Jal Sanchay Jan Bhagidari 2.0

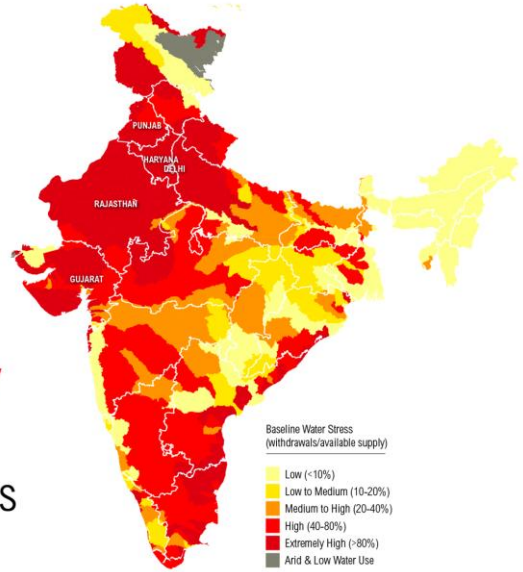
Center for Water and Sanitation (CWAS) in Collaboration with Bhavnagar Municipal Corporation

CWAS CENTER FOR WATER AND SANITATION
CRDF CEPT UNIVERSITY

India is one of the most water-challenged countries in the world…

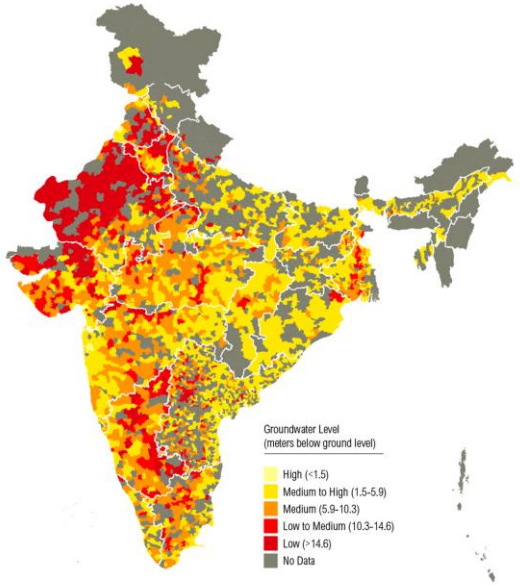
From facing water stress to decreasing groundwater levels and quality…

54% of India Faces **High** to **Extremely High** Water Stress



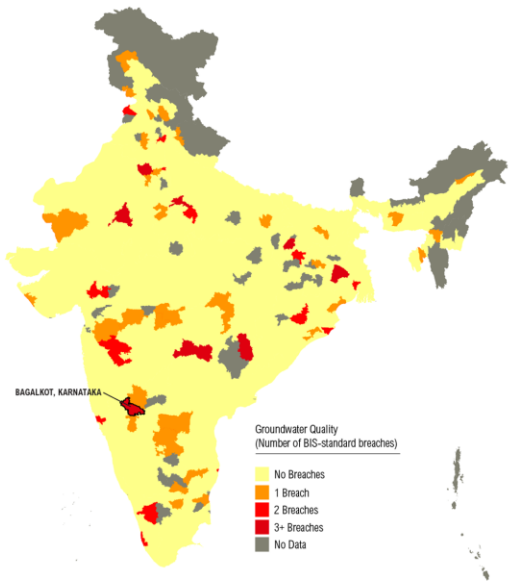
- 600 million people are at higher risk of surface-water supply disruptions
- Extreme water stress across north-western India: its agricultural heartland - threatens national food security

54% of India's Ground-water Wells Are Decreasing



- The absence of limits on groundwater extraction has led to widespread overuse of water resources

More than **100 MILLION** People Live in Areas of Poor Water Quality



- More than 20 million people lived across eight districts where at least three pollutants exceeded safe limits

Source : WRI, https://www.wri.org/insights/3-maps-explain-indias-growing-water-risks?ap3c=AGisO_1kcbKK8sgEAGkB6-6rEnvyZ7BDizUyg9kkd1KJDxctNA

National Missions with focus on water security including RWH, GWR, Lake rejuvenation, aquifer mapping…

Jal Shakti Abhiyan: Catch the Rain

Jal Sanchay Jan Bhagidari (2024)

A specialized component focusing on community-led construction of low-cost, artificial recharge structures and reviving defunct bore wells

AMRUT 2.0
Making Cities Water Secure

Atal Mission for Rejuvenation and Urban Transformation 2.0

Atal Mission for Rejuvenation & Urban Transformation (AMRUT) 2.0

Water Security: Rejuvenation of urban water bodies/lakes, promoting the circular economy of water, Aquifer Management plan

NAQUIM
National Aquifer Mapping and Management Programme

National Aquifer Mapping and Management (NAQUIM)

Implemented by the Central Ground Water Board (CGWB), this program maps aquifers (water-bearing formations) to understand their capacity and quality

Jal Sanchay Jan Bhagidari 2.0...

JSJB Objectives

To conserve every drop of water through collective action, involving both society and government.

