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Assessment of Irrigation Schemes in Turkey: Cropping Intensity, Irrigation Intensity and Water Use

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Abstract

In Turkey, 1/3 of total agricultural areas have the potential to be economically irrigated. However, only half of this available areas are open for irrigation and when irrigation intensity are taken into account, nearly 65% of the areas that are open for irrigation are actually irrigated. In our country, 70% percent of water consumption is based on agricultural purposes. In following years, water management will gain further importance to be able to answer to the increasing demand of water industry and tertiary sectors. In this study, variance between 2000 and 2013 were evaluated with regard to water usage, irrigation intensity, and cropping intensity indicators on irrigation areas which cover 2.847.382 ha of land in Turkey. In the evaluation of cropping intensity, the distribution of crops in irrigated areas was identified as a percentage value. Most planted crops in irrigation schemes are corn, cotton, cereals, fodder crops and sugar beet, respectively. Cropping intensity was different from each other over all years. In specifying the field usage levels, irrigation intensity indicators and differences between irrigation intensity in the past 14 years in transferred and non-transferred irrigation schemes to a water-users' organisation were identified. The annual irrigation intensity was compared for 257 irrigation schemes (245 transferred and 12 non-transferred schemes) in Turkey. Irrigation intensity in the transferred schemes was higher than that of the non-transferred schemes. In order to evaluate the amount of water per unit area of use indicator was considered. This indicator increased every year. The amount of water supplied to the unit area also varied from 27.237 to 34.699 million m³. Consequently, cropping intensity, water usage and irrigation intensity were changed in between 2000 and 2013 because of global climate changes, water scarcity and increasing water demand. In order to ensure the effective water usage in irrigated areas, efficient and rational irrigation management, information system for monitoring and evaluation which encompasses all stakeholders should be set up and irrigation scheduling and modernisation of the irrigation systems should be designed.

Keywords: Cropping intensity, irrigation intensity, irrigation management, irrigation scheme, water use