

## عنوان مقاله:

(Performance of Pumping Stations in Relation to Irrigation Management (Case Study: Khuzestan Province, Iran

## محل انتشار:

مجله علوم و فناوری کشاورزی، دوره 21، شماره 5 (سال: 1398)

تعداد صفحات اصل مقاله: 16

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## خلاصه مقاله:

Since water pumping stations supply most of the water for irrigation schemes and consume considerable percentage of energy in some countries, performance evaluation of these facilities, especially in relation to irrigation management, is essential. Therefore, definition and determination of some indices could be effective for evaluation process, planning for future, and optimal use of water and energy. Since there is no typical method for the assessment of irrigation pumping systems in the literature, in the present study, some evaluation indices in the areas of operation and maintenance, management, energy, and economic performance of the irrigation pumping stations are introduced. Some irrigation pumping stations in Khuzestan Province (Iran) and energy-water relations of these projects were evaluated based on the proposed integrated approach. According to the results, the first step in evaluating the performance of these facilities is the establishment of a system for monitoring and recording the information. Evaluation of the operation and maintenance of these pumping stations shows the average status. Therefore, the weakest parameters, i.e. required hydraulic equipment, periodic monitoring of hydraulic parameters and security against water hammer, have to be strengthened and pumping stations be equipped properly. It was also shown that to achieve the ideal management of the case studies, the profitability of operating company should be improved. Besides, due to high energy loss in irrigation pumping stations (up to 49% in this study), use of equipment for reducing energy consumption and proper selection of pump and electromotor should be a priority in the design and management phases. The required power of electromotor is overestimated by at least 25%

## کلمات کلیدی:

Irrigation schemes, Performance indicators, Productivity of water and energy  
ایستگاههای پمپاژ، شاخصهای عملکرد، شبکه های آبیاری، بهره وری آب و انرژی

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