



Moving towards Water secure cities in Gujarat

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Center for Water and Sanitation (CWAS)

Water and Gender: Where water flows, equality grows
World Water Day 2026

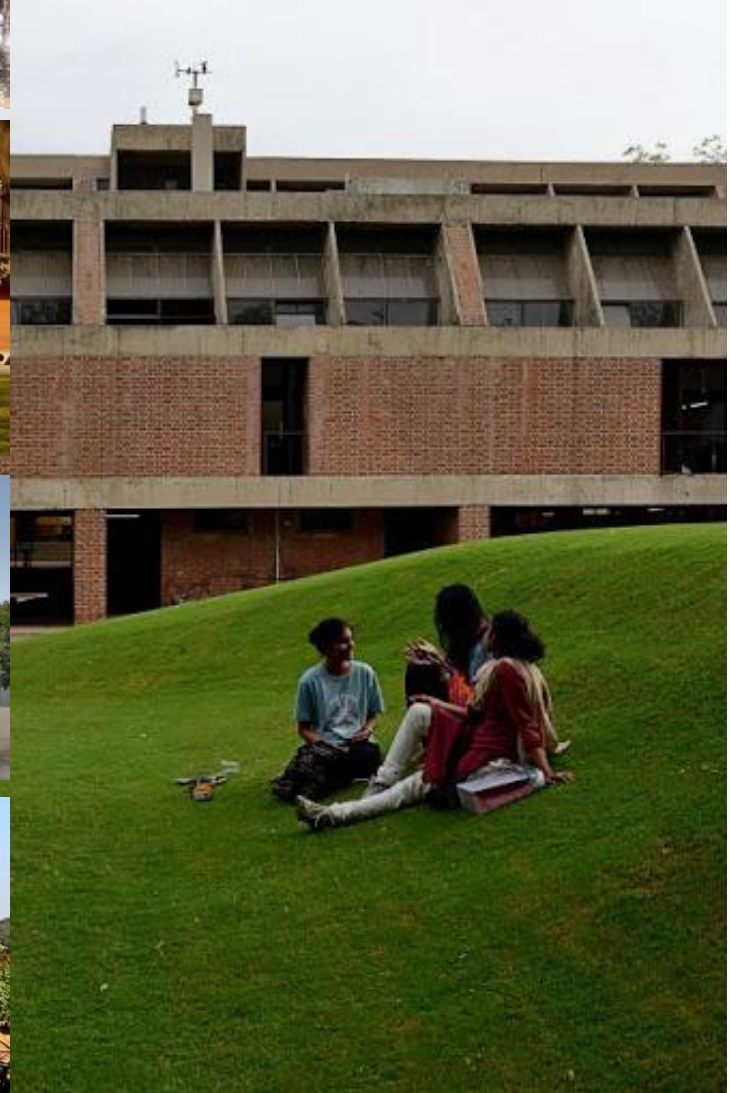
24th March, 2026

CWAS at CRDF, CEPT University

CEPT University's core focus is human habitat. Located in Ahmedabad, its education, research and advisory activities strive to improve the lives of people in India's villages, towns and cities.

CEPT Research and Development Foundation (CRDF) is established by the University to manage their research and capacity building activities. The Center for Water and Sanitation (CWAS) is among the first center to be established.

CWAS began its work in 2009 with a focus on monitoring and improving water and sanitation services in India. It carries out activities related to action research and capacity building – working closely with city and state governments in the state of Maharashtra, to support them to improve service delivery. CWAS has information on delivery of WASH services for 800 cities across four states in India. Its recent focus is on making cities and villages water secure and climate resilient.



CWAS – Approach and areas of work ...

Core values



Public Goods Mindset



Government Engagement at All Levels



Action-oriented Research and Innovation



Learning Culture and Academic Roots



Working At scale

Thematic areas of work



MONITORING WASH SERVICES

From Infrastructure creation to Service Delivery

Data driven decision making for improved service delivery



ACTION RESEARCH FOR SANITATION

Sanitation services in small and medium towns that are sustainable, inclusive and equitable

Action research from cities be scaled up at the state and national level



GOVERNANCE AND FINANCING

Strengthening municipal finance and governance, planning and financing urban WASH