Objective 1
Boost in Groundwater levels

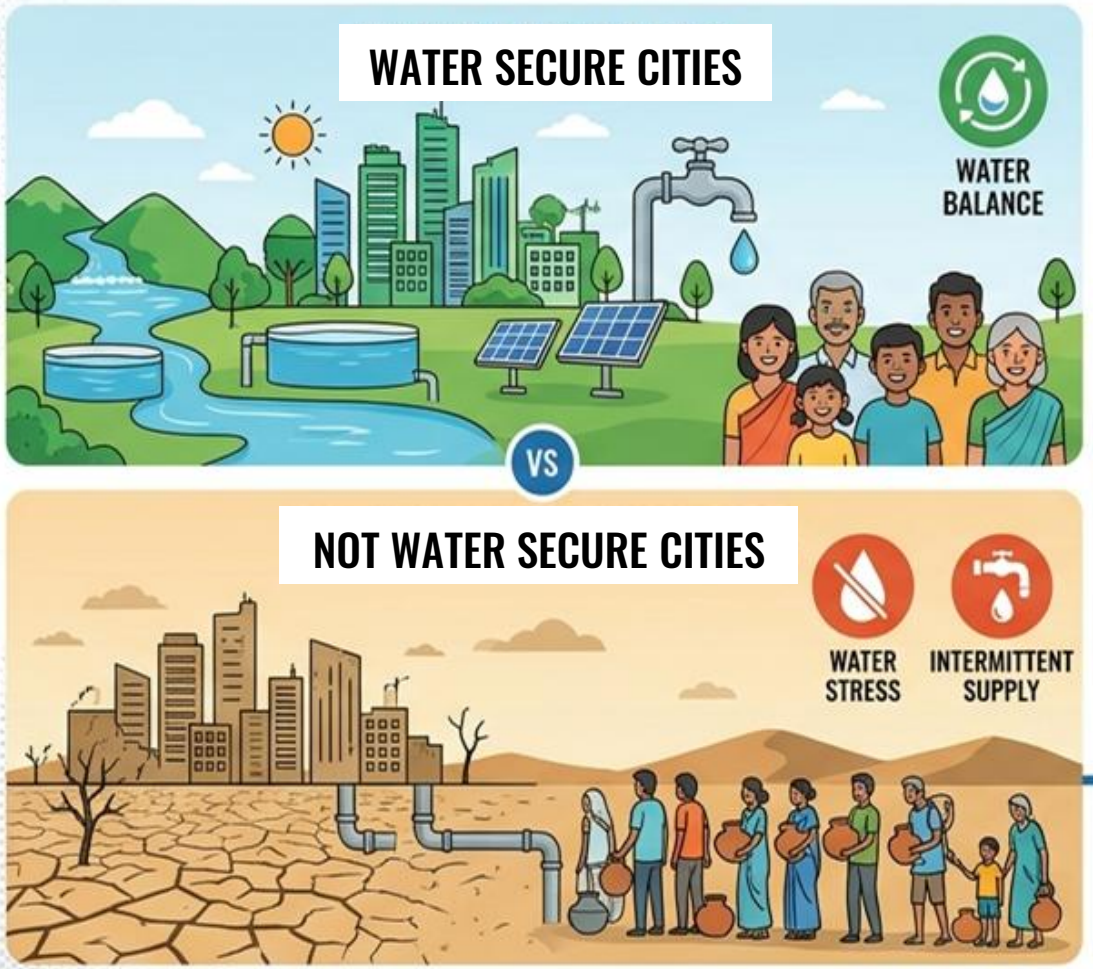
Objective 2
Promotion of Water Conservation

Objective 3
Enhancement of Climate Resilience

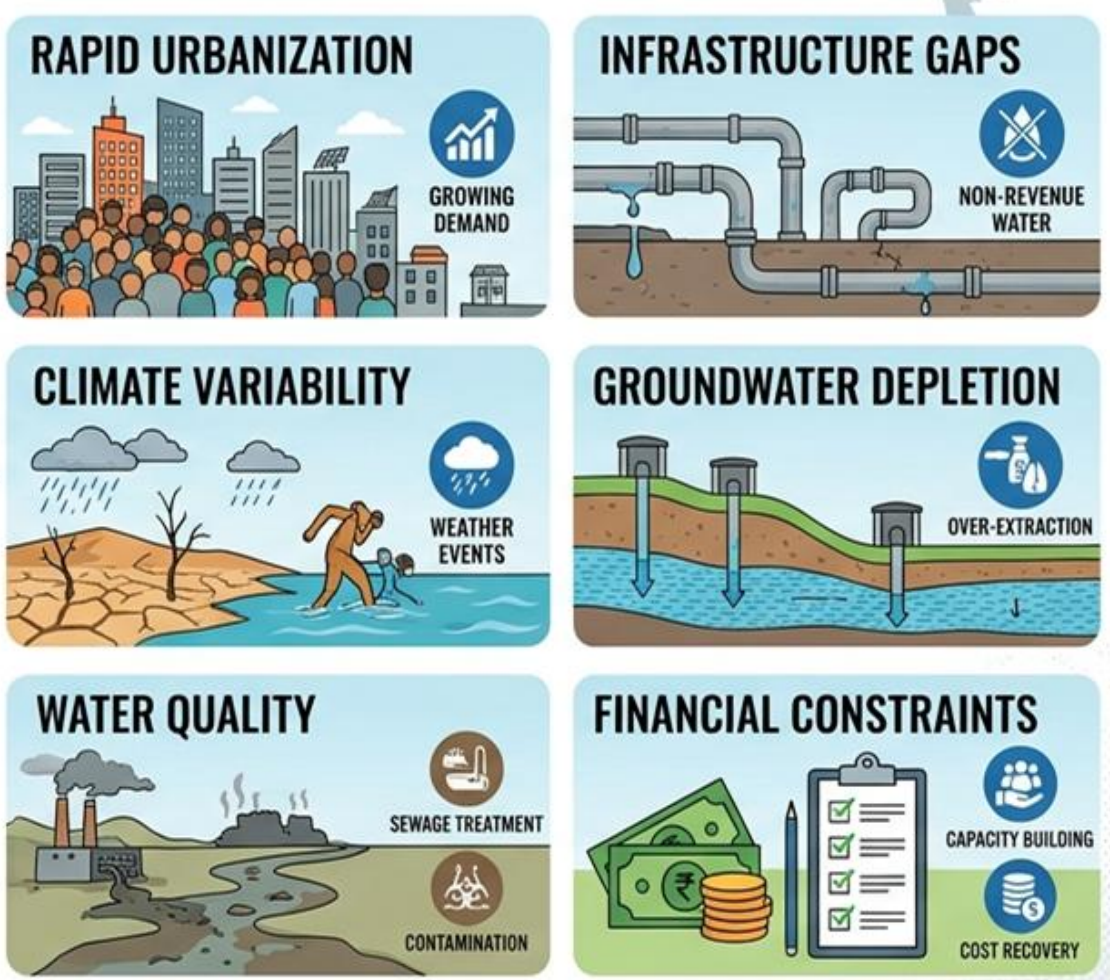
Objective 4
Improvement of Water Quality

Is your City Water Secure?

1. IS YOUR CITY WATER SECURE?



2. WHAT ARE YOUR BIGGEST CHALLENGES?



MAHARASHTRA, INDIA

Source: image created with the help of AI

Key Challenges faced by our cities, today...

Ironical situation- floods vs. water scarcity

On the one end there is **acute water scarcity** and on the other, the **streets are often flooded** during the monsoons

Depletion of local water resources

Depletion of ground water or dependency on **distant water sources**

Deteriorating Quality of Water Sources

Pollution caused by **Solid waste and untreated sewage** dumping and **industrial effluent**

Challenges in Municipal Services

- Widening demand and supply gap
- High Water losses
- Inequity in water supply

Key Challenges faced by our cities, today...

