

The **Godavari**
Initiative



Jal Samvad

**Moving towards water secure
and climate resilient cities**

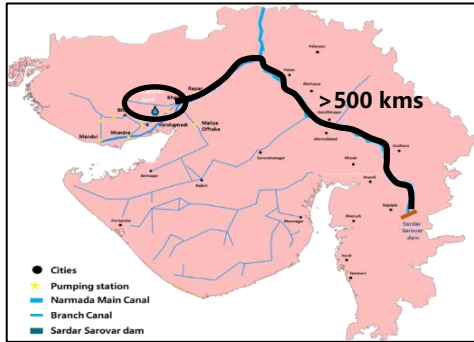
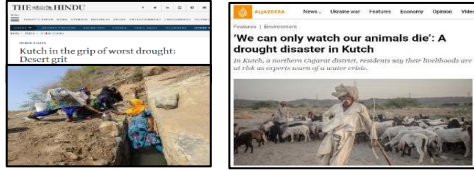
Priyadarshini Choudhary
Lead Research Associate
Center for Water and Sanitation (CWAS)

CWAS CENTER
FOR WATER
AND SANITATION

CRDF CEPT RESEARCH
AND DEVELOPMENT
FOUNDATION

CEPT
UNIVERSITY

Turing climate challenges into opportunities in Arid regions of Kachchh...



THE TIMES OF INDIA
Rains pound Gandhidham, Anjar towns in Kutch

Rajkot: Heavy rain lashed Kutch's commercial city Gandhidham and Anjar on Saturday evening causing severe water-logging in many areas. However, the people welcomed the rain that gave them some respite from the humid heat.



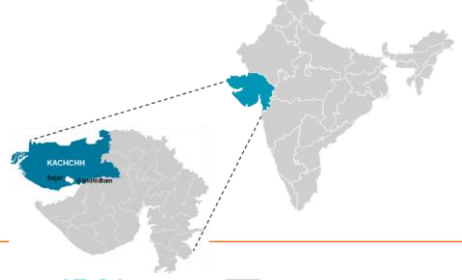
Gujarat Braces for a Wet Weekend; Heavy Rain Alerts Issued over Kachchh, Jamnagar, Sabar Kantha, Surendranagar, Mahesana



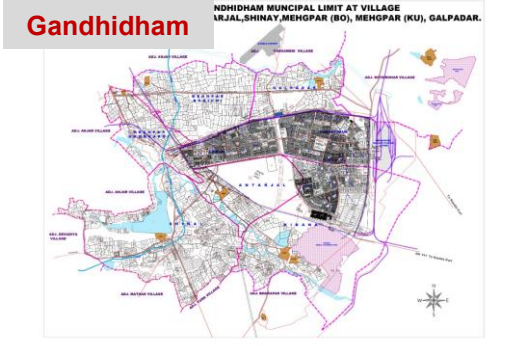
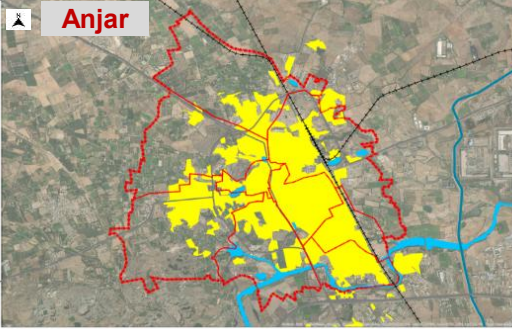
- **Arid region** with 430mm annual rainfall (vs. 1152mm national average)
- **Chronically drought prone** region with a **frequency** of once in every **2.5 years**

- **Over-exploitation** of ground water
- **Salinity ingress**ion
- **Dependence on distant source-** Narmada Water

Climate change effects- Frequent **Urban flooding** scenario in **major parts** of the cities



Kachchh Region



	17.81 Area (sq. Km)		9 Wards
	1,09,238 Population (2021)		26,036 Households (2021)
	29,214 29 slum pockets Slum Population (2021)		9,770 Slum HH (2021)

Old boundary	30+ sq.km	4,10,000 (2021)
+ Extended boundary	110+ sq.km (13 Wards & Sectors + 11 Villages)	5,89,000 (69,880 Slum population)