WATER SECURITY

Water Governance, management and climate resilience

Water supply service delivery and managing water resources



EQUITY IN SERVICES

Ensuring sustainable and equitable access to safe water and sanitation at scale

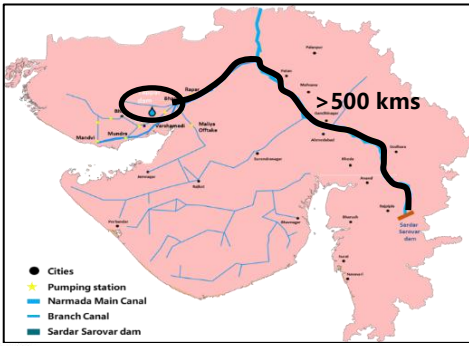


CLIMATE CHANGE

Energy Transition in WASH services

Mitigation and Adaptation measures for WASH

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



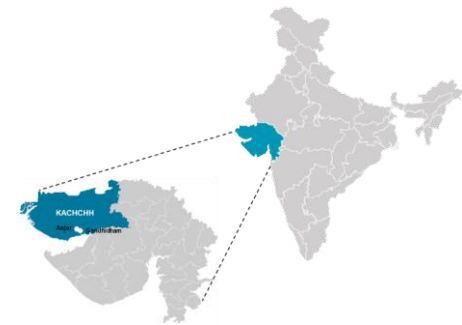
Rains pound Gandhidham, Anjar towns in Kutch
 Rajkot: Heavy rain lashed Kutch's commercial city Gandhidham and Anjar on Saturday evening causing severe water-logging in many areas. However, the people welcomed the rain that gave them some respite from the humid heat.



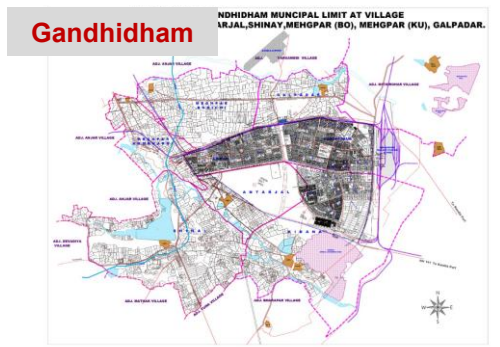
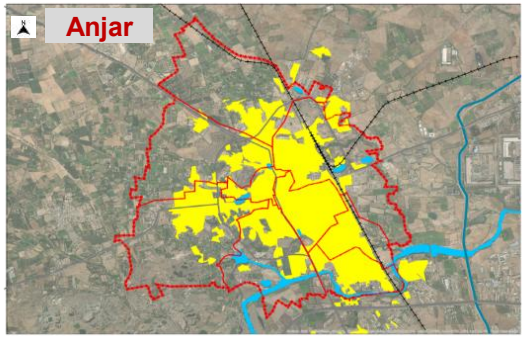
- **Arid region** with 430mm annual rainfall (vs. 1152mm national average)
- **Chronically drought prone** region with a frequency of once in every 2.5 years

- **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)

