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Estimating Reallocation Cost of Water Resources through Agricultural Production Function

ASNA ASHARI FARAH

Ruhr-Universität Bochum (RUB), Inst. of Development Research and Development Policy , Germany

Abstract

Human-ecosystem interactions have largely been ignored by people, especially in developing countries. Due to most ecosystem services characteristics as public goods and difficulties in quantifying their value to the society, the cost of consuming ecosystem goods and services are not assigned properly. The effect of human activities on ecosystem has no price and is seldom considered in decision making by governments. Increasing research and knowledge on global environmental change tends to more focus on the relationship between human activities and ecosystem sustainable use. A large number of interdisciplinary studies about global ecosystem changes have improved our information about the importance of humanity's dependence on ecosystem for their survival. Sustainable development refers to the economic and social development together with the protection of environmental quality. Sustainable development is strictly tied to wise use of environment and natural resources.

Making a balance between economic development and water resource degradation and depletion secures economic development without imposing excessive costs or lost on environment. Since agriculture has the major share of the raw water use in developing countries, with the aim of providing a support for policy makers in the agriculture development plans, we apply economic methods to identify the non-marketed gaps and monetise the real economic value of water.

The main goal of the study is an interdisciplinary linkage between water resources in wetland conservation and goods provided by water to assist policy makers for a sustainable water resource management. The research investigates the current and alternative water allocation strategies and their effect on farmers' welfare. This attempt, as a help for policy makers, determines a more desirable way for water management plans from the environmental perspective. The production function is applied as a methodology for assessing the economic value of water as an input in production process, while it can then be used in a reallocation analysis.

Keywords: Sustainable development, water resource management, welfare measurement