Lack of rainwater harvesting and groundwater recharge

Non-maintenance of traditional harvesting structures

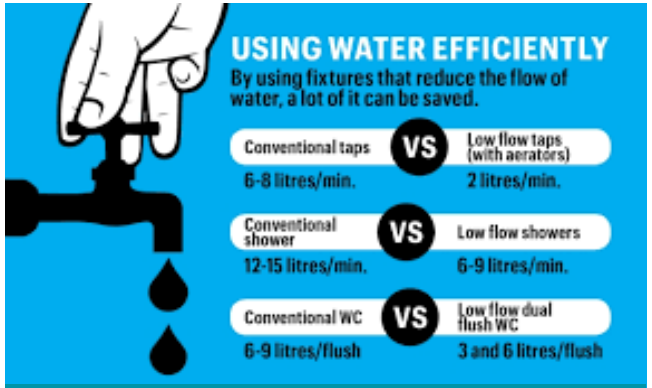
Vanishing lakes and waterbodies/ risks from urbanization and poor maintenance, resulting in reduced water levels and siltation.

Year 2016

Year 2025

Lack of demand management

Water wastage



Lack of water saving fixtures

Steps towards climate change and challenges in water sector...

National Water Policy

Provisions include **reviving traditional water harvesting systems**, **promoting rainwater harvesting** in urban and industrial areas, and **prioritizing domestic water supply** from a mix of surface, groundwater, and rainwater sources.

NAQUIM (CGWB)

National Aquifer Mapping and Management Programme aims to **map and characterize aquifers** and prepare **groundwater management plans**. It has covered the entire **25 lakh sq km mappable area**, with data shared with **States and UTs** for action

AMRUT

Focuses on **urban water infrastructure**—ensuring **tap connections for all households** in 500 cities, along with **water supply system upgrades**, **rejuvenation of water bodies**, and **rainwater harvesting for groundwater recharge**. Cities also prepare **Aquifer Management Plans** and run **awareness campaigns** on water conservation.

Jal Shakti Abhiyan

Aims to harvest monsoon rain through recharge structures, watershed management, and awareness, with the **theme "Source Sustainability for Drinking Water"**, supported by **MGNREGA and PMKSY** funds.

Atal Bhujal Yojana (Rural)

Promoting **community-led groundwater management**, where villagers prepare and implement **Water Security Plans** to ensure **sustainable and efficient groundwater use**.

Jal Sanchay Jan Bhagidari (JSJB)

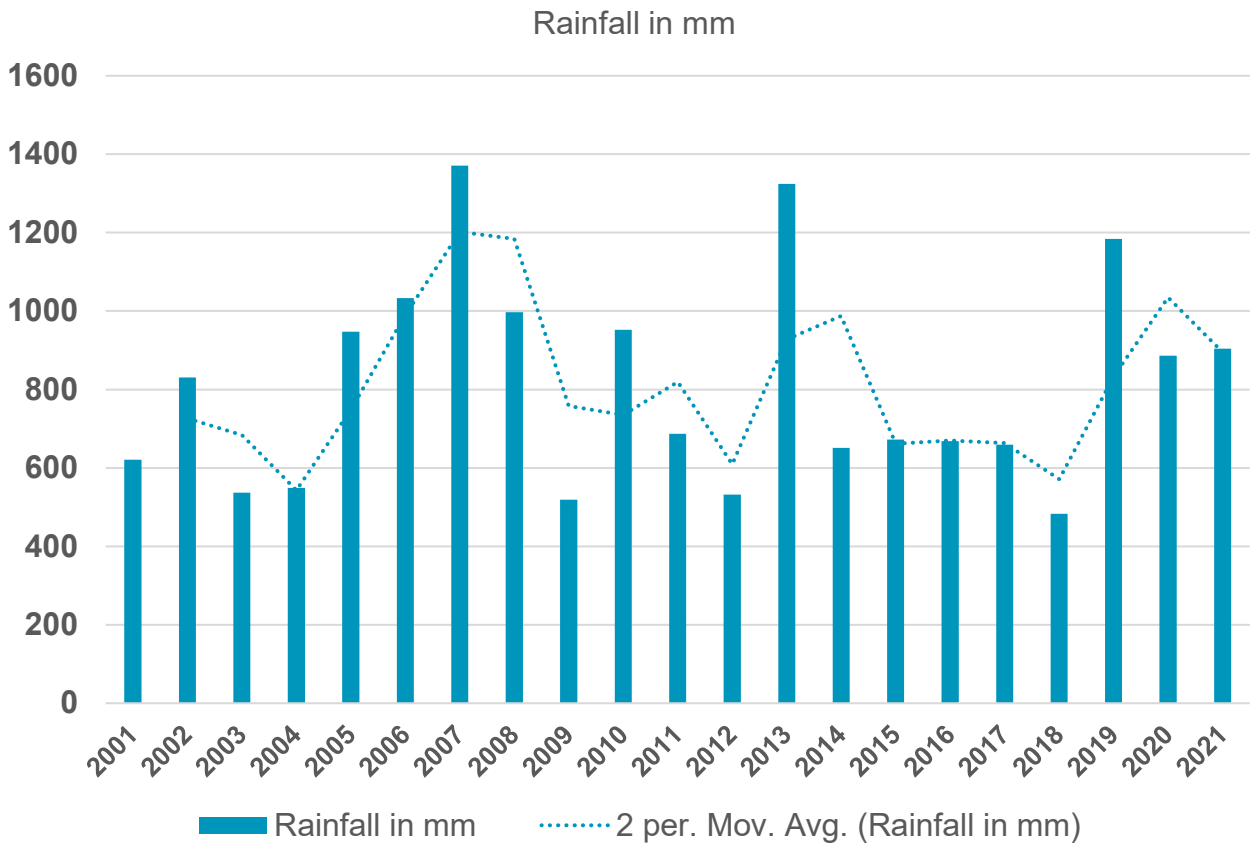
National community-driven campaign tackles water scarcity through a **whole-of-society and government approach**. Emphasizes on **public participation** and construction of **recharge structures** like rainwater harvesting systems, check dams, and artificial recharge shafts to **augment groundwater and enhance water security**.

Various Gujarat Government Initiatives...

