

# *APN project: Development of new water supply strategies in two major cities of India and Sri Lanka in the context of climate change, rapid urbanization and population growth: a vulnerability assessment approach*

## **About the project**

This project aims to re-examine the current urban water use system and propose a new one to cope up with the future climate change, rapid urbanization and population growth in two South-Asian Cities. In the new system, each water resource will be properly allocated to each water use by considering the balance between water supply and demand. This requires information on the available amount, and chemical and biological quality of various water resources, recharge zone identification for sustainable planning as well as people perception and willingness to pay. Two of main cities in South Asia; Guwahati (India) and Colombo (Sri Lanka), are selected as research fields. Both locations fall under Asian monsoon region but are in different phases in economic and demographic growths. Henceforth, suggested water supply strategies are going to be an integral part of infrastructure development of urban area especially in developing countries. Climate change and related uneven rainfall distribution cause a water shortage. In such areas, safe water supply might become unsustainable, because water pollution becomes severer by a decrease of water recharge and unintentional shift of water resources. We intend to evaluate urban water use strategies suitable for each city from various angles and develop Water Quality Information Platform (WQIP) and new strategies of sustainable water supply under climate change scenario. The research will have an impact not only on the critical scientific understanding of emerging chemical and biological pollutants issues posing threat on water potable use but also on the development of a sustainable water management in urban and agriculture sectors.

## Objectives of the Project

- ✓ To evaluate the current urban water use system and people perception of future drinking water issues in two major cities of Asia Pacific region (Guwahati, India and Colombo, Sri Lanka).
- ✓ To assess the health risk from the current water sources considering the expected quality change by climate change. It includes understanding of the vulnerability of water supply system.
- ✓ To understand the holistic water cycle of the particular cities by tracing water recharge source and zones.
- ✓ To propose a new water supply system more adaptive to the future climate change where each water resource will be properly allocated to specific water use by considering the balance between water supply and demand

## Collaborators



### Lead PI

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*Indo-Japan: Development of new water supply strategies for Brahmaputra watersheds of India under climate change regime.*

*Collaborators*

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## **Relevance to policy processes and sustainability**

- Expected outcomes is to educate and knowledge transfer to promote general public to use alternative waters to support increased water demand.
- General public often does not understand the quality difference among different types of possible water resources and hence many communities hesitate to use reclaimed waters and rain waters.
- Providing easily understandable water quality information of various water resources will be very useful for different stakeholders ranging from the policymakers to the end users.
- For the dissemination of these techniques, we are looking for introducing books on water conservation and proper utilisation techniques in primary schools.
- Japanese examples of water conservation techniques like rainwater harvesting, water recycling and reclamation can be adopted in these regions also to ensure sustainability.
- Based on the quality of the water, their suitability for using in different purposes will be determined.

## **Relationship with global change programs and networks**

- Due to established fragility of drinking water source for developing countries, the data collected from this study will be highly instrumental in further research and development of sustainable drinking water scenario in developing countries.
- The knowledge obtained from such research one can prove essential in decision making processes related to sustainable water management.
- Scarcity of drinking water source with its magnitude seeing a steep increase, immediate action is required to be taken in this regard.
- The policy makers while designing new policies to tackle drinking water scarcity can take into account the experience obtained from study of two cities.
- The data obtained would be handy for the many departments such as IPCC, IPBES, WCRP, START, IAI and in predicting and making policies to tackle future scarcity of drinking water issues.

## **Last Year Activities in Japan**

- ❖ Indian PIs visit to the University of Tokyo
- ❖ Kickoff meeting and workshop at Kanazawa University, Kanazawa among all three countries collaborators, Indian student, Japanese and other international students and research scholars and invited speakers







## This Year Activities in India

- ❖ University of Tokyo PIs visit to the Indian
- ❖ Kickoff meeting and workshop held at Tezpur University, Indian student, Japanese and other students and research scholars and invited speakers







