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International Conference on

Agri Biotech & Environmental Engineering

September 11-12, 2017 San Antonio, USA

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

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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 analyze major on-farm wastewater hazard reduction adoptions and determinants that affect farmers' behavior 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, fecal 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 centers are essential in order to increase the adoption of wastewater hazard intervention measures at farm level.

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Climate change effects on plants

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A ccording to the Fifth Synthesis Report on Climate Change Panel (IPCC); increased consumption of fossil fuels by human beings with the largest contribution to the global warming, including CO2, CH4, N2O, water vapor as by factors of greenhouse gas (GHGs) formed which caused the temperature of the world to increase progressively. In this case, it is not possible to get back, gradually in the agricultural sector, which is one of the industries that is found to have the highest sensitivity to the global warming, is getting more severely affected. So, that is an integral part of the plants (hence plant production) and because they are still prone or vulnerable to the effects of global warming is clear. Researchers showed that effects of global warming on plants; plant germination and growth were also reflected in their production. In this study, the effect of global warming on plant and plant growth which is the subject of our communique was discussed in general terms and explained with relevant examples.

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