

In 2010, due to excessive rains, low lying agricultural fields of many peri-urban residents in Gurgaon got flooded along with overflow of water from the sewerage canal that carries the waste of Gurgaon. Most vulnerable were tenants, who need to pay a fixed amount to their land-owners, even if the crops failed.



Gurgaon, India



Hyderabad, India

Most of the peri-urban villages in Hyderabad do not get direct water supply from the Water Board and are thus, dependent on groundwater for their needs. Private water tankers flourish and operate in such a scenario where the surface water is still available for use, although in most cases polluted by industries and other commercial units. Many farmers sell water from their bores to tanker companies for reselling to the industries and other residential areas devoid of regular drinking water supply.

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## Water Security in Peri-Urban South Asia

*Adapting to Climate Change & Urbanization*



## INTRODUCTION

Urbanization is a defining process and characteristic of South Asia. The peri-urban zone, conceptualized as a transition between rural and urban- emerging out of development activities is manifested in the dynamic social and economic interactions. This process of changing peri-urban landscape is leading to acquisition of diverse water sources and iniquitous use by different users that contributes to making water supply unpredictable and variable.

Climate change is expected to severely alter weather patterns, which will have adverse effects on water availability. This could lead to increased water-induced hazards like floods, inundations, soil erosion, prolonged droughts etc., thus exerting a heavy toll on human life and livelihoods especially in the South Asian region. Cities are particularly vulnerable because of the complex and fixed nature of urban infrastructure that is responsible for more runoff and less recharge during spells of shorter but more intense rainfall combined with increased evapo-transpiration and groundwater exploitation. Such a situation will lead to dangerous heat events and increased vulnerabilities, not just in cities but also in the peri-urban areas.

## THE PROJECT

This project is exploring the implications for rapid urbanization and climate change on water availability for vulnerable communities in four South Asian cities of Khulna (Bangladesh), Gurgaon and Hyderabad (India) and Kathmandu (Nepal). It also involves research on how their adaptive capacity can be improved through technical and institutional interventions. It seeks to bring together a large number of key stakeholders which is important as many issues of peri-urban areas fall neither under the mandate of urban nor rural authorities, and thus tend to be neglected by both. The project involves elements of research, stakeholder participation as well as capacity building of target groups-both government and civil society- in meeting these challenges more effectively.

An agricultural field in Khulna, Bangladesh which is becoming saline, leading to much lesser production than earlier. Surface water salinity near Khulna, Bangladesh recorded in 2007, was the highest in 32 years.

Khulna, Bangladesh

Rampant sand mining, accelerated soil erosion and land degradation is seen at one of the field sites in Kathmandu. Farmers in the area also report of damage caused to their lands and standing crops due to increasing sediment flow from these mining sites.

Kathmandu, Nepal

## OBJECTIVES

- To understand the implications of urbanization processes for water access and use in four selected peri-urban research sites in South Asia
- To examine water related vulnerability, adaptation and resilience of different social groups in the context of climate change

## RESEARCH AREAS

Some of these peri-urban study areas are largely characterized by traditional livelihoods where the population is likely to be hard-hit due to the rapid urbanization processes, whereby lands are required for increasing demands for construction of buildings. Being nearer to the sea, climate change impact is very specific for Bangladesh, while in Gurgaon and Hyderabad which are the study sites in India, process of change has been induced by massive growth of the Information Technology (IT) sector.

In Nepal, apart from the fragile mountain ecosystem disturbed due to urbanization process, the impact of melting glaciers due to global warming generates much concern for the future.

## WHAT IS PERI-URBAN?

Several concepts exist regarding this term

- 📍 A geographical space where rural meets urban
- 📍 Transitional zone of intense interactions, flows and linkages between urban-rural
- 📍 Located within metropolitan areas of a country but often outside formal urban jurisdictions
- 📍 Multiple use of resources, co-existing in the same area