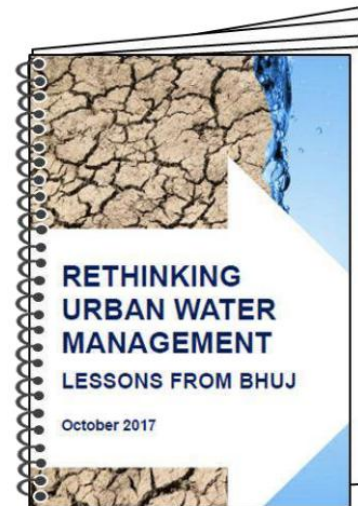
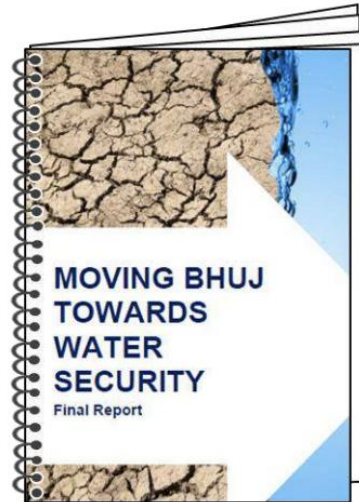
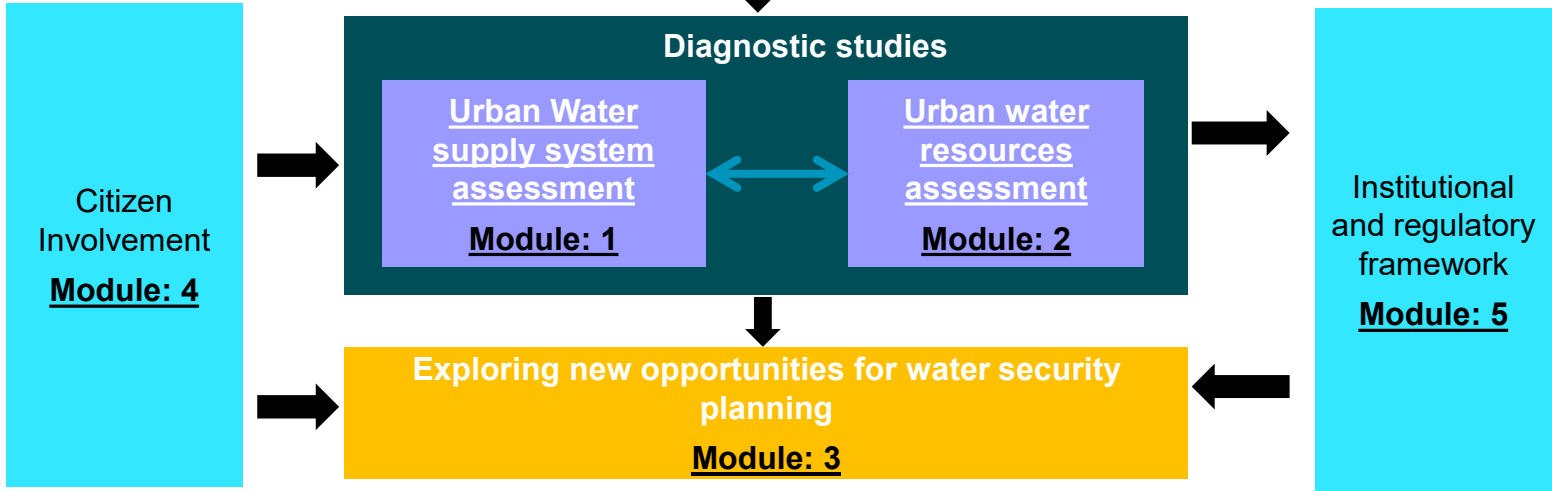
New villages added to the city boundary –
 Antarjal, Kidana, Meghpar-Borichi, Galpadar, Shinay, Bharapar, Meghpar-Khumbadi, Padana, Mithi Rohar, Chudva, Khari Rohar

CWAS has developed Urban Water Security Toolkit –based on Bhuj Experience; cities can replicate to become water secure...



Urban Water Security Planning Toolkit	
1 Need and concept of this toolkit	3 Introduction: Urban Water Security Planning Toolkit
2 Approaches and toolkits for water security planning	? Is your city water secure? Rapid assessment by citizens and ULB
M1 Urban water supply system assessment <small>Service and Citizen Issues and challenges Future demand</small>	M4 Citizen involvement in water resources management <small>Awareness and campaigning Technical demonstrations Involvement in decision making Involvement in assessment and implementation</small>
M2 Understanding urban water resources <small>History of use Rainfall Surface water and waterbodies Aquifer and Groundwater</small>	M5 Institutional and regulatory framework <small>Institutions Acts Regulations Policy Stakeholders Gap assessment Strengthening framework and institutions Capacity building</small>
M3 Exploring new opportunities for water security planning <small>RWH GW Recharge Source Revival WW Reuse Reducing NRW Improving quality Metering Continuous supply Demand management</small>	

Is your city water secure?
Rapid assessment by citizens and ULB
(Service provider and consume perspective)



CWAS's Unique Approach for sustainable outcomes...



