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The Economics of Water in Paddy and Non-Paddy Crop Production around the Kilombero Valley Ramsar Site, Tanzania: Productivity, Costs, Returns and Implication to Poverty Reduction

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ABSTRACT Water scarcity is globally getting worse in the light of increase in demand for water use. Human and ecosystem health and economic development are affected by problems of water scarcity and water pollution. This paper assessed the net benefit of water resource in crop production around the Kilombero Valley Ramsar Site in Tanzania. Specifically, the study determines and estimates costs and benefits in crop production and quantify its monetary value using both market and non-market techniques. Household questionnaires, checklist for key informants, participant observation and participatory rural appraisal techniques were employed for data collection. Questionnaire survey was administered to 120 households to establish the major agricultural activities, crops, costs of production and income accrued from these activities. Data relating to household characteristics and water related economic activities were analysed using Statistical Package for Social Sciences whereby the cost for production, inputs and returns were analysed and compared using Microsoft Excel. The residual imputation approach was used to estimate the value of water in crop production. Findings revealed that, 88.3 percent of the respondents own land and 11.7 percent of them rent the land for crop production. The net values of water for irrigated paddy and non-paddy crops were estimated to Tsh. 273.6 (US$ 0.23) and Tsh. 87.7 (US$ 0.073) per m^3 of consumed water respectively. The average productivity of water for paddy and non-paddy crop production is estimated at 0.85 kgm^{-3} and 0.69 kgm^{-3} of consumed water respectively. Furthermore, the returns from agriculture are less compared to returns from other water uses. Nevertheless, since majority of households are depending on agriculture this study recommends that emphasis should be put on effective and efficient use of water to improve its productivity.