- **Mandatory Rooftop Rainwater Harvesting (RWH):** The state mandates RWH systems in all new buildings, both residential and commercial, especially in urban areas.
- **Jal Sanchay Jan Bhagidari (JSJB):** A community-driven initiative launched in Surat that focuses on building low-cost RWH structures with strong community participation.
- **Atal Bhujal Yojana:** This central government scheme, implemented in Gujarat, aims to arrest groundwater decline through community-led sustainable management. It trains villagers to monitor water parameters and create Water Security Plans (WSPs).
- **Subsidy Programs:** The Gujarat Water Supply and Sewerage Board (GWSSB) offers subsidies for installing RWH systems in both urban and rural areas.
- **District and Taluka Initiatives:** Several districts, particularly those in water-scarce regions like Saurashtra and Kutch, provide incentives for farmers and residents to build RWH systems.
- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** The Watershed Development Component of this scheme includes rainwater harvesting as a key activity for developing rainfed and degraded lands.
- **Central Ground Water Board (CGWB) Initiatives:** The CGWB provides training and resources, and has also implemented demonstrative artificial recharge projects that the state can replicate.
- **Fifteenth Finance Commission (XV FC) Grants:** These grants can be used by rural local bodies for activities including rainwater harvesting and water recycling.

Source : https://www.gidb.org/water-supply-roles-and-responsibilities

The challenges are also faced by Bhavnagar...



Sl.	Quality Parameter	Identified Districts in Gujarat by CGWB
1	Fluoride	Anand, Chota Udaipur, Porbaandar, Dwarka, Junagadh, Banaskantha, Mehsana, Patan, Kachchh, Ahmedabad, Botad, **Bhavnagar**, Somnath, Morbi, Rajkot, Sabarkantha, Dahod, Panchmahal
2	Electrical Conductivity (indicating Salinity)	Anaand, Kheda, Vadodra, Jamnagar, Porbandar, Dwarka, Junagadh, Banaskantha, Mehsana, Patan, Kachchh, Ahmedabaad, Botat, **Bhavnagar,** Amreli, Diu, Morbi, Rajkot, SurendranagarSabarkantha

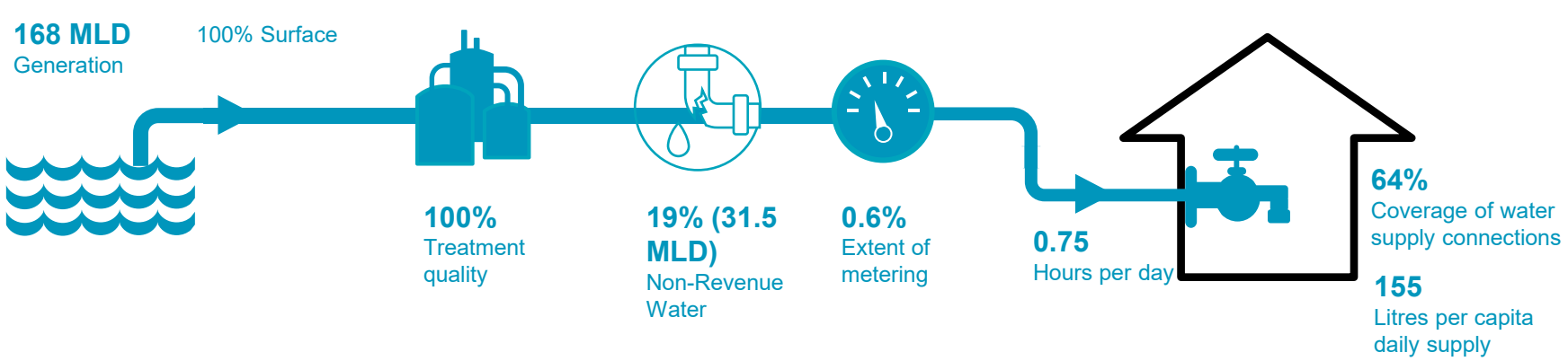
Source: Ccentral Ground Water Board – Annual Water Quality Report 2025 (https://cgwb.gov.in/cgwbpnm/public/uploads/documents/17628543752626804 75file.pdf)

Erratic Rainfall Pattern causing situations of water scarcity and flash floods

Precence of Fluoride and **salinity ingression** due to proximity to sea coast and extraction of ground water – quality challenges

Source : CGWB, Aquifer Mapping and Management of Groundwater resources – Bhavnagar District; https://cgwb.gov.in/cgwbpnm/publication-detail/113

Current Status of Water Supply Service in Bhavnagar



- BMC supplies around 168 MLD of water daily through surface water sources
- Water supply coverage stands at 64.4%, indicating scope for expanding household connections.
- The city reports around 31.5 MLD of water loss, accounting for nearly 19% Non-Revenue Water (NRW).
- The annual expenditure on water supply is around RS. 60 crore, with bulk water charges (~Rs.34 crore) and electricity costs (~Rs. 19 crore) forming the major share.
- City has a water tariff of Rs. 1500 for residential properties and around Rs. 3100 for non-residential properties.
- With tax collection efficiency at 64%, the city is able to recover around 38% of the water supply expenditure

Source: PAS-SLB data, 2024-25

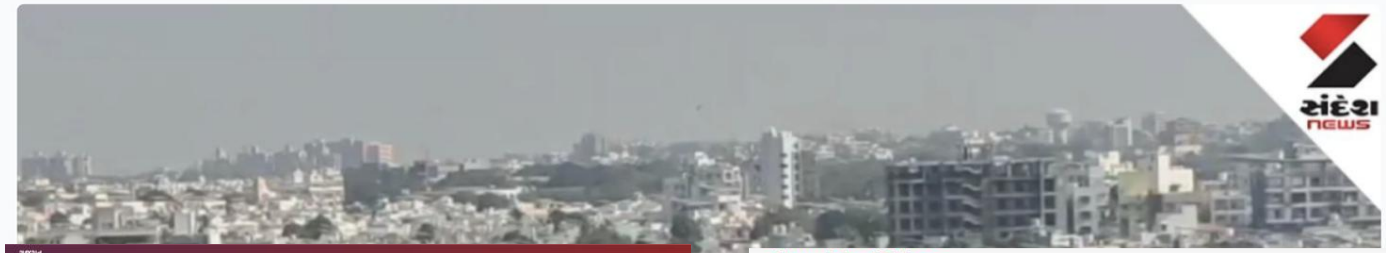
What city can do in the challenging situation??

Bhavnagar: શહેરમાં મહીં-પરીએજમાં મેન્ટેનન્સને કારણે શહેરના 40% વિસ્તારોમાં બે દિવસ પાણી કાપ

ભાવનગરમાં આગામી 6 ફેબ્રુઆરી અને 7 ફેબ્રુઆરી એમ બે દિવસ માટે પાણી કાપની જાહેરાત કરવામાં આવી છે. મહીં-પરીએજ લાઇન પર મેન્ટેનન્સની તાકીદની કામગીરી હાથ ધરવામાં આવી છે.

