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Investigation of Iran karstic water resources vulnerability against natural and anthropogenic pollutants

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Karstic regions including a vast part of Iran and karstic water is one of the most important drinking water suppliers in Iran. Although these water resources have suitable quality, high vulnerably of them causing protection and keeping is especially important in karstic aquifers. In order to have suitable protective management in karstic zones, three essential factors should be considered.

1. Recognizing main pollutant sources and acquaintance with their characterizations: most important pollutant sources and locations that can affect on quality of karstic water resources are:
    - Urban sources: include leakage from sewages, solid and liquid material in weakest water, rubbishes and etc.
    - Industrial sources: include leakage from tanks and tubes, mining activities, oil regions and gases spreading.
    - Agricultural sources: include back water from farming, animal and chemical manure, pesticides and insecticides.
    - Other sources: include surface evacuations, expressway contamination, salt water impression and etc.
2. Determination of main kinds of pollutant in water resources: Main pollutants are: micro-organisms, hydrocarbons, pesticides, heavy metals, nitrogen compounds, radio- isotopes, non-organic compound.

3. Weighing pollutant behavior in karstic aquifers: each pollutant behavior shows that vulnerability of karstic system and effectiveness intensity depend on numerous factors such as: reservoir structure, covering formations, thickness and karstification rate of non-saturated zone, entrance ways of pollutant to aquifer, surface water entrance to aquifer.