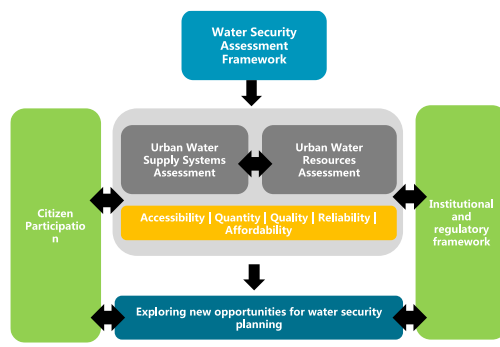
New villages added to the city boundary –
Antarjal, Kidana, Meghpar-Borichi, Galpadar, Shinay, Bharapar, Meghpar-Khumbadi, Padana, Mithi Rohar, Chudva, Khari Rohar

CWAS's Unique Approach for sustainable outcomes



Urban Water Security Planning toolkit developed based on Bhuj experience, implemented in Anjar and Gandhidham to develop Water Security Action Plan...

Water security assessment framework help identify key issues and opportunities



Water Security action plan providing key initiatives

Key Challenge

Key Action

Key Initiatives

 **Water Source**

AUGMENTATION WATER SOURCES

- **Lake rejuvenation** and **Surface water source strengthening**
- **Rainwater Harvesting** and **Groundwater recharge** at major **institutional** and **educational** buildings
- **Groundwater recharge** structures along City **Storm Water Drainage**

 **Municipal Services**

IMPROVING MUNICIPAL SERVICES

- Intermittent to daily supply - **District Meter Area (DMA)**
- **Water Audit** – NRW, identify illegal connections etc.
- **Water Quality Testing Regime**
- **Slum improvement** - Community level ESR

 **Institutional & Financial Initiatives**

STRENGTHENING EXISTING SYSTEMS

- **Institutional** – **strengthening** the Water Department
- **Financial** – Amnesty Scheme to improve Tax collection efficiency + rebate or incentives

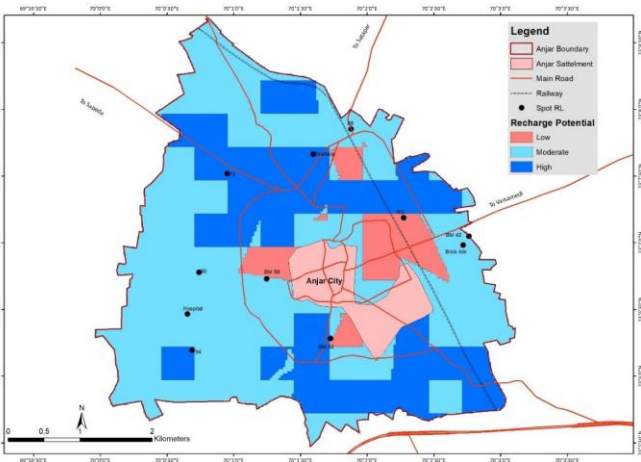
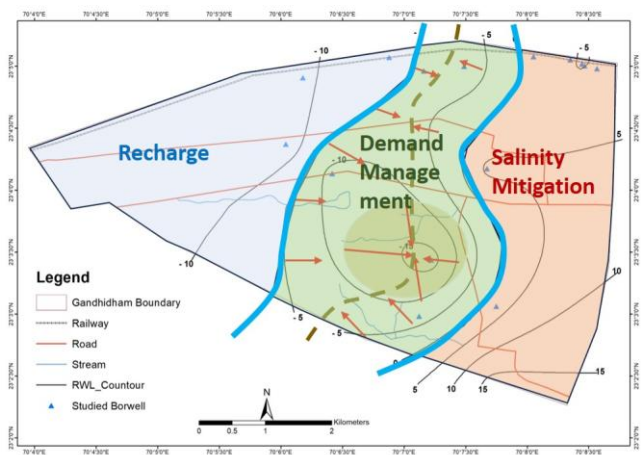
 **Awareness & Engagement**