Gujarat | By Sandesh Team | Published: Feb 05, 2026 02:37 pm

Share With:



ભાવનગર શહેરમાં ઉનાળામાં પાણીની જરૂરીયાત વધી (ETV Bharat Gujarat)

By ETV Bharat Gujarati Team
Published : May 1, 2026 at 2:30 PM IST

1 Min Read

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ભાવનગર : ઉનાળામાં પાણીની જરૂરીયાત વધે છે ત્યારે તખતેશ્વર ફિલ્ટર પ્લાન્ટમાં રોજના ટેન્કરોનું વિતરણ કરવામાં આવે છે. આમ તો શહેરમાં પાણીની લાઇનો છે. છતા ટેન્કરોની પણ માંગ રહે છે. જાણો ભાવનગર શહેરમાં રોજના કેટલા ટેન્કરનું વિતરણ થાય છે.

Ahmedabad Others

Heavy rains batter Bhavnagar, Amreli

Two dead, several areas flooded as monsoon arrives in Gujarat; heavy rains expected this week


50 students marooned in a Mahuva village rescued

Water-logging in Sihor


Mahuva: People being rescued from heavilly flooded areas; water levels reach car windows

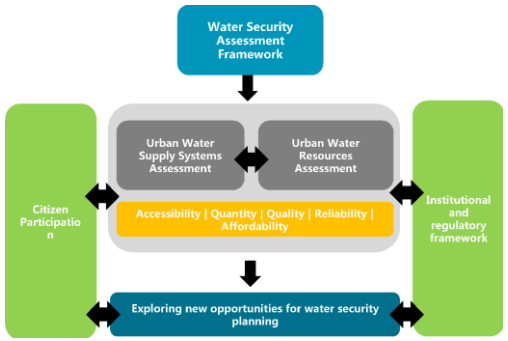

Palitana


Jesar


Pipardi, Savarkundla taluka

Bhavnagar can develop Water Security Action Plan based on CWAS's planning toolkit, implemented in cities of Kachchh...

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**	• **Non-daily 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

Initiatives that cities can take up...

Plan at watershed level

Instead of administrative boundaries, map the city into natural drainage units (micro-watersheds)

Integrate Urban Stormwater with Groundwater Recharge

Decentralized Rainwater Harvesting (RWH)

Protect and Restore Natural Water Bodies

Convergence Across Departments

Align urban local bodies, development authorities, groundwater departments and Integrate schemes (AMRUT, Smart Cities, MGNREGA where applicable)

Policy and Regulatory Support

Monitoring, Maintenance & Scaling

Rainwater Harvesting (RWH)

Rainwater harvesting is the process of collecting and storing rainwater that falls on our rooftops and open grounds for later use. This can be stored for direct use or can be recharged into the ground water.

Where can be install ?

These Rainwater harvesting structures can be installed at anywhere including;

Aanganwadi


Gov. Buildings


Community level


Flooding Area


Farms

Schools/ colleges

Catch the rain

Where it fall, When it falls

For Water Security!

Do's and Don'ts for RWH

Proper rainwater harvesting ensures efficient water conservation and long-term sustainability.

Here are some key dos and don’ts to follow for effective implementation.

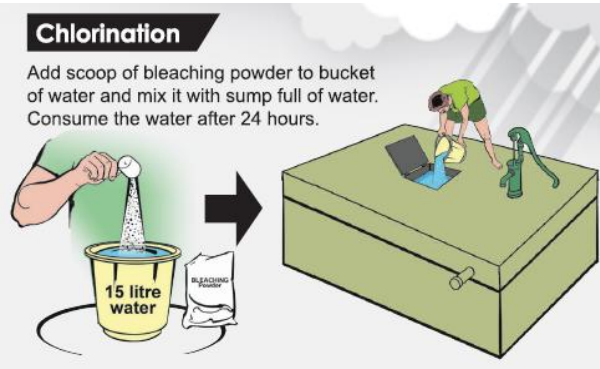
Do’s of RWH

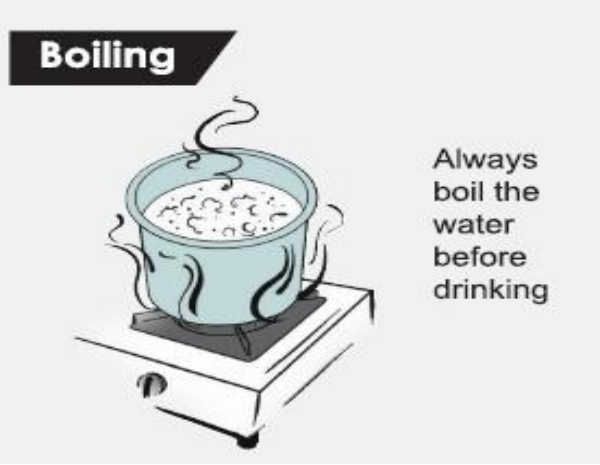
- Divert initial rainwater before collecting it in the storage tank
- Clean roof and gutters before every monsoon
- Make sure the pipes are well maintained
- Ensure the rainwater tank has a tight lid to block sunlight and prevent algae growth.

Don’ts of RWH

- Do not store rainwater in tanks without proper covers.
- Don’t use paints, chemicals or hazardous substances on the roof
- Don’t leave the first rain separator valve open! Remember to close it

