



Farm-Based Environmental and Economic Impacts of the Drip Irrigation System

Drip irrigation has received considerable attention from policy makers, researchers, and economists for its ability to significantly contribute improvements to water resource development, agricultural productivity, economic growth, and environmental sustainability. In this paper, the impact of drip irrigation has been studied on a farming system in terms of environmental and economic conditions using the developed Trickle Irrigation System Design Modeling (TISD). The environmental conditions included soil type, land topography, climate zones, water sources, their quality, and the farm dimensions. The economic conditions comprised of real and nominal interest rates, raw land price, and the energy and labor escalation rates. The study considered only the Benefit-Cost Ratio (BCR) to indicate the impact of environmental and economic parameters on the use of the drip irrigation system. The study used tomato-sesame as a crop rotation (line-source) and citrus as a long-life tree (point-source). Some parameters such as soil type, land topography, and water quality had a significant impact on the BCR.