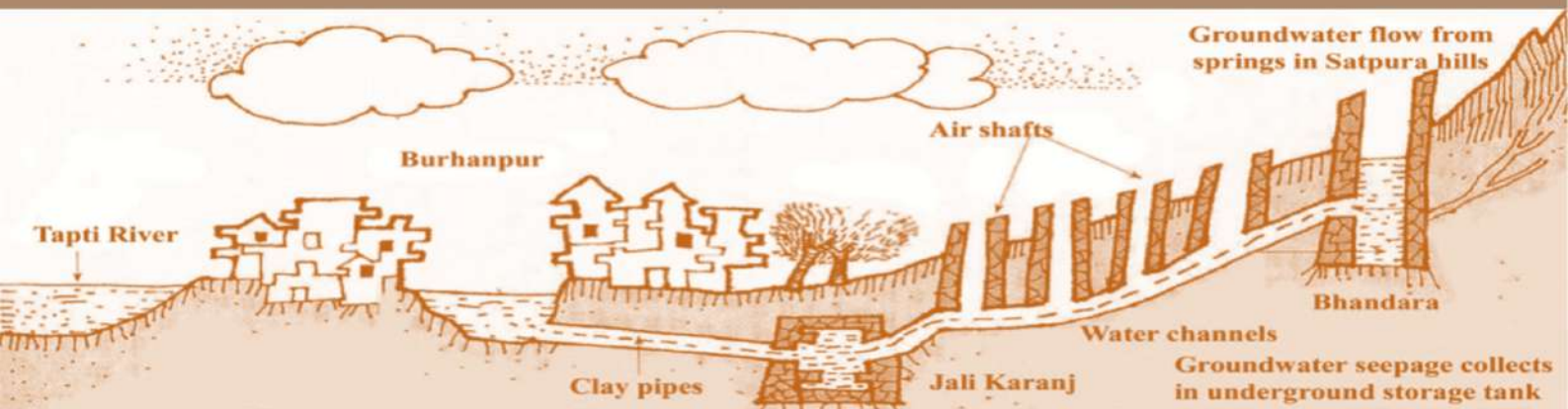




Enhancing Adaptive Capacity to Climate Change through Conservation of Traditional Water Supply Sources of Burhanpur City

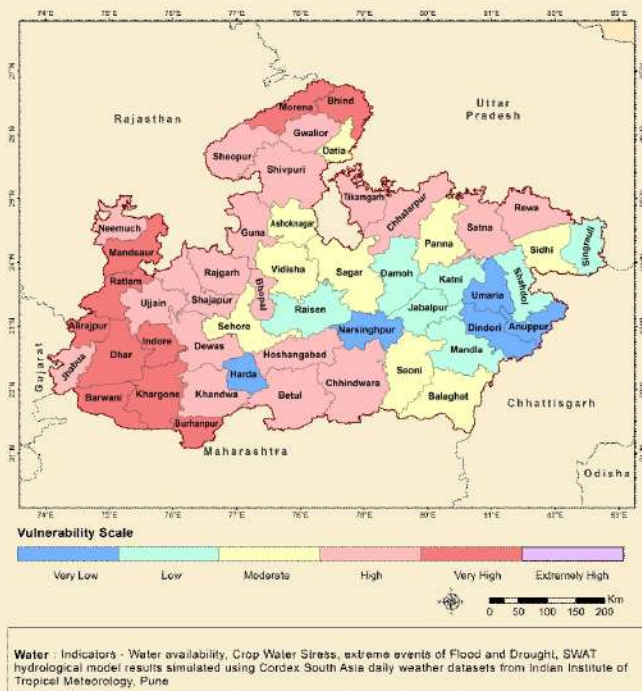
A Project Sanctioned by
Ministry of Environment, Forests and Climate Change
Under Climate Change Action Program, Government of India



State Knowledge Management Centre on Climate Change
Environmental Planning and Coordination Organization (EPCO)
Department of Environment, Government of Madhya Pradesh

BACKGROUND

District Water Vulnerability - Madhya Pradesh
Vulnerability: Current (1981-2010)



Indian cities are experiencing rapid urbanization and peri-urban growth in India. In the last decade, Madhya Pradesh has registered a high urban growth as compared to its rural population. At present, the State's total urban population is 20.1 million (28% of its total population) which is primarily concentrated in 476 urban centres of the state (Census, 2011). This has led to a challenging gap between demand and supply of water.

OBJECTIVES

- Enhance resilience of Burhanpur city against climate change impacts by conserving traditional water supply sources (Kundi Bhandara Network, Wells & Bawdies)
- Augmenting groundwater levels through rainwater harvesting and catchment area treatment
- Community participation for effective management of water sources

Burhanpur city is no exception.