GENERATING AWARENESS AND ENGAGEMENT

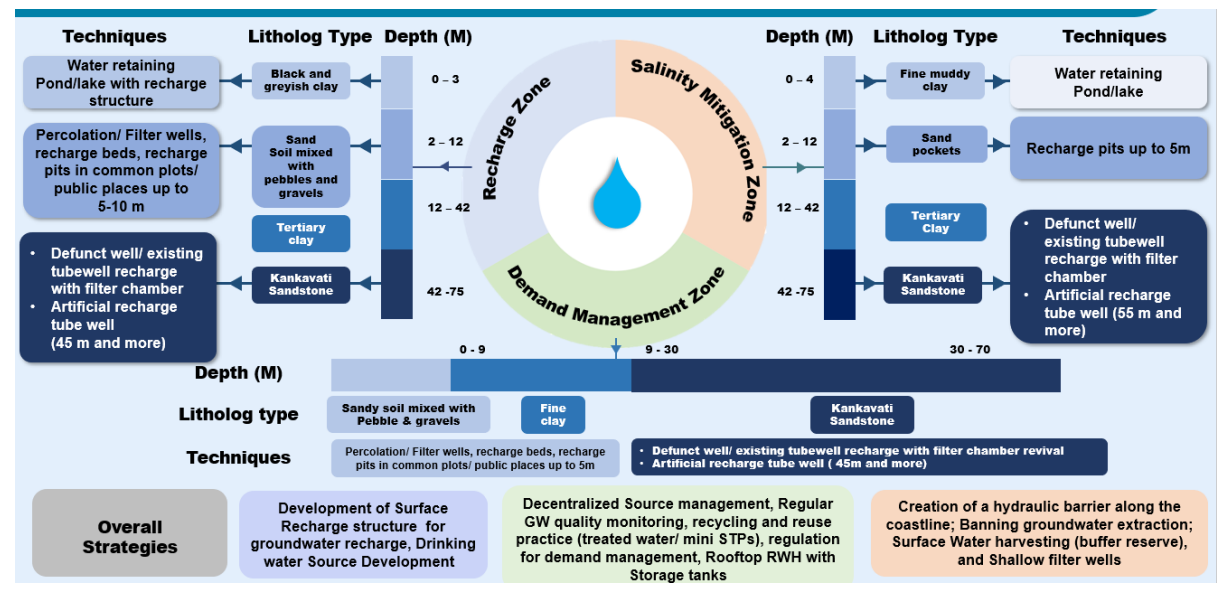
- **IEC and BCC** – Jal Sanrakshan Mela for RWH/GWR awareness
- **Partnerships and Collaborations** – Industries + NGOs + Academia etc. for generating awareness among various stakeholders

Geohydrological study to understand the ground water behavior and develop recharge techniques.....