For ownership and sustainability of project

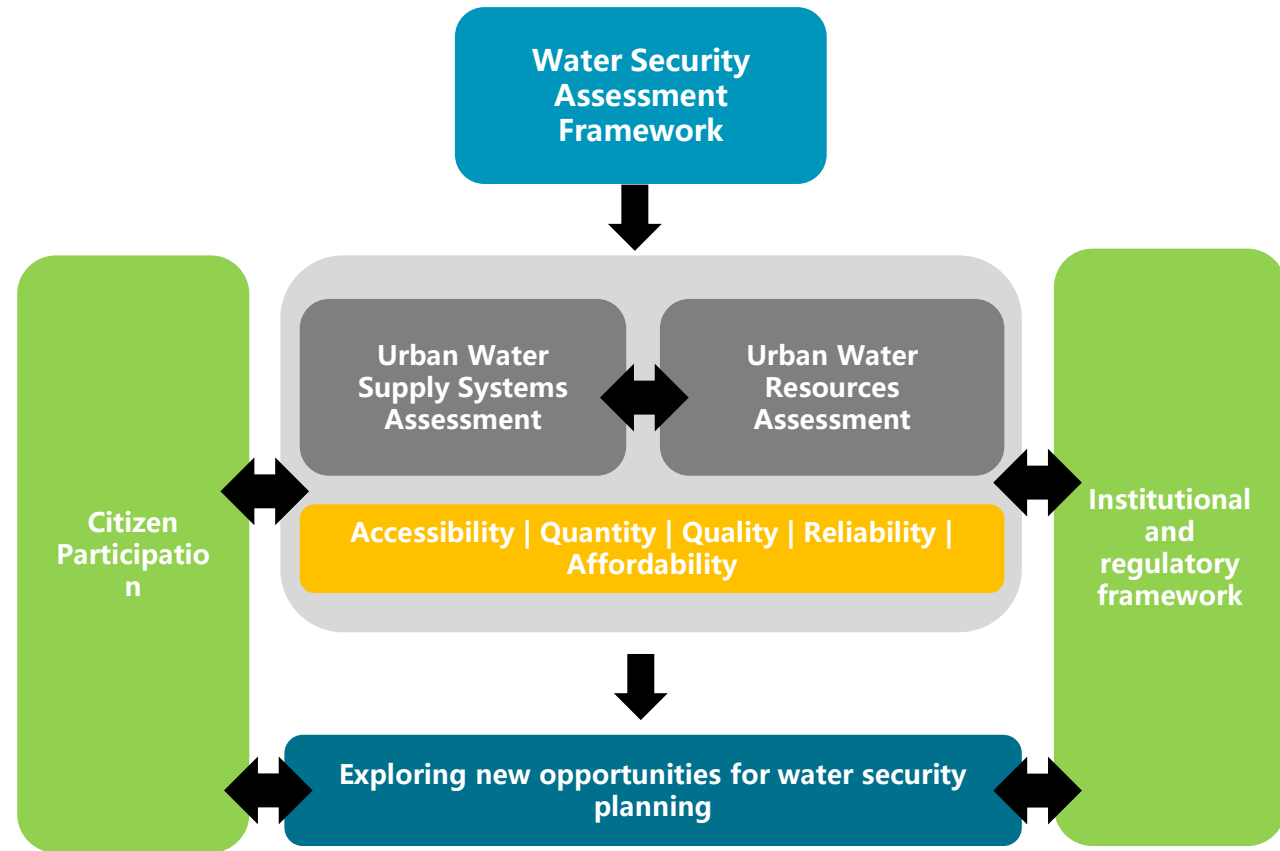
For showcasing success and impacts on ground

For awareness, capacity building and system strengthening

For scaling up- working at all levels of government and knowledge sharing









Water security assessment framework help identify key issues and opportunities around water security in both cities...



“Water Security is **access** of water for **basic human needs** in adequate **quantity and quality**, which is **reliable and affordable**.”

Key findings

-  **High dependency of distant water**
Questioning source sustainability?
-  **Depleting Groundwater levels**
-  **Poor groundwater quality with salinity ingress**
-  **Urban Flood situation** during monsoon
-  **Intermittent Water Supply**- Alternate day in Anjar and once in 4 days in Gandhidham
-  **Issues** related to Water supply in **Slum pockets**

Water Security Action Plan prepared for both the cities...



Key Challenge

Key Action

Key Initiatives



Water Source



AUGMENTATION WATER SOURCES



Municipal Services



IMPROVING MUNICIPAL SERVICES



Institutional & Financial Initiatives



STRENGTHENING EXISTING SYSTEMS



Awareness & Engagement



GENERATING AWARENESS AND ENGAGEMENT

- **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**

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

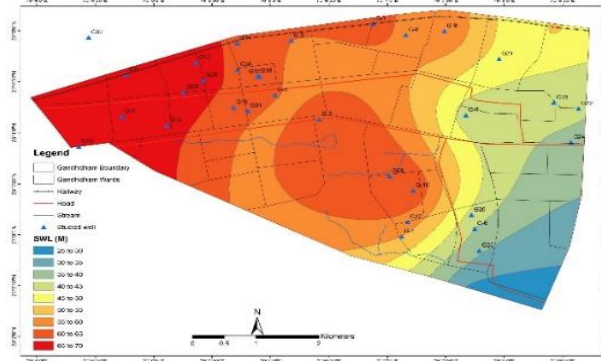
- Institutional – **strengthening** the Water Department
- **Financial** – Amnesty Scheme to improve Tax collection efficiency + **rebate** or **incentives**

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

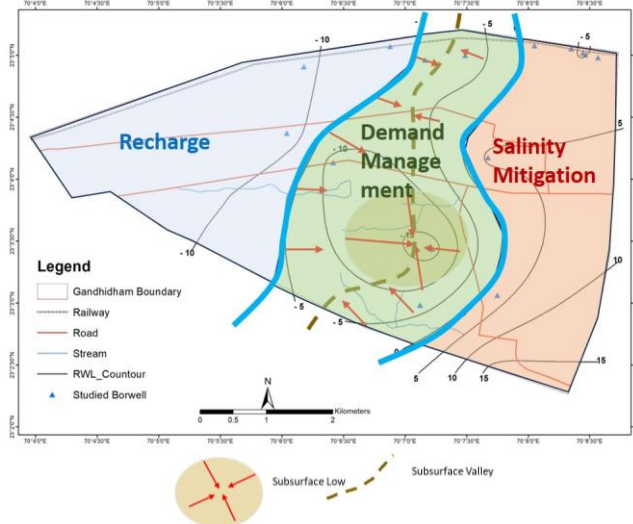
Water Security action plan providing key initiatives for both cities prepared and shared with city officials.

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

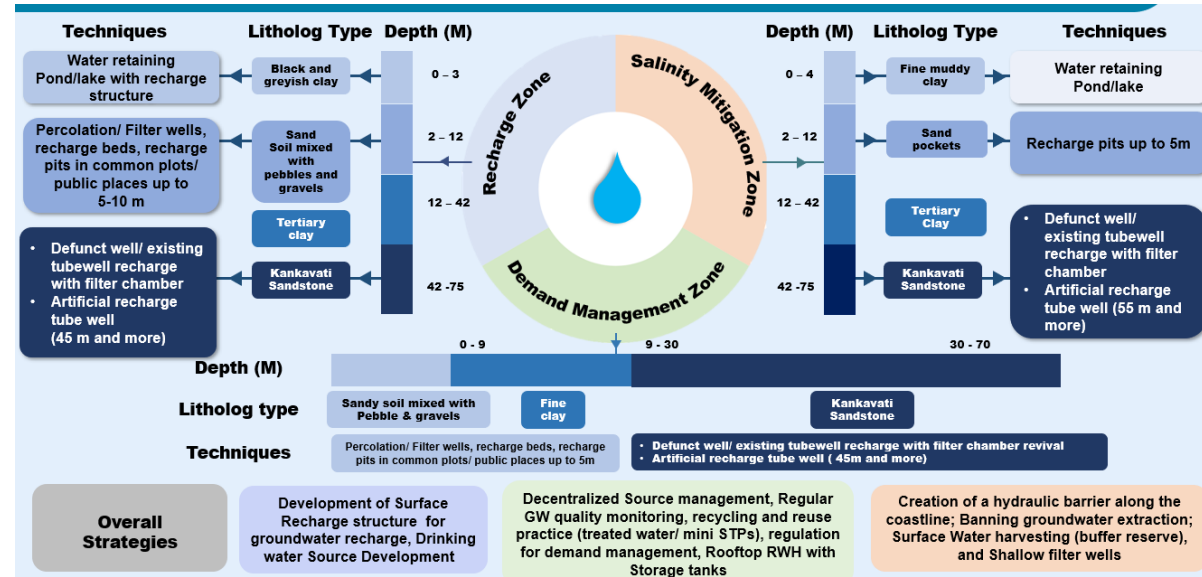
Geohydrological study for understanding aquifer and watershed of cities



