

Water Scarcity in the Gomti Nagar Area under the Impact of Climate Changes and Assessment for Groundwater Management

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Abstract : Climate change has led to decreased water availability in the Gomti Nagar area of Uttar Pradesh, India. Climate change has reduced the amount of precipitation and increased the rate of evaporation. The region is heavily reliant on surface water sources (Gomti river, Sharda Canal) and groundwater. Efficient management of groundwater resources is crucial for addressing water shortages. These may include: Exploring alternative water sources, such as wastewater recycling and desalination, can help augment water supply and reduce dependency on rainfall-dependent sources. Promoting the use of water-efficient technologies in industries, agriculture, and water-efficient infrastructure in urban areas can contribute to reducing water demand and optimizing water use. Incorporating climate change considerations into urban planning and infrastructure development can help ensure water security in the face of future climate uncertainties. Addressing water scarcity in the Gomti Nagar area requires a multi-pronged approach that combines sustainable groundwater management practices, climate change adaptation strategies, and integrated water resource management. By implementing these measures, the region can work towards ensuring a more sustainable and reliable water supply in the context of climate change. Water is the most important natural resource for the existence of living beings in the Earth's ecosystem. On Earth, 1.2 percent of the water is drinkable, but only 0.3 percent is usable by people. Water scarcity is a growing concern in India due to the impact of climate change and over-exploitation of water resources. Excess groundwater withdrawal causes regular declines in groundwater level. Due to city boundary expansion and growing urbanization, the recharge point for groundwater tables is decreasing. Rainwater infiltration into the subsoil is also reduced by unplanned, uneven settlements in urban change.

Keywords : climate change, water scarcity, groundwater, rainfall, water supply

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