



Plenary Speech IV

Water resources management in Sri Lanka in a global context: challenges and key solutions

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Abstract

The world is currently grappling with an unprecedented water crisis, driven by a complex interplay of environmental, social, and economic factors. Over 2 billion people live in regions experiencing high water stress, a figure projected to rise significantly in the coming years due to various interrelated challenges. Climate change stands out as a critical driver, with rising temperatures altering precipitation patterns. This leads to more frequent and severe droughts in some areas, while others face increased flooding. The Intergovernmental Panel on Climate Change (IPCC) warns that by 2050, water availability is expected to decline in many regions, exacerbating existing shortages and placing additional stress on vulnerable populations. As the global population grows—projected to reach nearly 10 billion by 2050—the demand for water is anticipated to increase dramatically. Rapid urbanization will see cities absorbing over 60% of the world’s population by mid-century, exerting immense pressure on local water resources and often resulting in over-extraction and pollution. The UN estimates that by 2030, nearly 700 million people may be displaced due to intense water scarcity, heightening competition for this vital resource. Unsustainable agricultural practices, industrial activities, and inadequate wastewater management significantly contribute to the crisis. Agriculture accounts for approximately 70% of global freshwater use; excessive irrigation and reliance on chemical fertilizers lead to substantial water wastage and pollution. In this context, Sri Lanka’s situation—while unique due to its geography and cultural context—mirrors many of these global trends. The country faces the dual challenge of managing limited water resources while meeting the needs of its growing population and economy. Key challenges for Sri Lanka include pollution, with around 70% of rivers contaminated primarily by industrial runoff and agricultural chemicals; climate change, which results in increased variability in rainfall; and groundwater depletion, exacerbated by rising demand. Addressing these multifaceted challenges necessitates a comprehensive approach that integrates innovative strategies, community involvement, and effective policy reforms. Integrated Water Resources Management (IWRM) offers a holistic framework for the coordinated development and management of water, land, and related resources. Sustainable water management requires international cooperation and a robust policy environment to promote effective practices. In conclusion, a multifaceted approach integrating IWRM, innovative technologies, community engagement, and strong policy frameworks is essential for achieving global water security and environmental sustainability.

Keywords

Climate change, drought management, global water crises, water resources management, water scarcity