, used for drinking and other personal purposes as well as for irrigation.

Hence, the occurrence of faecal pathogens contaminate not only water, but also fish, vegetables and soil.

Funded by: