

Smallholder's Agricultural Water Management Technology Adoption, Adoption Intensity and Their Determinants: The Case of Meda Welabu Woreda, Oromia, Ethiopia

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Abstract : The very objective of this paper was to empirically identify technology tailored determinants to the adoption and adoption intensity (extent of use) of agricultural water management technologies in Meda Welabu Woreda, Oromia regional state, Ethiopia. Meda Welabu Woreda which is one of the administrative Woredas of the Oromia regional state was selected purposively as this Woreda is one of the Woredas in the region where small scale irrigation practices and the use of agricultural water management technologies can be found among smallholders. Using the existence water management practices (use of water management technologies) and land use pattern as a criterion Genale Mekchira Kebele is selected to undergo the study. A total of 200 smallholders were selected from the Kebele using the technique developed by Krejeie and Morgan. The study employed the Logit and Tobit models to estimate and identify the economic, social, geographical, household, institutional, psychological, technological factors that determine adoption and adoption intensity of water management technologies. The study revealed that while 55 of the sampled households are adopters of agricultural water management technology the rest 140 were non adopters of the technologies. Among the adopters included in the sample 97% are using river diversion technology (traditional) with traditional canal while the rest 7% percent are using pond with treadle pump technology. The Logit estimation revealed that while adoption of river diversion is positively and significantly affected by membership to local institutions, active labor force, income, access to credit and land ownership, adoption of treadle pump technology is positively and significantly affected by family size, education level, access to credit, extension contact, income, access to market, and slope. The Logit estimation also revealed that whereas, group action requirement, distance to farm, and size of active labor force negative and significantly influenced adoption of river diversion, age and perception has negatively and significantly influenced adoption decision of treadle pump technology. On the other hand, the Tobit estimation revealed that while adoption intensity (extent of use) of agricultural water management is positively and significantly affected by education, credit, and extension contact, access to credit, access to market and income. This study revealed that technology tailored study on adoption of Agricultural water management technologies (AWMTs) should be considered to indentify and scale up best agricultural water management practices. In fact, in countries like Ethiopia, where there is difference in social, economic, cultural, environmental and agro ecological conditions even within the same Kebele technology tailored study that fit the condition of each Kebele would help to identify and scale up best practices in agricultural water management.

Keywords : water management technology, adoption, adoption intensity, smallholders, technology tailored approach

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