Assessment of farmers’ perceptions of health risks of untreated wastewater used for crop production in Maili Saba, Nairobi - A gendered perspective.

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Declaration

This research is my original work and has never been presented for award of a degree in any other University.

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Abstract

The use of untreated wastewater for crop production poses serious health risks to the farmers. The greatest risk is from helminth infections and as a result of repeated exposure, the farmers are likely to build up high infection doses. The purpose of the research was to generate gender disaggregated data and document health risk perceptions of farmers exposed to untreated wastewater used for crop production in Maili Saba, Nairobi. The specific objectives were to describe the socio-economic characteristics of the farmers who use untreated wastewater for crop production and to establish the wastewater conveyance and application methods used by the farmers while irrigating with untreated wastewater. Other specific objectives were to establish whether the farmers use protective gear when handling untreated wastewater when irrigating, to establish the main constraints faced by the informal irrigators and to assess the general health risk perceptions by the farmers associated with the use of untreated wastewater used for crop production. The null hypotheses of the study were, namely, there is no significant association between gender and risk of enteric diseases when using untreated wastewater for crop production and there is no relationship between gender and health risk perceptions of using untreated wastewater for crop production.

Data was collected using a structured questionnaire that was administered to 75 respondents (43 women and 32 men) who were identified through simple random sampling. Excel and Statistical Package for Social Sciences (SPSS) packages were used for data analysis. The data was presented using bar charts, cross-tabulations and descriptive statistics which included frequency distribution tables and percentages.

The results indicate that about 60% of the farmers who use untreated wastewater for crop production are women. About 80% of both the men and the women utilize untreated wastewater from the sewer line for irrigation making it the main source of irrigation water and use furrow/flooding while irrigating their crops. The Sources of irrigation water and the conveyance methods from the source to the field are the same irrespective of gender. More women (86%) than men (66%) spend between two and four hours per day working on their plots. More women (84%) than men (75%) do not use protective gear when irrigating with wastewater which puts the women at a high
risk of negative health risks related to use of untreated wastewater, especially when they come into direct contact with the water. More women (49%) than men (38%) are exposed to health risks because they do not perceive the wastewater as a threat. The study established that 44% of the respondents (comprising of 38% male and 49% of females) found nothing wrong with the use of untreated wastewater. The study also established that since squatting is a major mode of land tenure in the area, land insecurity was the major constraint for 47% of the women and 22% of the men. The research also established that there is no association between gender and risk of enteric diseases while using untreated wastewater for crop production in Maili Saba. The study also established that there is no relationship between gender and health risk perceptions of untreated wastewater used for crop production in Maili Saba. This means that the perception of health risks associated with untreated wastewater for crop production in Maili Saba is not dependent on gender.

The research concluded that the wastewater used for irrigation presents a risk of enteric diseases with the farmers working in the irrigated fields being directly exposed to infection since majority of them do not use protective clothing when irrigating with the wastewater and they manually control the wastewater while irrigating, which puts more women than men at a high risk of negative health risks, especially when they come into direct contact with the wastewater. According to the research findings, it is clear that there is need to acknowledge the existence of wastewater irrigation in peri-urban Nairobi. There is also a need to raise public awareness of the wastewater quality issues in relation to crop production.