Methods to disinfect water





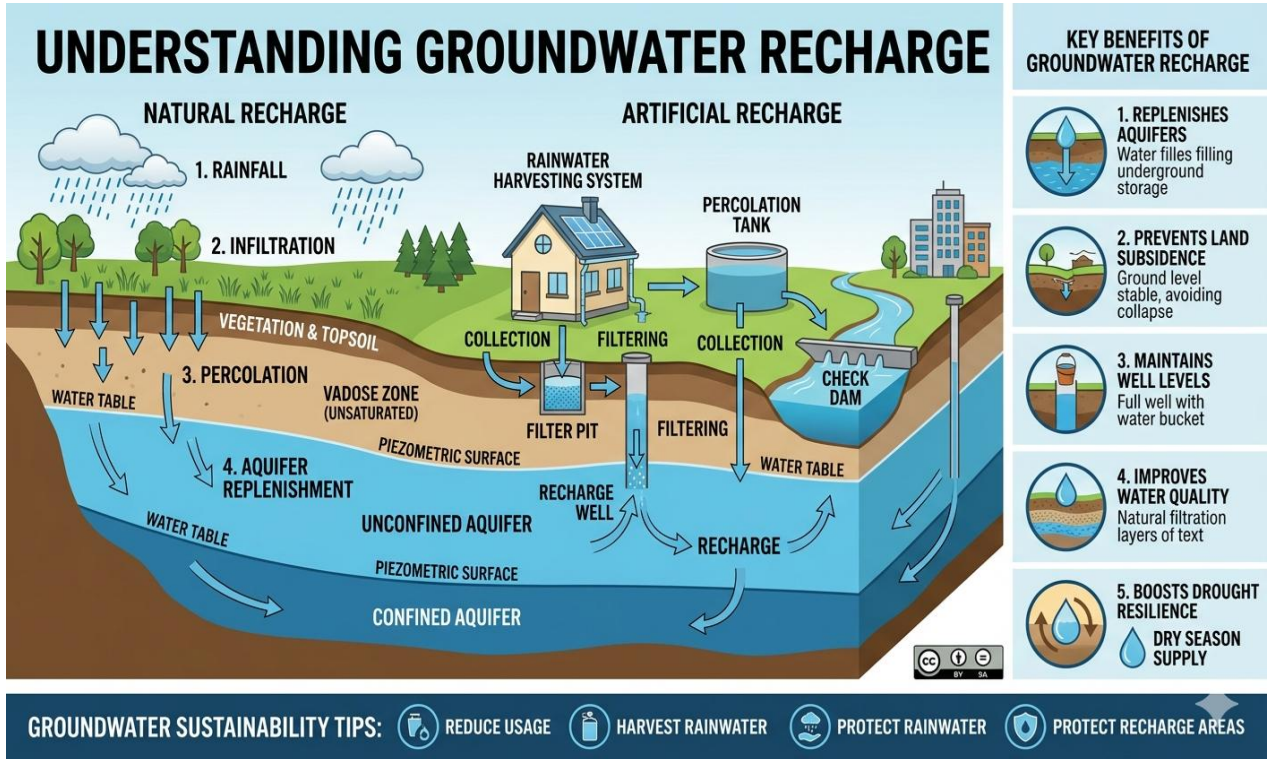
Ground Water Recharge (GWR)

1. What is Groundwater Recharge?

Groundwater recharge is the process of **allowing rainwater and surface runoff to seep into the ground**, helping to restore depleted aquifers and improve long-term water availability.

2. Why is it Important for Cities?

Recharge helps **increase groundwater levels, reduce tanker dependence, and ensure water availability during dry periods**, making cities more resilient to droughts and climate variability.

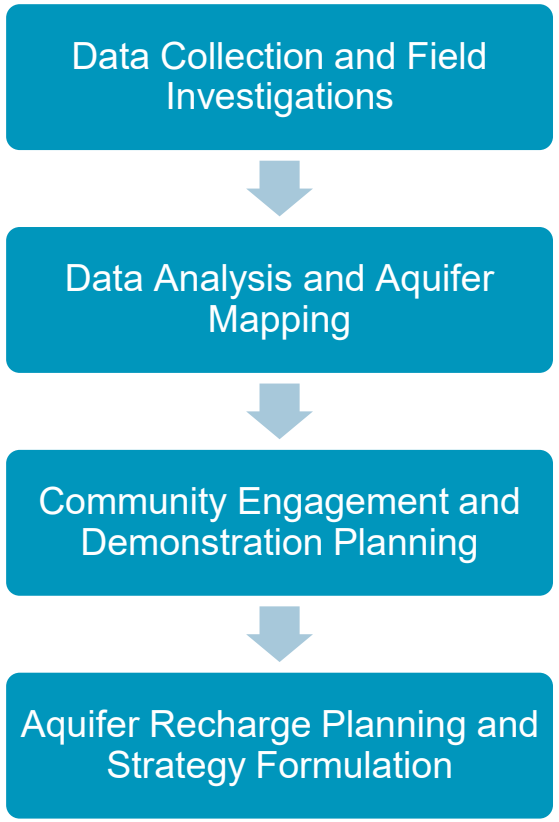


3. How Can ULBs Implement It?

ULBs can promote recharge at **Urban flooding spots through GWR systems and also explore recharge pits, recharge wells, rainwater harvesting systems, and revival of water bodies** in public spaces, making it a **low-cost and scalable solution** for urban water security.

Aquifer mapping turns invisible groundwater into visible data for better planning and sustainable use

Approach and Methodology to be adopted



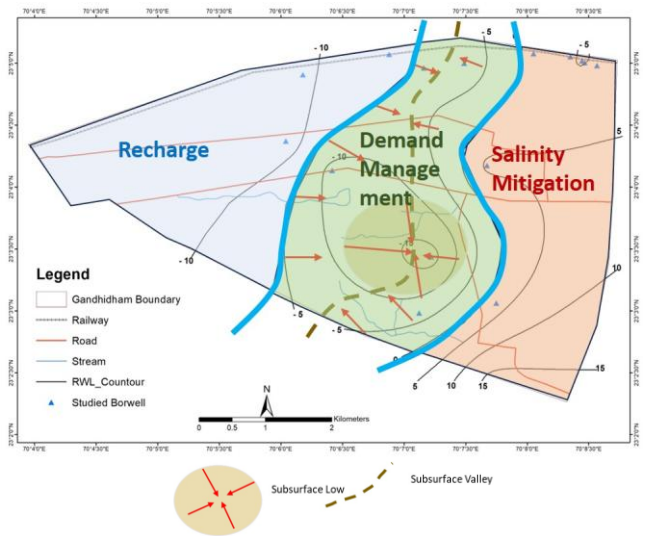
1. **Understanding Aquifers through Mapping:** Geohydrological studies combined with **aquifer mapping** help identify **types of aquifers (shallow/deep), recharge zones, and groundwater flow**.