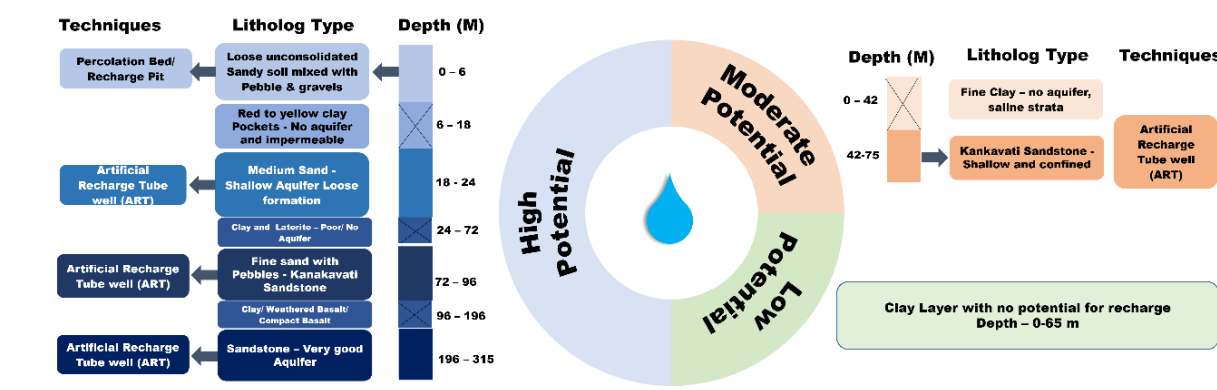
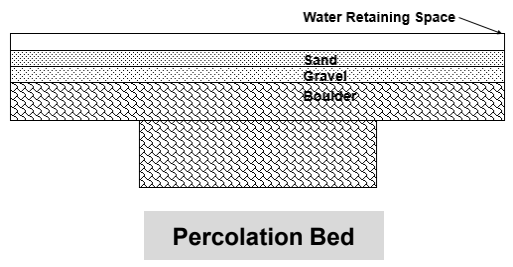
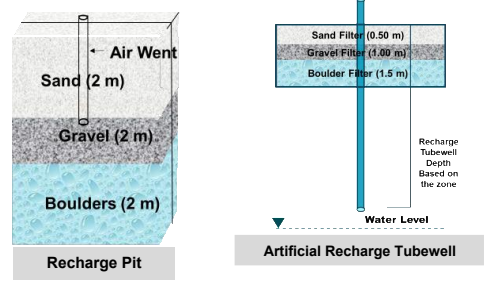
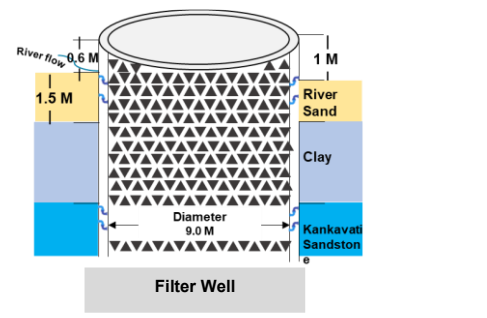
Geohydrological study for understanding aquifer and watershed of cities



Zone-wise Groundwater recharge strategy

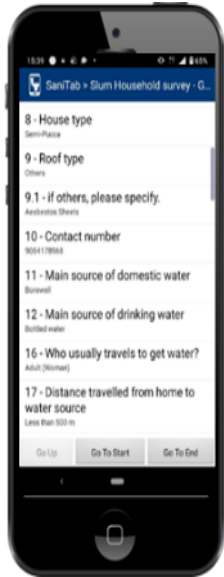


Identification of potential water recharge Techniques

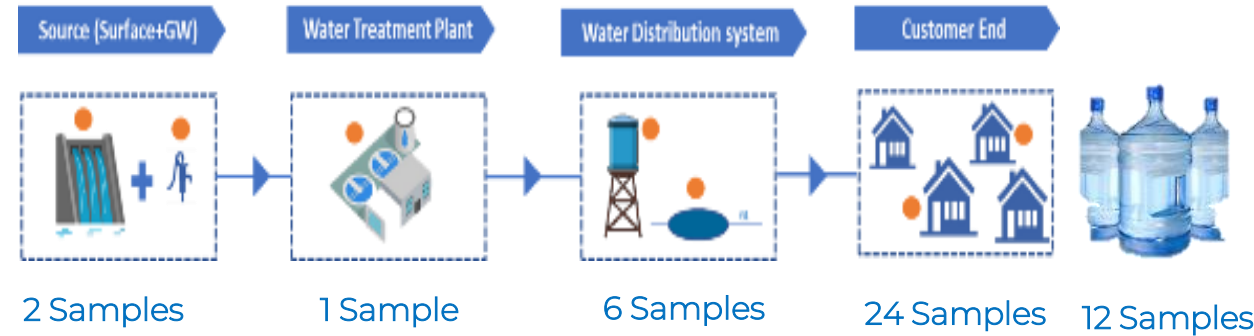


Understand equity aspects in WASH as well as checking quality of supplied water...

- Detailed questionnaire developed (expert discussion)
- Survey conducted using Sanitab app- mobile based app
- Team visited slums and did survey and stakeholder interactions
- Survey report and analysis in progress



380+ HH surveyed in 17 slums in Gandhidham



Water quality assessment conducted at source, distribution network and end user at household level

Most households have municipal tap connections, but they face issues with water pressure, water supply odd timings and water quality.

No contamination found at source and distribution network but Presence of contamination (E.Coli) is observed in slum households in Gandhidham.