The impacts of water scarcity are felt particularly in the city areas with high population density, poor settlements that have limited or no access to piped water supplies and peri-urban areas where the supply network is yet to be extended. Thus, there is an urgent need to conserve the local traditional water systems and improve water use efficiency.

As per the latest Climate Change Vulnerability Assessment study of M.P., climate variability projected to poses unique threats to Burhanpur's water supply system. In addition, downscaled climate information suggests an increase in surface temperature from 2° to 4 °C, and a decrease of rainfall amounts from -3% to -8% by 2050- 2080 in the Tapti River Basin.

Department of Environment, Forest Department GoMP and Burhanpur Municipal Corporation (BMC) are jointly operationalizing a unique strategy for restoring traditional water resources as envisioned under State Action Plan on Climate Change (SAPCC) and National Water Mission (NWM). MoEFCC, Government of India (GoI) has sanctioned a grant of Rs. 5 crore under Climate Change Action Program.



QANATS OF BURHANPUR

- UNESCO Heritage City network known for “Qanats” an unique 400 year old traditional water harvesting system, consists of underground channels that convey water from aquifers in highlands to the surface at lower levels
- Oldest system of human engineering to address water stress
- Offers a practical, low cost solution to provide sustainable water
- One of the best climate change adaptation and resilience building measure for groundwater management for regions facing water scarcity
- 10-15% percent of water supply is still from Kundi Bhandara in Burhanpur.

PROCESS

The project has been developed through a consultative and participatory approach involving different stakeholders, departments, peoples representatives and communities.



PROJECT COMPONENTS

Activity 1: Survey of Traditional Water Sources

- Study of the current status for conservation of potential traditional water supply sources and preparation of an inventory on GIS platform

Activity 2: Physical Restoration of Traditional Water Sources

- Restoring 71 traditional wells and bawdies
- Protection of Kundi Bhandara network
- Rainwater harvesting in 250 Government Buildings
- Target Area 5806.44 sq. mt.

Activity 3: Kundi Bhandara Catchment Area Treatment

- Eco restoration activities such as grassland development, plantations, soil moisture conservation using watershed approach in 325 ha

Activity 4: Facilitate community engagements

- Sustainable management of traditional water conservation system by building community ownership.

EXPECTED BENEFITS

| Components Activities | Social | Economical | Environmental |
|---|---|---|---|
| Physical restoration of traditional water sources | Improved water availability | Cost savings of Rs. 17.3 lakh per annum | Improve water availability, increase groundwater recharge |
| Kundi Bhandara catchment area treatment | Local JFMCs /SHGs will benefit from the eco restoration activities | Increase in forest produce | Increase groundwater recharge, increase in carbon sequestration, vegetation growth, increased soil moisture |
| Community engagements and partnership | Building community ownership of water sources to maintain and manage water bodies | Benefits associated with reduced water scarcity | Conservation of water sources |

Asirgarh Fort, Burhanpur



| | |
|----------------------------------|---|
| Project Funding Support | Climate Change Action Programme (CCAP) Ministry of Environment Forest and Climate Change, Govt. of India |
| Project Execution & Coordination | Department of Environment, Govt. of MP Environmental Planning and Coordination Organization (EPCO) |
| Project Implementation | Madhya Pradesh Forest Department (Burhanpur Forest Division) & Burhanpur Municipal Corporation |

PROJECT AREA : BURHANPUR



Dargah-e-Hakimi, spiritual centre for Dawoodi Bohra community



Tomb of Shah Nawaz (Black Taj Mahal)

| | |
|--------------------|----------------|
| City Area | 12.67 Sq.km |
| Municipal Wards | 48 |
| Population | 2.1 Lakhs |
| Groundwater Status | Semi Critical |
| Water Demand | 37.25 Lakh MLD |

Burhanpur city is a medieval walled city located on the banks of river Tapti. It has a rich religious, cultural, tradition and archeological wealth. The city also has 400 year old traditional Qanat system called “Kundi Bhandara Network” for supply of drinking water. It is also one of the heritage cities under the UNESCO-Indian Heritage Cities Network (since 2006). The city is also known for handloom & textile industry. Burhanpur and its surrounding regions are administered by the Burhanpur Municipal Corporation (BMC). As per the Census 2011, the city population is growing at 19% per decade due to employment and as well as education opportunities. Rapid urban growth and lack of focus and often neglect of indigenous water infrastructure (e.g. traditional wells and bawadies including Kundi Bhandara network) has caused deterioration traditional structures existing the city.

CONTACT

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