

'Karez' system of irrigation

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In news- Karez, being one of the types of water management and irrigation systems in Afghanistan, is under threat under the resurgent Taliban rule.

Key updates-

- Afghanistan, a semi-arid country, is losing its northern and central mountain glaciers due to climate change.
- These glaciers provide meltwater to people, especially in rural areas through Surface water or canals, underground water or borewells and **Qanat / Karez**.
- The Karez system has the potential to **solve problems of water in** Southern and southwestern regions of Afghanistan as there is no other water source.
- Some 9,370 Karezes are operating in 19 Afghan provinces with the majority of them concentrated on the eastern, southern and western flanks of the Hindu Kush mountains.
- These are **part of the 'Pashtun Crescent'**, the heartland of the Pashtuns, the main ethnic group in the Taliban and the country's largest ethnicity.
- Kandahar, the traditional Pashtun capital, where the Taliban emerged in 1996, is also located in this area.
- Several Karezes have been destroyed in the more than 40 years of war in Afghanistan since the Soviet invasion in December 1979.

What is a Qanat / Karez?

- This system of **underground vertical shafts** in a gently sloping tunnel is built from an upland aquifer to ground level.
- It has its origins in Persia and later spread to Arab and Turkic lands.
- The entire system is a planning and execution of the forces of a watershed.

- The wastewater is never mixed with drinking water.
- They are energy efficient and green since they **use the force of gravity** rather than any machines running on fuel.
- Water in them does not evaporate and is also filtered till it comes to the surface.
- There is no depletion of the aquifer since excessive use is impossible.
- Its maintenance is also low-cost.
- The **first Karez system in India was built in the city of Bidar of Karnataka** during the reign of Bahamani Sultan Ahmad Shah Wali (1422-1436), who shifted the capital from Gulbarga to Bidar.