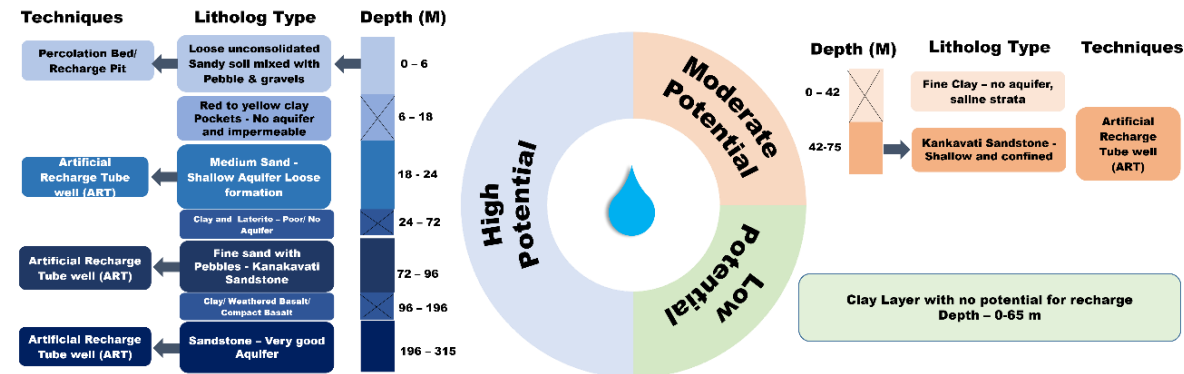
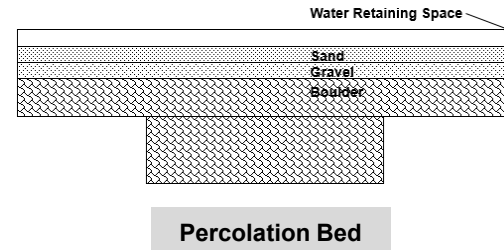
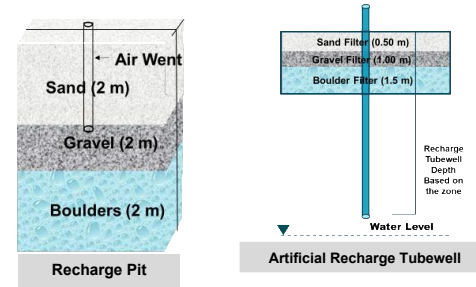
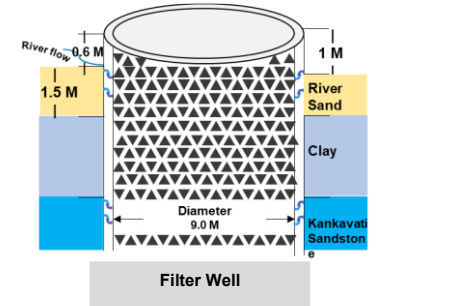
Pre and Post monsoon water levels were observed



Zone-wise Groundwater recharge strategy



Identification of potential water recharge Techniques



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...



