

## **Development and Completion of Performance Evaluation Model (PAPIS) for Pressurized Irrigation Network (Case Study : Aidoghmoosh – Mianeh)**

### **Abstract:**

Lack of water resources, high efficiency of pressurized irrigation networks and increasing of transmission pipe production have been caused developing these networks. The different bases in design, implementation and operation of pressurized irrigation networks comparison with open channel irrigation networks, the assessment and improvement of the performance of these networks are essential. On the other hand, the for applied assessment methods, the main and farm systems were not studied independently and simultaneously. In this grade NPAPIS model were developed with capability evaluating management, technical, economical, environmental and social perspectives. For each perspectives of NPAPIS model is defined several appropriate sub-perspectives for both the main and farm systems. This model is capable evaluate the validity and the performance grades of the assessments for perspectives and sub-perspectives and the entire network. This model is able to assess briefly with a limited number of key indicators resulting expedition and reduction cost. In this model, the weights of indicators, sub-perspectives and perspectives are calculated using analytical hierarchy process with flexibility user-calculated changes and the assessment takes place through the classical method. In this research the assessment of Akramabad unit Aydoghmoosh irrigation network is studied using NPAPIS model. The results indicate that the best mark for performance the assessment belongs to the management and technical perspectives with performance grade of 77.3% , 72.9% , with the validity of the assessment of 95.5% and 72.9%, respectively and the worst mark belong to economical perspective with the performance grade of 24% and with validity of 51.1%. The successful assessment of Aydoghmoosh irrigation network by NPAPIS model, recommends that this model is used as a appropriate tool to performance assessment of other pressurized irrigation networks.

### **Keywords:**

Performance assessment model, Aydoghmoosh irrigation network, Pressurized system.



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