

## **[Keynote Talk]: Some Underlying Factors and Partial Solutions to the Global Water Crisis**

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**Abstract :** Water resources are being depleted and degraded at an alarming and non-sustainable rate worldwide. In some areas, it is progressing more slowly. In other areas, irreversible damage has already occurred, rendering regions largely unsuitable for human existence with destruction of the environment and the economy. Today, 2.5 billion people or 36 percent of the world population live in water-stressed areas. The convergence of factors that created this global water crisis includes local, regional, and global failures. In this paper, a survey of some of these factors is presented. They include abuse of political power and regulatory acquiescence, improper planning and design, ignoring good science and models, systemic failures, and division between the powerful and the powerless. Increasing water demand imposed by exploding human populations and growing economies with short-falls exacerbated by climate change and continuing water quality degradation will accelerate this growing water crisis in many areas. Without regional measures to improve water efficiencies and protect dwindling and vulnerable water resources, environmental and economic displacement of populations and conflict over water resources will only grow. Perhaps more challenging, a global commitment is necessary to curtail if not reverse the devastating effects of climate change. Factors will be illustrated by real-world examples, followed by some partial solutions offered by water experts for helping to mitigate the growing water crisis. These solutions include more water efficient technologies, education and incentivization for water conservation, wastewater treatment for reuse, and improved data collection and utilization.

**Keywords :** climate change, water conservation, water crisis, water technologies

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