Impactful Pilot projects: Successfully implemented multiple rainwater harvesting and groundwater recharge structures

Rainwater Harvesting and Groundwater recharge @ Gandhidham



Anganwadi no-85



3 school cluster- Kanya Shala, Kumar shala and Hindi Shala



Gandhidham Municipal Council

Implemented
16 rainwater harvesting and groundwater recharge structures

Groundwater recharge structures @ Anjar to mitigate urban flooding and improve depleting Ground Water levels



Gokulnagar



Marutinagar



APMC



Swami Vivekanand school

Addressed multiple issues:
Water scarcity, urban flooding, and groundwater depletion

Pictorial glimpse of the pilot demonstrations...

BEFORE



BEFORE



BEFORE



AFTER



AFTER



AFTER



Kanyashala, Kumarshala and Hindi Shala @ Gandhidham

APMC Vegetable Market @ Anjar

Vivekanand School @ Anjar

JAL SANRAKSHAN MELA: 20th – 21st July Gandhidham, Kachchh (Gujarat)

1200+ visitors from various walks of life visited the Mela

Visitors included – MP, MLA, Government Officials, Development Authority, Armed forces, citizens

12+ vendors Participated

500+ school students

35+ villagers from nearby villages visited the Mela

“Nukkad Natak” on water conservation



Community engagement, awareness and capacity building

Capacity building for - 200+ professionals



Anjar Area Development Authority (AADA)- Builders, developers Workshop



Teachers Training for RWH in schools



Plumbers Training



Valve operators training – Transitioning from non daily to daily water supply



Sensitization workshop for Architects, builders, developers by GdMC, Gandhidham Development Authority and CWAS

Awareness program– 30,000+ people



Viksit Bharat, Government program



Ramnavmi Mela



Sstudents and teachers awareness program

Multiple Stakeholder consultations



Focus group discussions with citizens and local residents



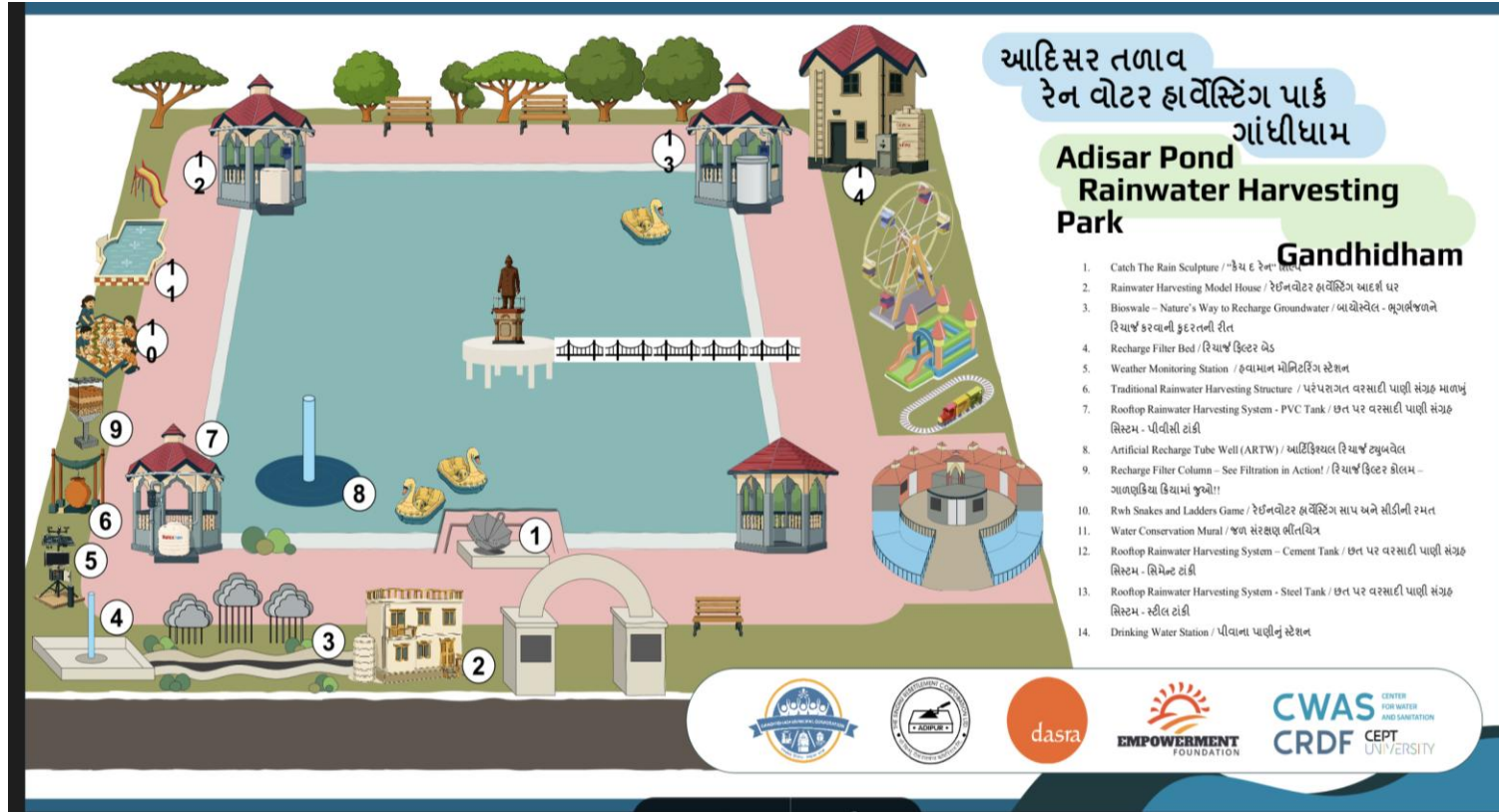
Multiple Stakeholder consultations with govt officials



