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Modeling water and salt dynamics under irrigated cotton with shallow groundwater in the Khorezm region of Uzbekistan

Poor irrigation water management and the absence of efficient drainage during cotton production in the Khorezm region of Uzbekistan have led to changes in the regional hydrology and to secondary soil salinization. A study in two cotton fields assessed the direct and indirect consequences of irrigation mismanagement on the soil water and salt dynamics in the crop rooting zone. Groundwater contribution to evapotranspiration, and desalinization or salinization processes were quantified. Based on the results, decisions can be made on how to improve the irrigation scheduling at the field level and how to prevent salt accumulation.