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Typology of Farmers' Perceptions Regarding Water Conservation: a Road to Food Security

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Abstract

Water is a key resource for food production. Water scarcity, along with rapid population growth, urbanisation, and climate change, has become one of the world's most challenging problems. As a result, its impact on agricultural production and food security has caused widespread concern around the world. In the agricultural sector, as a food producer and the largest consumer of water in the world, it is necessary to manage and protect water. In this regard, farmers' water protection behaviour is an important factor for food security and ending hunger. While farmers' perceptions of water conservation are directly related to their attitudes and behaviours toward water scarcity, understanding their perceptions is important for policymaking. Farmers have heterogeneous attitudes, values, viewpoints, and behaviours, thus showing different perceptions and behaviour on water conservation strategies and policies. The aim of this study is to caracterise and classify farmers' perceptions regarding water protection in northeastern Iran (Neyshabur plain) with farmers selected using a stratified sampling method. The results of the K-Means Cluster Analysis showed that farmers can be divided into four clusters. Comparison of the four clusters reveals that farmers in the first cluster have a higher level of egalitarianism worldview, farmers in the second cluster have a higher hierarchy worldview, farmers in the third cluster have a higher level of individualism and finally, the fourth cluster has a higher level of fatalism. These different worldviews of farmers reflect the heterogeneity of farmers' attitudes and behaviours regarding water conservation in a specific region. Identifying these different perspectives can be useful in planning and policy-making in dealing with water scarcity so that each group of farmers can be offered specific strategies and policies to increase their impact and reduce costs.

Keywords: Farmers' perceptions, food security, typology, water conservation

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