Evaluation of Water Productivity of Thailand and Improvement Measure Proposals

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Abstracts

Thailand had issued a national strategic development master plan with issues related to water resources and water security in the entire water management. Water resources are an important factor of living and development of the country's socio-economy to be stable, prosperous and sustainable. Therefore, water management in both multi-dimensional and multi-sectoral systems is important and will supports socio-economic and environmental development. The direction of national development in accordance with the national strategic framework for 20 years that requires the country to level up security level in terms of water, energy and food. To response to the proposed goals, there is a sub-plan to increase water productivity of the entire water system for economical development use by evaluating use value and to create more value added from water use to meet international standard level.

This study aims to evaluate the water productivity of Thailand in each basin and all sectors such as agricultural sector, service and industrial sectors by using the water use data from water account analysis and GDP data from NESDB during the past 10 years (1996-2015). The comparison of water productivity with other countries will also be conducted and in addition, the measures to improve water productivity in next 20 years will be explored to response to the National Strategic Master Plan goals.

Water productivity is defined as output per unit of water depleted. The simplest way to compare water productivity across different enterprises is in monetary terms. World Bank presents water productivity as an indication of the efficiency by which each country uses its water resources. There are two data sets used for water productivity analyses, i.e., the first is water use data at end users and the second is Gross Domestic Product. The water use at end users are estimated by water account method based on the System of Environmental-Economic Accounting for Water (SEEA-Water) concept of United Nations. The water account shows the analyses of the water balance between the use and supply of each water resource in physical terms. The water supply and use linkage in the water account analyses separated into each phases, i.e., water sources, water managers, water service providers, water user at end user under water regulators of all kinds of water use activities such as household, industrial, agricultural, tourism, hydropower, and ecological conservation uses.

The Gross Domestic Product (GDP), a well- known measuring method of the national economic growth is not actually a comprehensive approach to describe all aspects of national economic status , since GDP does not take into account the costs of the negative impacts to natural resources that result from the overexploitation of development projects, however, at present, integrating the environment with the economy of a country to measure its economic growth with GDP is acceptable worldwide.

. The study results will show the water use at each basin, use types at end users, water productivity in each sector from 1996-2015 compared with other countries, Besides the productivity improvement measures will be explored and proposed for the National Strategic Master Plan.

Keywords: water productivity, water use, water account, Thailand.