



Deutscher Tropentag, October 9-11, 2002, Witzenhausen
“Challenges to Organic Farming and Sustainable Land Use
in the Tropics and Subtropics”

Economic Analyses of Water Quality in Farming Systems Development

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Abstract

Water scarcity in the West Bank represents a critical constraint to further expanding, or even maintaining the present irrigated areas. There is an increasing demand for agricultural water use to be restricted in favour of other water consumers, such as local communities and industry. The objective of this paper is to study the economics of different water quality reuse in agriculture in the light of the water scarcity, and whether irrigation water is being used wisely in Al Faria'a basin. Detailed analysis was conducted through farm family questionnaires, covering the various crops, different water qualities and irrigation methods commonly used. The criteria of living standard and crosses pending analysis in farming system were done according DOPPLER, 2001.

The results show that the groundwater annual abstraction was highly variable where the annual abstraction ranged from 2 MCM in the year 72/73 to 24.8 MCM in the year 99/00. The paper indicates that water use efficiency is relatively high. This is not due to good management, but mainly to the shortage of water in the irrigated areas. The analysis shows that there is a negative effect for the water quality mainly on the economics of the farm-family-household system and on crop production (kg/m^3) and the gross margin of water (Jd/m^3) between the three farming systems. And the analysis shows that livelihood indicators are higher where the water quality is higher than in the areas where low quality water is used to reflect the impact resulting from using different water quality in the three farming systems.

Keywords: Al Faria'a basin, economics, evaluation, farming system, water