



## Restoration of traditional water supply sources in Indore, India

**Government:** Madhya Pradesh, India

**Region:** South Asia

**Sector(s):** Resilience

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### Summary

A climate resilience strategy for the city of Indore in Madhya Pradesh is being developed as a part of the Asian Cities Climate Change Resilience Network (ACCCRN). The strategy hopes to bring back local/traditional water management techniques to restore water resources for the city, while complying with climate-friendly policies.

A pilot of the project is being implemented by the Department of Environment, Government of Madhya Pradesh (GoMP), through the State Knowledge Management Centre on Climate Change (SKMCCC) and Environmental Planning and Coordination Organisation (EPCO). These entities are working with the Indore City Municipal Corporation to **enhance their adaptive capacity to address climate change through the conservation of traditional water supply sources** in the city.

The objective of this project is to conserve and rejuvenate 330 of Indore's traditional water supply sources with community participation. The project will directly benefit around 16,500 households and save revenue for Indore Municipal Corporation due to reduced water pumping costs. This will also reduce greenhouse gas emissions as less energy is required for pumping under the business as usual water supply system.

### Background

Madhya Pradesh, a land-locked state in central India, is highly vulnerable to the impacts of climate change due to its topography and social structure with around 70% of its population living in rural areas.

Changing climatic conditions, such as increasing average temperatures, changes in spatial and temporal distribution of monsoons and increasing rainfall frequency, are severely impacting climate sensitive sectors such as water, agriculture and forestry and threatening livelihood security of the majority of the population.

**Rs. 51.6 million**

Expected savings per year to Indore Municipal Corporation





The Department of Environment in the State Action Plan on Climate Change (SAPCC) has outlined key sector-specific strategies that are needed to adapt to and mitigate the impacts of climate change and build resilience of the vulnerable population.<sup>1</sup>

### **Project details**

Indore, one of the cleanest cities in India, and the most populous in the state of Madhya Pradesh, experiences rainfall of 700 to 800 millimetres (28 to 31 in) during the southwest monsoon season (July to September).

Climate change poses unique threats to the Indore water supply system. Downscaled climate information suggests an increase in surface temperature of 2° - 4°C, and a change in rainfall amounts in the range of -4% to +8% by 2046-2065. The current water demand is around 290 million litres per day and, with rapid urbanisation and a projected increase in population to three million by 2021, the water demand is expected to rise to 421 million litres per day.

As the water footprint of the city keeps growing, Indore Municipal Corporation needs to pump water from a distance up to 70 km from the nearby Narmada River - costing Rupees 45 per cubic meter of water (including 'unaccounted for water'). However, there is an increasing stress on the water availability of the Narmada River due to erratic rainfall, impacting the lifecycle of the river. In addition, traditional water supply sources of city have been neglected as piped water supply provides water at the doorstep level, leaving many traditional labourers out of work.

This project hopes to address the twin challenges of **rising water demand** and the **impact of climate change** in the city of Indore by:

- Developing water resilience for Indore with regard to climate change
- Restoration of traditional water sources and a reduction in the burden on the existing water distribution system

The project started in March 2017 and is funded by the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India under the Climate Change Action Programme (CCAP).

### **Results**

So far, the project has positively impacted environmental, social and economic systems in Indore.

#### **Environmental**

- Conservation of water through traditional, low-carbon intensive techniques

#### **Social**

- Improved water availability to marginalized sections of the city and strengthened capacity of women and marginalized groups to adapt to climate change and variability related to water availability. Water will be readily available, primarily to the dependent marginalized communities and women who had to travel long distances to fetch water will be less exposed to the vagaries of climate change
- Improved quality of water contributing to better health

#### **Economic**

- Savings of approximately Rs. 51.6 million per year for the Indore Municipal Corporation
- Reduced costs associated with the procurement of water
- Increased household and Indore Municipal Corporation savings

### **Way Forward**

- Water Quality Assessment of all 330 water supply sources to determine suitability for drinking
- Dedicating the revived open wells and step wells back to the communities

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<sup>1</sup> [Madhya Pradesh State Action Plan on Climate Change](#)



- Awareness campaigns on traditional water sources for communities
- Garnering policy support to replicate such initiatives and integrate learnings
- Detailed hydro-geological assessment of traditional water supply sources to assess their yield potential & response to recharge
- Developing online dashboard for all the 629 identified locations of Indore

### Enabling conditions

The project is being implemented by EPCO, the State Designated Agency on Climate Change in MP. The leadership has been provided by Executive Director, EPCO and Commissioner, Indore Municipal Corporation at all the levels during the project. The progress has also been reviewed by Principal Secretary, GoMP, Environment Department.

### Challenges

- Resolution of community conflicts over Common Property Rights (CPR)<sup>2</sup>

### Key lessons learned

- Support and ownership of local community is critical to the success of any project involved with natural and common resources.
- It is vital to have buy-in and close coordination among various stakeholders - including communities - in order to successfully implement such a challenging project.

#### For more information:

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<sup>2</sup> [Common Property Rights](#): Rights that individuals or community have on the use and management of scarce resources, in this case water. Rules or criteria may be established under law or regulation to govern the use of such scarce resources in a society to resolve competition and conflict among individuals.