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Shifting the Focus of Research on Water Resources Management from Natural to Socio-Economic Watersheds — The Conceptual Framework of a Research Network on Water Questions in the Jordan Valley

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Abstract

Infrastructure for the transport, distribution and recycling of water has for a long time changed the sphere of influence of decisions on water resources management from natural watersheds to larger social and economic entities. This holds also for the Jordan Valley, where substantial amounts of the natural influx of freshwater is diverted to urban areas outside of the valley and to which even larger amounts of wastewater are channelled in return. Simultaneously, the concept of virtual water gains a new dimension due to repercussions from water quality on the pricing and sales potential of products from irrigated agriculture in remote markets. Water-related linkages within socio-economic watersheds go, however, even further than that. Particularly in water scarce regions water availability and its distribution in terms of quantity and quality between economic and ecological sectors influence a range of parameters that constitute cornerstones of the spatial, socio-economic carrying capacity. Prominent among those parameters are production and employment opportunities, impacts on markets of inputs and products, land use options and the costs of infrastructures. Effects range from changes in the living standard of families up to minimally required farm sizes, potential disturbances of ecological systems and demographic shifts between urban and rural areas. Results from the research of a network of local and German socio-economists, which were published amongst others on the German Tropical Days since 2002, laid the empirical basis for the enlargement of the underlying research concept. Agriculture and farming systems are considered as elements of rural systems, which constitute, together with related peri-urban and urban areas a socio-economic watershed. The obtained state of knowledge also allows for a more precise specification of missing knowledge from other research disciplines, such as e.g. natural and political scientists. The already started interfaces of the socio-economic research network with partners from other disciplines target on further improvements of scenarios for impact analyses of political and policy options in water resources development.

Keywords: Integrated water resource management, Jordan Valley, socio-economic watershed