



Deutscher Tropentag, October 11-13, 2005, Hohenheim

“The Global Food & Product Chain—  
Dynamics, Innovations, Conflicts, Strategies”

## Social aspects of irrigation designs: the interaction of water, technology and people

LINDEN VINCENT

*University of Wageningen, Irrigation and Water Engineering Group (IWE), Netherlands*

### Abstract

Irrigation — the movement of water by people for crop production, through infrastructure and human endeavour — requires consideration of social as well as technical dimensions of water control. The design of an irrigation system involves the conscious and intuitive ordering of knowledge, infrastructure and management institutions for water delivery, according to principles, practices and priorities decided by society — and not only the application of science to water conveyance and crop production. Irrigation is thus not only socially constructed in the choices of infrastructure and institutions, but also in its social requirements of use and social effects. There are conceptual frameworks that help reflect on these social dimensions at system and farm level. These can help avoid design approaches that ignore social dimensions or treat them as a black box. There have been shifts in objectives and principles shaping the design of irrigation systems. In the past, irrigation systems have had socioeconomic objectives in water supply, for settlement, food and livelihood security and economic development. There are now new techno-economic objectives driving new irrigation designs, consequent to concerns for changing water supply, production and management options — although systems must still meet objectives of value and profitability for farmers. New objectives influencing designs include: improved management performance; water and land conservation; increased flexibility in supply; better hydraulic and environmental control; and greater uniformity in water application and production, as discussed in this meeting. Understanding the social dimensions of these new design concerns alongside technical possibilities can help users and engineers negotiate for better design outcomes, and prevent false expectations of change or conflict.

**Keywords:** Irrigation systems, water supply