# Climate Change and Water Nexus: Gearing Academic Curriculum Towards Adaptation

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**Extended Abstract**

Water, a primary medium through which climate change exhibits its impacts in different forms; floods and droughts, glacier melting and seawater level rise. The direct impact of climate change on the water cycle is evident through the diminishing quantity and quality of water resources and water supply reliability that is available to meet human demands currently. Many developing countries that are already facing multiple water challenges such as water scarcity, saltwater intrusion, decreasing water availability, are still more vulnerable to the compounding climate change effects. The current water environment presents a dire need for appropriate, implementable adaptive solutions to arrest the continued trend of diminishing freshwater resources and its consequences.

Strategic approaches are essential to improve water environment by focusing on aspects such as water security provider of the region, water users; industry, domestic and agriculture, water demand and simple technologies. A number of drivers, governments and organizations have been promoting water-related adaptation approaches such as expansion of rainwater storage and water conservation practices, water-saving and water reuse technologies which, are indispensable for reducing vulnerability to changing water regimes. In many cases, existing techniques and technologies used to deal with past water level changes could also serve as effective adaptations for future climate change.

Incorporating adaptation to climate change into planning processes is a necessary strategy for sustainable development over the long-term by making appropriate adjustments and changes, at every level, from community to national and international. Since, the climate change impacts do not happen in isolation and impacts in one sector can adversely or positively affect another, interlinking and understanding of the issues are necessary before moving towards any adaptive measures. In this context, the combined upstream water supply-side issues and downstream water issues are the critical challenges for developing countries especially, to the population concentrated within 100 km coastline.

Planned adaptation interventions in water sector including both supply and demand-side options, will need to address emerging water issues driven by climate change. Academics play a prime role in making adaptation efforts through extensive education in analyzing, understanding the upstream and downstream water issues, the long-term adaptive strategic approaches framed by government and other organizations and adaptive technology advancement especially membrane-based water reuse technology.

A paradigm shift of the current curriculum from water and wastewater treatment towards meeting the standards and development of compact reclamation system, to adaptation approaches such as membrane-based water reuse, is to great extent essential. The present curriculum calls for adaptation lens to look at “Climate Change and Water Issues” especially through membrane-based water reuse technology.