



Photo: M. Lydecker

Solutions towards Safe Wastewater Irrigation

A focus area within the CGIAR Research Program on Water, Land and Ecosystems

THE CHALLENGE

Nearly 20 million hectares of irrigated crops worldwide use highly polluted water that is contaminated with untreated or only partially treated wastewater posing risks to farmers and consumers. Women and children face the highest risk associated with pathogens from fecal matter.

Lack of resources, including freshwater for flushing sewage, makes larger sewer systems an unfeasible option in many parts of the world—drastically limiting the potential of conventional wastewater treatment to safeguard public health. In many low-income countries, household-based septic tanks will remain the most common and sustainable treatment system. Environmental and public health challenges arise in conditions where the pit is full and collection or treatment facilities are missing.

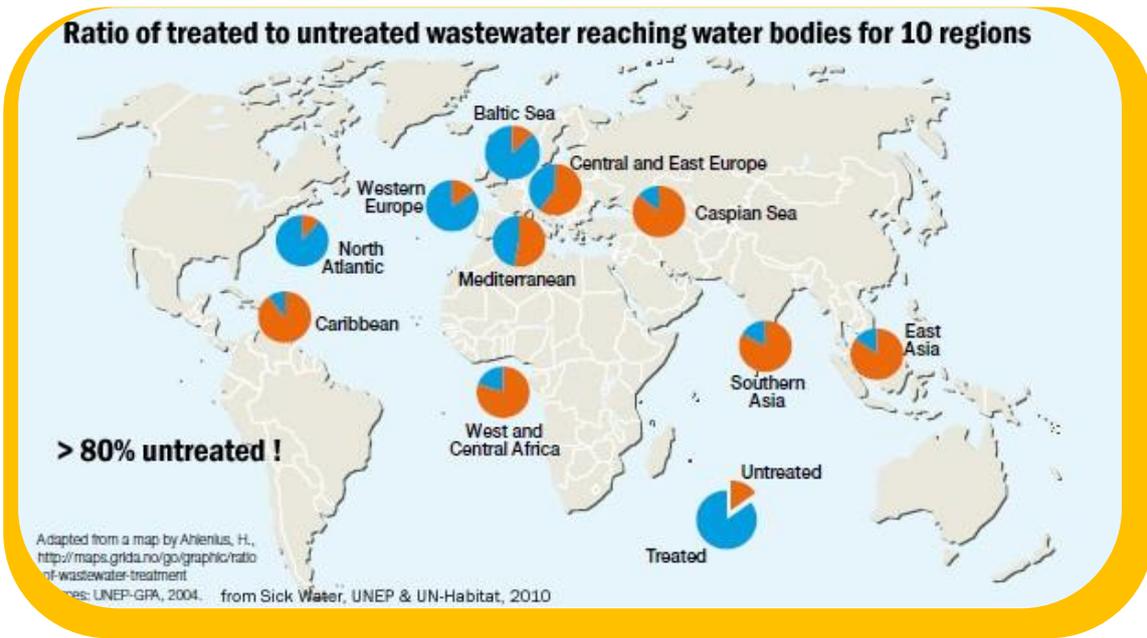
OBJECTIVES

- To improve food security, safety and nutrition through policy support, capacity building and guidelines for safe and productive reuse of wastewater and fecal sludge.
- To analyze incentives and support behavior change to catalyze the adoption of safety measures by farmers, traders, consumers and institutions.

DID YOU KNOW

- Vegetables produced in and around 4 of 5 cities in the developing world are irrigated with highly polluted water.
- These urban farms produce up to 90% of the fresh vegetables consumed in those cities.
- IWMI is testing 15-20 solutions for risk reduction in line with WHO regulations which also work where there is no wastewater treatment.
- Returns on Investment (ROI) are US\$4.9 per dollar





Safe Wastewater Use: Solutions within Reach

There are strong efforts within the Water, Sanitation and Hygiene (WASH) sector that focus on on-site sanitation, safe excreta disposal and household hygiene. However, as long as our rivers remain polluted, thereby becoming wastewater highways that affect the food chain, these efforts have to be complemented by cost-effective options for health risk reduction.

Our program targets food safety in partnership with the World Health Organization (WHO) and the Food and Agriculture of the United Nations (FAO), along with their guidelines for the safe use of wastewater, excreta and greywater in agriculture.

Multi-disciplinary teams of environmental and social scientists, public health experts and agronomists are working in Asia and Africa on risk assessment and mitigation, options for risk awareness creation and incentives for behavior change through locally applied action research. Recommendations are being summarized and disseminated through national and international guidelines, training and the UN system.

Returns on Investment

With a high cost-effectiveness of US\$20-80 per averted DALY, our tested safety measures have a Return on Investment (ROI) of US\$ 4.9 per dollar invested.

Current Donors

The European Union (EU), African Water Facility (AWF), and the United States Agency for International Development (USAID).

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