MSc in Water and Sustainable Development

MODULE

Irrigation system management, design and modernization

Millions of hectares equipped with irrigation are out-of-use or underutilized because of aging infrastructure, lack of maintenance and/or organizational problems. How can we combine smart irrigation design, modern techniques, improved organization and financing mechanisms (PPP, leasing, outgrower arrangements, climate finance) to improve the performance of dilapidated irrigation infrastructure? How can an existing irrigation scheme respond to changing demands (crop preferences, market influences, beneficiaries’ needs etc.)? In this module students will learn to identify components of irrigation infrastructure and analyse their use and common problems. They also will assess organizational forms of different irrigation types and the interaction between physical infrastructure and organizational form. By playing the Irrigation Management Game they will be exposed to challenges in irrigation organization and problems and myths around Water Use Associations. Students will do a case study on the technical design of modernizing of an irrigation scheme and/or expansion of existing infrastructure, including financing mechanisms and issues of sustainability. This includes the use of sensors, mobile phones, ITC in irrigation operation and management.