



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

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## Introduction

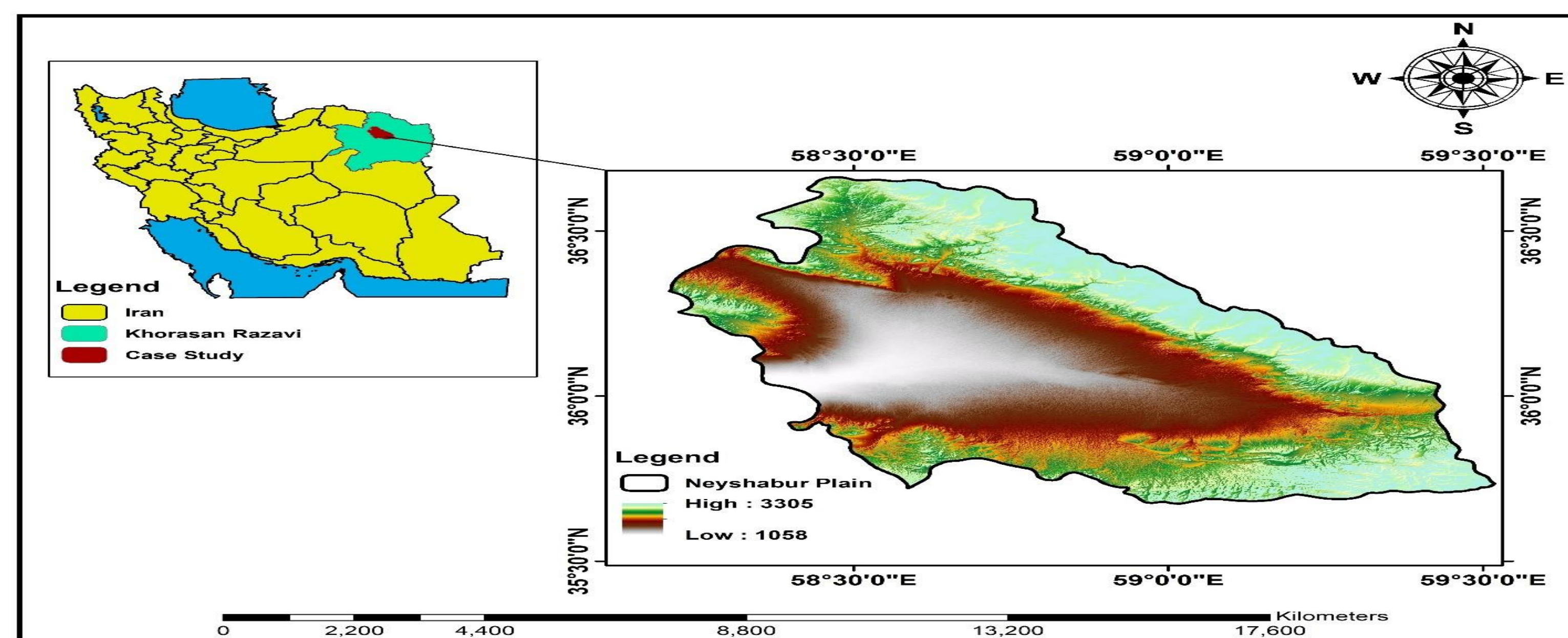
- Water scarcity, along with rapid population growth, urbanization, and climate change, has become one of the world's most challenging problems.
- In the agricultural sector, as a food producer and the largest consumer of water in the world, it is necessary to manage and protect water.
- Farmers' water protection behavior is an important factor for food security and ending hunger.
- Farmers have heterogeneous attitudes, values, viewpoints, and behaviors, thus showing different perceptions and behavior on water conservation strategies and policies.

## Objective

- To characterize and classify farmers' perceptions regarding water protection in northeastern Iran (Neyshabur plain) with farmers selected using a stratified sampling method.

## Methods

- This study is a quantitative cross-sectional survey that was carried out in Neyshabur plain in Khorasan Razavi Province in northeastern Iran.



- The sample comprises 235 farmers selected through a multistage random sampling procedure.
- The Data were collected by a questionnaire administered during face-to-face interviews with farmers.
- SPSSversion24 software was used to analyze the data.

## Results

- Descriptive analysis showed that the mean age of the farmers was 46.80 years.
- Water resources used by farmers contain well (178 farmers), Qantas (44 farmers) and well and Qantas (13 farmers).
- Farmers used different irrigation techniques including traditional (213 farmers), modern (13 farmers) and a combination of traditional and modern techniques (9 farmers).
- 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.

Worldview	Cluster 1	Cluster 2	Cluster 3	Cluster 4	F	Sig.
Egalitarianism	14.75	8.18	7.39	9.77	49.58	0.0001
Hierarchy	12.25	11.63	8.32	11.79	99.17	0.0001
Fatalism	8.62	8.84	10.16	16.21	106.32	0.0001
Individualism	9.36	8.68	13.61	9.21	30.65	0.0001
Number of people in each cluster	95	38	31	71		

## Conclusions

- Farmers have heterogeneous attitudes, values, viewpoints and behaviors on water conservation, so that they can be divided into different groups.
- 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.