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



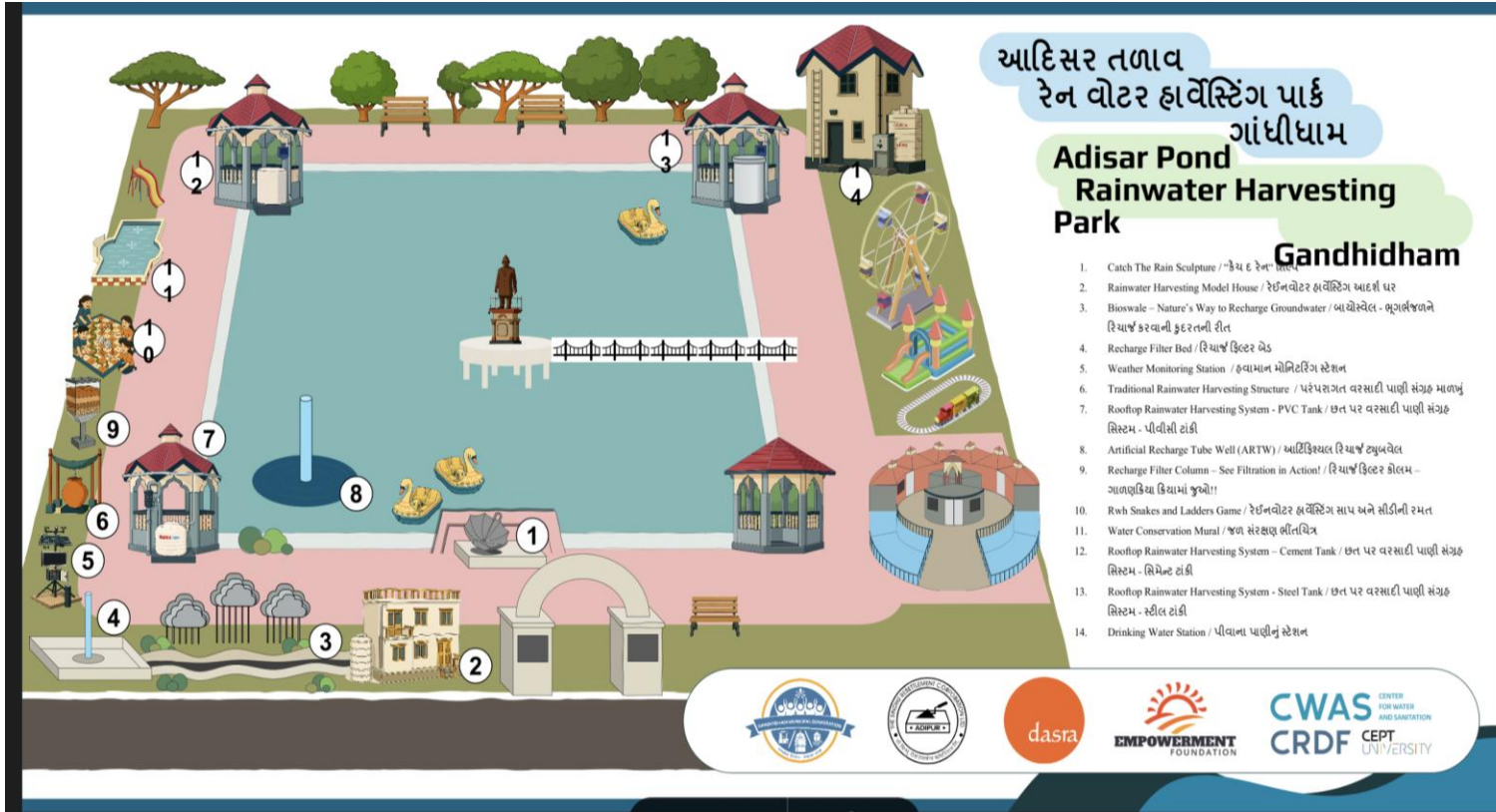
Multiple Stakeholder consultations with govt officials



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

Scaling up at city and district level...

Discussion with various stakeholders



Discussion with **Development Authority** – Anjar Area Development Authority and Gandhidham Development Authority



Discussion with **Taluka Panchayat Education Officer** for further scale up in school in Anjar and Gandhidham

Discussion with **APMC Secretary**, for developing RWH at APMC building and further scale up in +60 near by villages at **Taluka level**



Discussion with **Sindhu Resettlement Corporation** about the study and potential location for developing GWR structures to mitigate urban flooding situation in Gandhidham



