TOWARDS FOOD SELF SUFFICIENCY IN VOLTA BASIN: AN APPLICATION OF AN INTEGRATED HYDRO ECONOMIC MODEL

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ABSTRACT

A central challenge to planners and managers within the Volta basin is to identify policies that meet the agricultural water demand, while ensuring that sufficient water resources are available for other vital uses. Using an integrated hydro-economic water allocation model, M3WATER, we show how different policy changes can restructure the water demand with tradeoff between competing water users in the Basin. With increasing food prices in the world market and the relative dependence of Ghana and Burkina Faso on imported rice, M3WATER as a DSS tool is used here to analyze what investment requirements (e.g., irrigation investment, investment in R&D, etc.) and what concerted policies (e.g., trade policy, population policy, etc.) are needed to achieve different levels of self-sufficiency in rice. It also highlights what kind of trade-off, if any, will rice self-sufficiency entail with respect to hydropower generation capacity.

PALAVRA-CHAVE: Volta Basin, Hydro economic model