

## Assesment of water resource sustainability in Sistan on economic view

**Abstract** In this study, the sustainability of water resources in Sistan region has been assessed by using fractional programming. Fractional programming is a proportion of a maximum objective function and a minimum objective function. The purpose of this study is to achieve sustainability index and determine optimal crop pattern. This work was based on two senario. First was using of total land which in the sustainability index was achieved ۹,۳۶. In second senario sustainability index was obtained ۶,۰۶ that was less than previous value and this is due to decreased profit. The optimal pattern under the first assumption was obtained wheat with ۴۹۳۳۳ha and optimal pattern under second assumption was wheat, barely, sorghum and ... with ۶۱۳۴۲, ۸۰۸۳, ۲۰۳۲ and ۱۲۰۴۲ respectively. concludly, it is necessary that change the crop pattern along with minimizing water consumption and maximizing gross income of farmers and also government support them.

**Keywords:** Fractional programming, Sustainability index, Water resources, Crop pattern

**Title:**

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