

Urban agriculture and informal wastewater Irrigation: Farmers Adaptation to changing water quality of Akaki River Addis Ababa, Ethiopia

Bogale Biruk Tekeste MSc,
A A City Administration KIrkos Sub city Woreda 02 AdministrationOffice
Department of Urban Agriculture And Environmental Protection Office,Ethiopia

ABSTRACT

Informal wastewater irrigation contributes 60% of major and 90% of leafy vegetable to Addis Ababa's food basket. Despite its benefits, farmers are challenged with a deteriorating water quality of the Akaki River in the past 40 years. The main objectives of the study were to assess and analyse major on-farm wastewater hazard reduction adoptions and determinants that affect farmers' behaviour of adoption choice.

A field survey of a randomly selected 60 urban farmers, a secondary data on water quality parameters and a field experiment were used in order to collect necessary data for the study.

Results of the study reveal that about 41.67% of interviewed farmers use on-farm wastewater hazard intervention measures. The major on-farm adoption measures in the study area are simple filtration (15%), safer application (less contaminating irrigation methods (10%), crop restriction (8.33%), and irrigation cessation (8.33%).In order to evaluate the possibility of adopting new measures a field experiment was made by constructing a simple on-farm sedimentation pond(dugout) and results show that the levels of BOD, COD, TSS, faecal coli form could be reduced by 85.39%, 72.5% and 68.23% and 88 % (about 1 log unit) respectively. The marginal analysis result shows the following factors significantly ($p=0.005$) affects farmers' choice of low-cost on-farm measures in informal wastewater irrigation: Farming experience, education of a household head and household size.

Therefore; incentives on land tenure and, further research on wastewater hazard reduction capacity of current adoption measures, support for enhancement of education system and establishment of farmers experience sharing centres are essential in order to increase the adoption of wastewater hazard intervention measures at farm level.

Key words: *Urban agriculture, informal wastewater irrigation, adoption, determinants ,multinomial-logit, marginal effect*

Biography

Biruk Tekeste has completed his MSc at the age of 29 years from UNESCO-IHE Institute for Wateer Exucation and Bachilor of scince studies from Haramaya University,College of Agriculture. He is Deputy CEO and Head of Urban Agriculture and Enviromental Potection Office at Kirkos Sub city Woreda 02 Administration Office..

Presenting author details
Full name:**Biruk Tekeste Bogale**
Contact number:**+251-938-064213**
Skype account:**biruk.tekeste1**
Twitter account:
Linked In account:Biruk Tekeste
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