Abstract: The aim of this research is to evaluate farmers’ willingness to pay (WTP) for irrigation water under shortages in the Harran Plain, the biggest area of GAP Project, Turkey and explore the potential factors that contribute to it. The data come from a sample of 21,094 farmers in the Harran Plain, 471 of them were chosen via simple random sampling method and interviewed face to face. The contingent valuation, probit and maximum likelihood methods were used for analysis. The results indicated that the average WTP is more than 85.19%, means that 2.23 fold of current price at surveyed time in case of shortages. Explanatory factors, such as secondary school, high school and university graduates from education levels, farmers residing in Harran, modern irrigation systems users, age and household numbers are increasing and pumping irrigation users and proposed increased water prices are decreasing WTP. This research is one of the first studies on this issue in GAP Region-Turkey. The results are important for decision makers and contain useful information about value of water in case of water shortages by farmers’ side.