

## Conserving Naubad Karez Cultural Landscape - a Multi-Criteria Approach to Urban Planning

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**Abstract :** Human civilizations across the globe stand testimony to water being one of the major interaction points with nature. The interactions with nature especially in drier areas revolve around water, be it harnessing, transporting, usage and management. Many ingenious ideas were born, nurtured and developed for harnessing, transporting, storing and distributing water through the areas in the drier parts of the world. Many methods of water extraction, collection and management could be found throughout the world, some of which are associated with efficient, sustained use of surface water, ground water and rain water. Karez is one such ingenious method of collection, transportation, storage and distribution of ground water. Most of the Karez systems in India were developed during reign of Muslim dynasties with ruling class descending from Persia or having influential connections and inviting expert engineers from there. Karez have strongly influenced the village socio-economic organisations due to multitude of uses they were brought into. These are masterpiece engineering structures to collect groundwater and direct it, through a subsurface gallery with a gradual slope, to surface canals that provide water to settlements and agricultural fields. This ingenious technology, karez was result of need for harnessing groundwater in arid areas like that of Bidar. The study views this traditional technology in historical perspective linked to sustainable utilization and management of groundwater and above all the immediate environment. The karez system is one of the best available demonstration of human ingenuity and adaptability to situations and locations of water scarcity. Bidar, capital of erstwhile Bahmani sultanate with a history of more than 700 years or more is one of the heritage cities of present Karnataka State. The unique water systems of Bidar along with other historic entities have been listed under World Heritage Watch List by World Monument Fund. The Historical or cultural landscape in Bidar is very closely associated to the natural resources of the region, Karez systems being one of the best examples. The Karez systems were the lifeline of Bidar's historical period providing potable water, fulfilling domestic and irrigation needs, both within and outside the fort enclosures. These systems are still functional, but under great pressure and threat of rapid and unplanned urbanisation. The change in land use and fragmentation of land are already paving way for irreversible modification of the karez cultural and geographic landscape. The Paper discusses the significance of character defining elements of Naubad Karez Landscape, highlights the importance of conserving cultural heritage and presents a geographical approach to its revival.

**Keywords :** Karez, groundwater, traditional water harvesting, cultural heritage landscape, urban planning

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