1. **Supporting Better Water Planning:** Cities can use aquifer maps to **locate suitable sites for borewells and recharge structures**, avoid over-extraction, and plan **ward-level water budgeting**. Central Groundwater Board has conducted district level aquifer mapping and management for Bhavnagar District – reference link

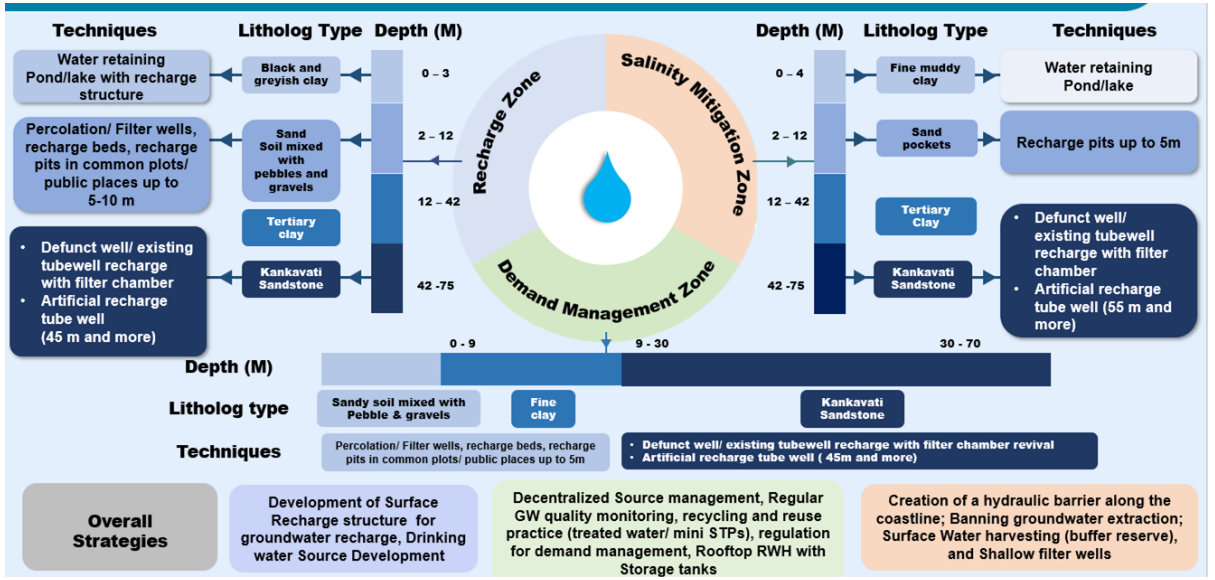
1. **Practical Use in Cities:** Many cities have used aquifer understanding to **design recharge interventions and manage groundwater more sustainably**, linking it with **rainwater harvesting and watershed planning** for improved water security.

Bhavnagar can undertake its own scientific studies to develop RWH and GWR strategies, building on lessons from Gandhidham...

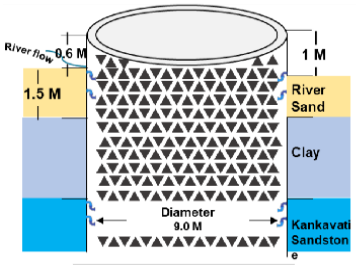
Geohydrological study for understanding aquifer and watershed of cities



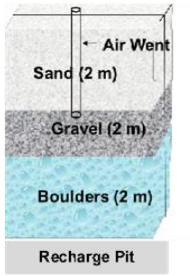
Zone-wise Groundwater recharge strategy



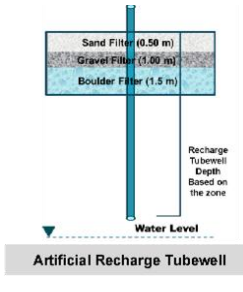
Identification of potential water recharge Techniques



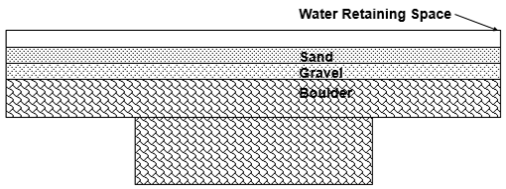
Filter Well



Recharge Pit



Artificial Recharge Tubewell



Percolation Bed

Rainwater Harvesting and Groundwater recharge @ **Gandhidham**

Anganwadi no-85

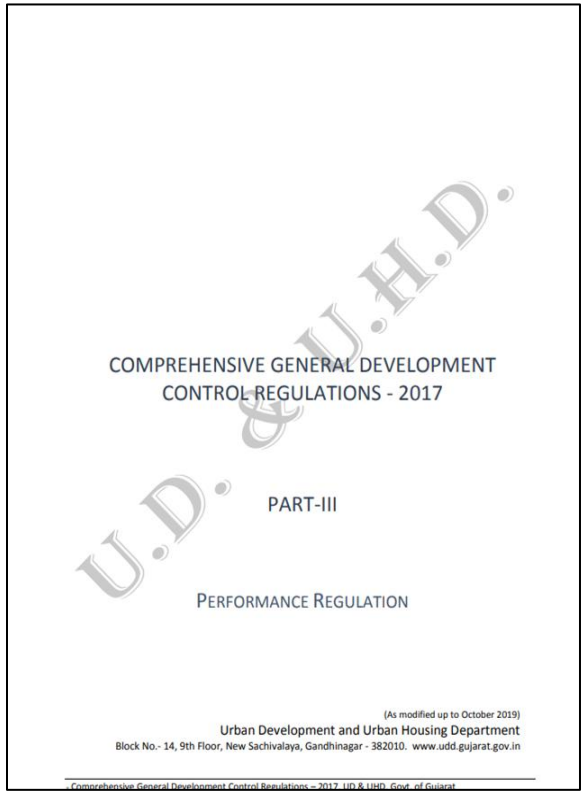
3 school cluster- Kanya Shala, Kumar shala and Hindi Shala

Gandhidham Municipal Council

Implemented 16 rainwater harvesting and groundwater recharge structures

Strengthening Development Control Regulations…

The mandate exists, however implementation and monitoring need strengthening….


COMPREHENSIVE GENERAL DEVELOPMENT CONTROL REGULATIONS - 2017

PART-III

PERFORMANCE REGULATION

(As modified up to October 2019)
Urban Development and Urban Housing Department
Block No.- 14, 9th Floor, New Sachivalaya, Gandhinagar - 382010. www.udd.gujarat.gov.in

U.D. & U.H.D.

Building Plot Area (Sq.km)	Harvest Infrastructure Type
Between 80 to 500	Percolation Pit or Bore Recharge
Between 500 to 1500	Percolating Well with Rain Water Harvesting System
Between 1500 to 4000	Percolating Well with Rain Water Harvesting System (up to ground second river)
4000 and above	Percolating Well with Rain Water Harvesting System (up to ground second river) for every 4000 sq.mt area

- Inclusion of Rainwater harvesting as part of **GDCR**
- **Rain water harvesting is mandatory** for all buildings with **ground coverage of 80 sq.mts and above**
- Policy initiatives needs to be **supported by ground level implementation and monitoring**

Steps Bhavnagar can Take for effective implementation

Ground Level inspection: Enlisting buildings/ structures falling under the mandate

Notifying premises for implementation compliance, with timeline

Incentivizing/ penalizing

Developing RWH help desk/ kiosk

Capacity building workshops for local masons

Monitoring and database creation

Source: https://bmcgujarat.com/Files/DCR.pdf

Emerging approaches to move towards water security...

