

Leamthai Poovanich 2008: Policies for Efficient Water Resource Management in Thailand.

Doctor of Philosophy (Agricultural Economics), Major Field: Agricultural Economics, Department of Agricultural and Resource Economics. Thesis Advisor: Associate Professor Ruangrai Tokrisna, Ph.D. 275 pages.

This research had three objectives: 1) to study problems and water resource management policy in term of quantity and quality from the past to present, 2) to study market based instruments (MBIs) as tools for efficient water resource management, and 3) to propose set of efficient water resource management policies using Computable General Equilibrium (GGE) model for the analysis.

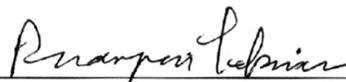
This study used secondary data during 2000 – 2005 including data on quantity and quality of water resource, water resource management policies in the past to present, Input-Output table, Social Accounting Matrices (SAM), and key parameters in the model.

The results indicated that population growth and economic development policy led to increasing water demand. During 1996 to 2004, water demand increased by 34.95 %. This growing water demand had so far been responded by increasing water supply nevertheless the water shortages were found in almost every watersheds as a result of in-efficient water use. This led to an economic losses especially losses in agricultural sector. Water quality had been worsen. During 2002–2005, share of good quality water decreased from 40% to 20%. The main cause of degraded water quality was waste water discharged by manufacturing firms, agriculture activities and households into natural water sources. Most of them were not initially abated. Water quality management from the past up to now was not on waste water treatment system at the origin source but at total quality control at the end.

From the analysis on policy impact using Computable General Equilibrium model, it was found that a set of market based instrument policies consisting irrigated water fee according to the operating cost together with tradable water resource permit could lead to a more efficient water resource management. This set of policies could decrease irrigated water use by 0.35 %, increase the shadow price of water by 4.42 % and decrease waste water by 11.46%.



Student's signature



Thesis Advisor's signature

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