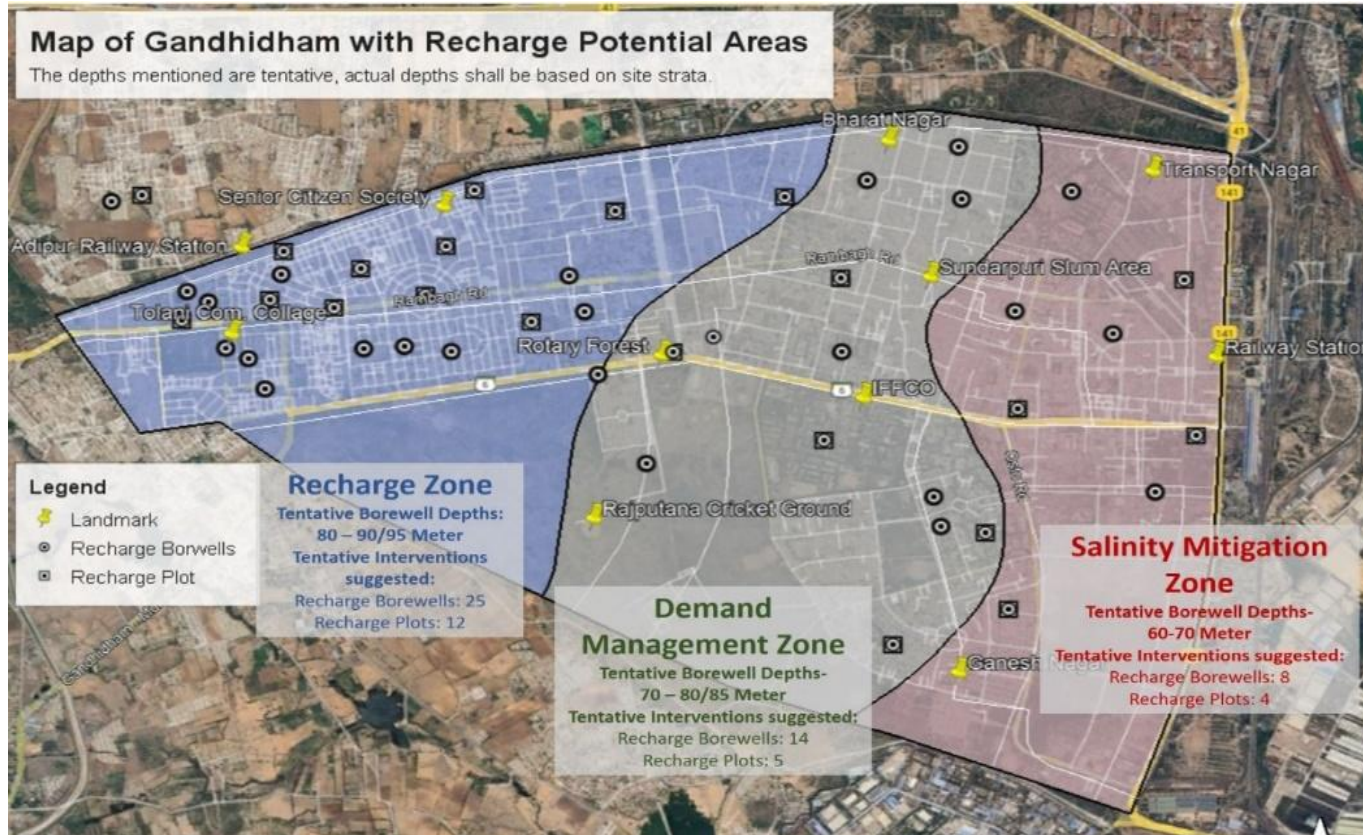
Round Table meeting with **Gandhidham Chamber of commerce (GCCCI)** for various potential scaleup initiatives



Discussions planned with **Collector, MP and MLA** for scaling up activities at district-level and with **Gujarat Urban Development Mission (GUDM)** for state-level scale-up through ongoing government programs

Scaling up at city...

Gandhidham city level plan approved by state government



INR 3Cr would be invested by
the state government in
50+
ground water recharge
structures

GDA has mandated all building
proposed and existing to install
RWH and GWR structures

Moving towards daily water supply ...

Gandhidham Corporation and CWAS initiative for Daily Water Supply in Gandhidham

- **Expert Engagement & Technical Guidance:** Water Experts Roundtable to provide strategic and technical inputs for transition planning.
- **Institutional Coordination & Partnerships:** Coordinated efforts among GdMC (Service Provider), CWAS (Technical Partner), GUDC (Infrastructure Provider), GWSSB & GWIL (Source Providers), and Project Consultants.
- **Field-Based Operational Assessment:** Joint field visits to assess pilot demonstration areas and Structured discussions with valve operators to identify operational challenges and define trial strategies.
- **Digital Systems & Community Engagement:** Development of integrated digital datasets for the water supply system, covering regional and local sources.
- **Public awareness initiatives to support transition and demand-side readiness.**



Impacts and Achievements...



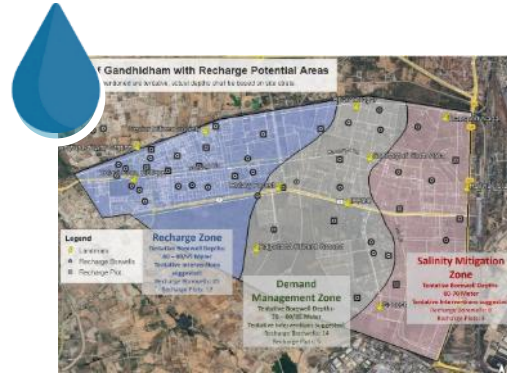
40,000+
Litres fresh water available for
3000+ students, through
Rainwater Harvesting Project



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**



INR 3Cr
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...



GDA



AADA

Anjar Area Development Authority
Government Of Gujarat

 **ARID COMMUNITIES & TECHNOLOGIES**



THANK YOU!

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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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