

DRAFT

Safe Use of Wastewater in Agriculture

2nd Regional Workshop for Asia

16-18 May 2012
New Delhi, India



ICID•CIID



INTRODUCTION

To feed the growing population, the food production needs to be increased. The increased need for food production demands greater irrigated agriculture, which consumes 70% of world's freshwater resources that remains more or less constant even as the world population continues to rise. In the context of population growth, climate change and limited freshwater resources, wastewater comes in as a sustainable source of water.

With the increasing coverage of population under sanitation and growing volumes of wastewater, it is fast becoming an important resource particularly in urban and peri-urban areas.

The reuse of wastewater in agriculture for irrigation and as a source of nutrients to enhance food production dates back to centuries, it has been a practice both in developing and developed countries. Farmers in water-scarce regions use wastewater mainly because it is the only source of irrigation water during periods of droughts in these regions. Most countries in the world are moving towards the reuse of wastewater for irrigation of both agriculture and other uses. It was estimated in an earlier study by WHO that about 20 million hectares of crops around the world were irrigated with wastewater. Thus, without doubt, wastewater is becoming an important resource, especially in the dry, water-scarce regions of the world, most of which are in developing and underdeveloped countries.

In developing countries, wastewater is not only a growing source of water, but also a growing source of livelihood and food security for many people, as world's 13% of the population is under-nourished. The reuse of wastewater in agriculture has resulted in income generation for wastewater farmers who are largely from the ----- and also empowerment of women. Food security has the potential to improve due to the increased and sustained availability of water for agriculture in the form of wastewater. The use of wastewater also offsets the cost associated with application fertilizers on farms as human domestic waste and waste from primary industries meet the micro nutrients required for increased crop production.

Though there are many advantages to the application of wastewater in agriculture, there are many challenges in the safe use of wastewater, particularly in developing and underdeveloped countries. The most apparent challenge lies in dealing with the health risks to producers and consumers of produce irrigated by wastewater. In developing countries, where the sanitation conditions are poor and multiple-disease exposure pathways exist, wastewater use might not be considered a major, additional source of health risk. A study by IWMI proved that even partially treated wastewater reduces the health risks associated with the use of wastewater in agriculture. Other simple non-treatment measures such improvements in personal hygiene and sanitation provide reduction in health risks.

The preferred option off course is treating wastewater before agricultural use. However, as most of the developing countries do not have sufficient infrastructure to treat all the wastewater generated, banning wastewater use is not a feasible option because it is the sole source of livelihood for many of these farmers. The increased food security that is a result of use of wastewater for irrigation is improving the nutritional status and health of the farmers and their families as well as their economic standards. It is important to evaluate the health risks associated with wastewater use in the context of the direct and indirect benefits that wastewater irrigation provides.

There cannot be uniform health/treatment standards for countries with different socio economic conditions. Low-cost, flexible and safe treatment technologies like pond-based on-farm water treatment, etc. are to be explored. A combination of processes such as sedimentation, dilution, aeration, natural die-off, exposure to UV-light, etc. also play a role in low-cost wastewater treatment. There are also geographical, societal and cultural differences in the way wastewater is perceived and used in different regions of the world. Hence, innovative solutions need to be adapted to suit local needs and capabilities to implement the safe use of wastewater in agriculture successfully.

The safe use of wastewater in agriculture thus requires new ideas, innovations and flexible risk based policies to change the way the wastewater treatment is done in developing and underdeveloped countries. Important stakeholders like farmers need to be consulted before making important policy decisions. There is a need to develop capacities within the countries and various institutions to deal with different aspects of safe use of wastewater in agriculture.

OBJECTIVE

Keeping this scenario in view, the Food and Agriculture Organization of the United Nations (FAO) together with the UN-Water Decade Programme on Capacity Development (UNW-DPC), the United Nations University Institute on Water, Environment and Health (UNU-INWEH) and International Commission on Irrigation and Drainage (ICID) and others have joined forces to promote the safe use of wastewater in agriculture in developing countries and countries in transition. As a result, a Capacity Development Project on Safe Wastewater Use in Agriculture has been launched. The objective of the project is to help in the identification and prioritization of the knowledge and skills to minimize environmental and health risks in urban and peri-urban areas by properly managing wastewater. At the first stage a Capacity Needs Assessment is being carried out at the country level to identify the key institutions and organizations and the necessary staff capacities to be developed.

For the purpose a kick-off workshop for the project was organized in Bonn, Germany, in November 2011, which was followed by 1st Regional Workshop in Marrakech, Morocco in February 2012.

The 2nd Regional Workshop as part of the Capacity Development Project on the Safe Use of Wastewater in Agriculture (jointly convened by FAO, UNEP, UNU-INWEH, UNW-DPC, IWMI, and ICID). This is the second workshop in the series for Asia and is being hosted by ICID in New Delhi with a view to compile data on the existing knowledge and skills for the safe use of wastewater in agriculture within the key institutions and organizations in developing countries or in countries in transition, with competences or activities on the safe use of wastewater in agriculture in Central, West and South Asian countries.

DATE AND VENUE

16-18 May 2012, NAS Auditorium, Indian Agricultural Research Institute (IARI), Pusa Campus, New Delhi 110012, India. A field visit to a Wastewater Treatment Plant operated by Delhi Jal Board in Delhi will be organized. The official language of the workshop is English.

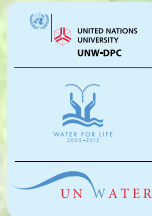
WHO ARE THE PARTICIPANTS?

The participants for the workshop are mainly drafted from developing countries in central, western and south Asian countries and who are currently engaged in the sectors like Irrigation, Agriculture, Water and Sanitation, Urban Development, Environment and Health, besides faculty from UNW-DPC, FAO, UNEP, UNU-INWEH, IWMI and ICID. The representatives of each participating country are expected to prepare a country report/paper, which will be shared with other workshop participants as well as with the countries from other regions. Each country attending the regional workshop will present salient features of the respective country report/paper. The country reports/papers are expected to be specific and follow a specific format providing information requested in different sections. This will provide opportunity for the participating countries to share their work on their later aspects.

Organized by:



ICID•CIID



UNITED NATIONS
UNIVERSITY
UNU-INWEH



Local Partners:



Water Technology Centre of
Indian Agriculture Research Institute



Delhi Jal Board