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## ***Determination of Appropriate Management Strategies for Natanz Urban Watershed Using SWOT Matrix***

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### **Abstract**

#### **1- Introduction**

The strategic management and planning is the highest level of management that has a long-term attitude in resource allocation and decision making. Relying on a combination of perspectives, policies, structures, and effective systems in this field, the strategic approach in water resources management prevents sudden future events and crises that will lead to the sustainable development of water resources (Pour Fallah et al., 2009). Determination and development of water resources are one of the important steps in sustainable use of water resources. There are several methods and models for this purpose, each of which contains its own concept and insight and follows specific techniques and instructions. Among the various models, the SWOT matrix, which assesses the system strengths, weaknesses, opportunities, and threats, is more common and well-known (Hill and Vetbrook, 1997). Extraction of a strategy based on the strengths and weaknesses of the internal environment and the opportunities and threats outside the management field provides realistic solutions to the decision maker, and the closeness or distance of the solutions from the sustainable development model - planning (Azarnivand et al., 2013). Although the common use of this model is mainly related to the strategic planning of production and service organizations, its unique features make it possible to use it in the analysis of various issues such as watershed management at extra-

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organizational levels. More recently, the use of SWOT analysis for water resources management has been proposed in previous research (Petusi et al., 2017; Negar, 2015).

## **2- Methodology**

This study was performed in four main stages, namely identification of internal and external factors, weighting of factors, creation of matrix for the evaluation of internal and external factors, and finally selection of appropriate strategies (Ghazavi, 2019).

The formation of SWAT matrix leads to the presentation of four management strategies as follows.

- Competitive/Aggressive Strategy (SO): By implementing this strategy, an effort is made to take advantage of external opportunities.
- Review/Conservative Strategy (WO): The goal is to take advantage of opportunities in the external environment to improve internal weaknesses.
- Diversity Strategy (ST): Reduce the impact of external threats using strengths.
- Defensive Strategy (WT): Defensive mode that aims to reduce internal weaknesses and avoid external threats (Sarai and Shamshiri, 2013)

## **3- Results and discussion**

According to the results of the present study, the total final score of internal factors was 2.98 in the evaluation matrix, which can mean the strength of internal factors. The total final score of external factors was 2.89 in the evaluation matrix, which means that Natanz city has been able to take advantage of the factors that create opportunities or situations, or avoid some of the factors that threaten the city.

Based on the results, the best strategic position for Natanz urban watershed is in the offensive range, which focuses on internal strengths and external opportunities. Besides the existing capabilities and potentials in Natanz should be used in managing runoff management.

#### **4- Conclusion**

In order to provide appropriate strategies and strategies for strategic management of Natanz urban watershed, strengths, weaknesses, opportunities, and threats were studied using the SWOT method. The findings show that Natanz city, despite a low level of the urban basin for various reasons, was not able to make optimal and desirable use of this natural facilities for its development and progress. The existence of impenetrable levels, digging numerous wells to supply water to factories and industries, and the lack of municipal wastewater treatment plants are some of the threats to the region. According to the results, aggressive strategy is the best structural strategy for the Natanz urban watershed.

**Keywords:** Water resources, Urban watershed, Flood, Strategy, SWOT, Natanz city

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