Field visit to capture good practices in and around kachchh



Gujarat's first Rainwater Harvesting Theme Park @ Aadisar Pond, Gandhidham...



RWH theme park- umbrella sculpture



Weather Monitoring station



RWH systems



Household RWH, Bio swales and GWR structure



Traditional method



Rainwater drinking station



Mural depicting water conservation practice & city fabric

Educational and awareness platform promoting sustainable water conservation practices

Various training sessions



Inauguration event



School Students



City Officials



GdMC - MC



Regional NGOs

Impacts and Achievements...



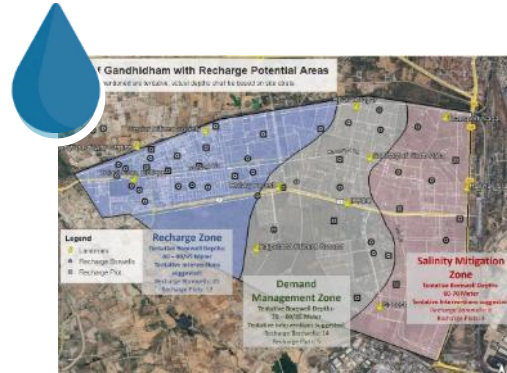
40,000+
Litres fresh water available for
3000+ students, through
Rainwater Harvesting Project



1200+ visitors
from various walks of life visited the Jal Sanrakshan Mela, including MP, MLA, Government Officials, Development Authority, Armed forces, villagers, citizens



56+ million
litres groundwater recharging annually
through GWR equivalent to drinking
water for **10,000+ HHs**



USD 350,000
Invested by the state government in
50+ ground water recharge,
leveraging CWAS pilot projects to mitigate
urban flooding



200+
Professional trained
and made aware about the
importance of RWH/GWR including
Engineers, teachers, plumbers etc.



Development of
**1st Rainwater Harvesting
(RWH) Theme Park of
Gujarat**
in collaboration with Sindhu
Resettlement Corporation

Strategic partnership and collaboration to attain scale



THANK YOU!

cwas@cept.ac.in

cwas.org.in



About us

The Center for Water and Sanitation (CWAS) is a part of CEPT Research and Development Foundation (CRDF) at CEPT University. CWAS undertakes action-research, implementation support, capacity building and advocacy in the field of urban water and sanitation. Acting as a thought catalyst and facilitator, CWAS works closely with all levels of governments - national, state and local to support them in delivering water and sanitation services in an efficient, effective and equitable manner.



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cwas@cept.ac.in
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