



Tropentag, October 7-9, 2008, Hohenheim

“Competition for Resources in a Changing World:
New Drive for Rural Development”

Study on Water Resource Accounting in Hainan

YAN LIU¹, JIANCHUN GUO², ERNST-AUGUST NUPPENAU¹

¹*Justus Liebig University, Institute of Agricultural Policy and Market Research, Germany*

²*Hainan University, College of Tourism, China*

Abstract

Water resources are irreplaceable natural resources for subsistence, and they are important as environmental factors and support systems for life. Because the water resource crisis in China is aggravating, and the quality of the environment for water is deteriorating, shortage of water resource becomes one of the global-focused problems. In the ‘World Water Development’ Report (a first UN system-wide evaluation of global water resources) it has been pointed out that water problems will seriously limit global economic and social development in the 21st century, and might result in inter-state conflicts. In China, most of the rural areas face the threat of shortage of water resource. At one side, available water is reduced, because agricultural chemicals constantly undermine water resources. At the other side, due to unplanned agricultural water usage for a long time, water is wasted, which is quite astonishing. Besides unreasonable management mechanisms, it is evident that water resources are valueless or have low value, if polluted. To correctly recognise and evaluate the value of water and solve the problems of water resource by economic leverage, it is greatly significant to promote optimal allocation and sustainable utilisation of water resource. Meanwhile, evaluation of water resource is a main part of integrated environmental and economic accounting, because water resource is quite crucial economic resource for production and living, and environmental resource for maintenance of good ecological environment. This paper offers a water accounting for Hainan. Water is accounted in quantity and value, and we integrate the changing value of water into its GDP component. This offers a Green GDP, to weigh Hainan sustainability of social and economic development. This paper includes three parts:

Part 1: A physical accounting of the quantity and quality of Hainan water resource to reflect the influence;

Part 2: Using the method of restoration costs to evaluate the price of different qualities of water resource in Hainan: then accounting the stock and flow quantity of its value.

Part 3: Calculating the loss of Hainan water resource, and subtracting the costs to compensate the loss from provincial GDP to get the environmentally adjusted GDP.

Keywords: Green GDP, Hainan, method of restoration costs, physical accounting, water resource accounting