 **Water sensitive urban design**	Integrated planning approach that manages the entire water cycle—stormwater, wastewater, and water supply—to minimize environmental degradation and improve amenity
 **Blue Green Infrastructure**	Integrating natural water elements ("blue"—rivers, wetlands, ponds) with green spaces ("green"—parks, forests, green roofs) to create more sustainable, resilient, and livable cities
 **Innovative Technologies**	Advanced, science- and engineering-driven systems, tools, and processes that enhance the efficiency, reliability, sustainability, and resilience of water resource management
 **Nature Based Solutions (NbS)**	ecosystem-based approaches that protect, restore, or sustainably manage natural systems to enhance the availability, quality, and resilience of water resources
 **Knowledge based approach**	systematic use of scientific studies, data analysis, and evidence-driven insights to understand water systems and inform the development of effective, context-specific management strategies

Adapting these approach, Bhavnagar can move towards water security...

Water sensitive urban design

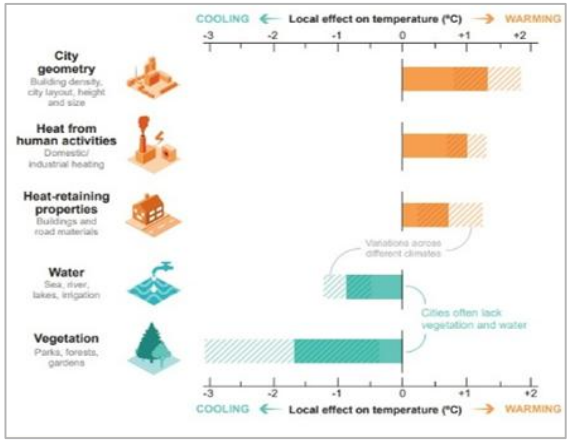
Rainwater Falls on	Water Sensitive Urban Design Elements
Green Areas (Parks, Forest, etc.)	Retention Ponds, Detention Ponds
Roads / Green Streets	Bio Swales, Vegetated Filters, Gravel Filters along the Roads, Pervious Paving on Footpaths, Underground Storage Tanks (for RW and TWW storage) to use it for roadside Landscaping and Horticulture, Rain Gardens
Open Parking Lots	Bio Swales, Vegetated Filters, Gravel Filters, Pervious Paving
Open Land	Retention Ponds, Detention Ponds, Dry Swales
Water Bodies / Drains	Constructed Wetlands (to rejuvenate water bodies / lakes)

Blue green infrastructure

Focus on Lake Management – Increasingly important for climate perspective...

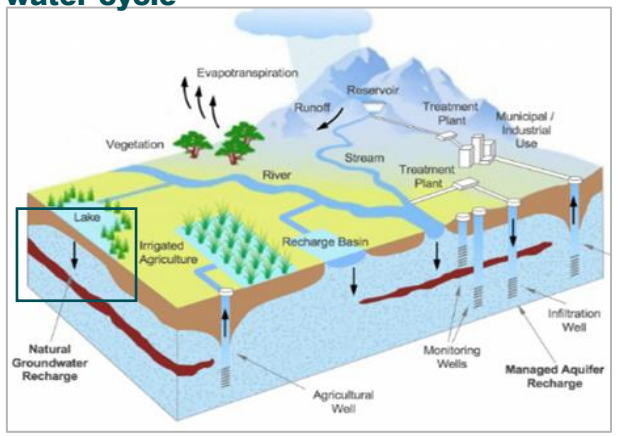
Lakes critical for adaptation and mitigation efforts

Regulating urban temperatures



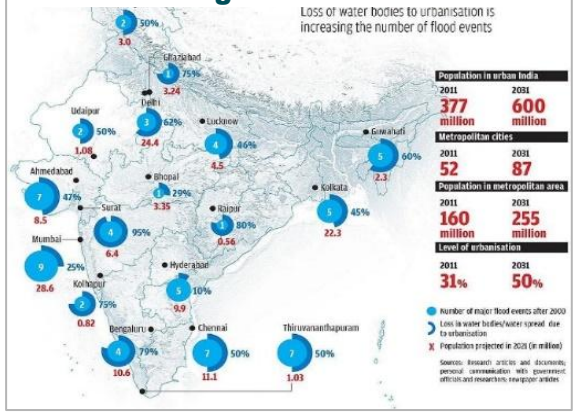
Intergovernmental Panel on Climate Change (IPCC). (2023). Linking Global to Regional Climate Change. In Climate Change 2021 – The Physical Sciencea Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (pp. 1363–1512). chapter, Cambridge: Cambridge University Press.a

Groundwater recharge and maintaining water cycle



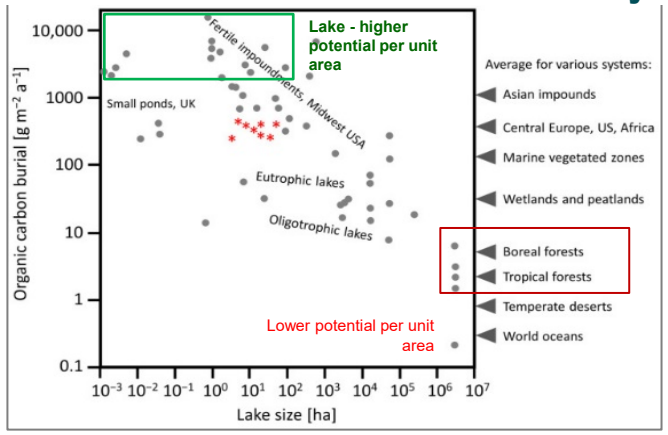
INOWAS, accessed from inowas.com, Feb 2025. (adapted from California Department of Water Resources)

Stormwater drainage and reduced risk of flooding



Source: Two sides of the same coin: Shrinking water bodies and urban floods, Down to Earth, August 2020

High potential of carbon sequestration - nature based solutions for carbon neutrality?



Skwierawski A. (2022). Carbon Sequestration Potential in the Restoration of Highly Eutrophic Shallow Lakes. International journal of environmental research and public health, 19(10), 6308. https://doi.org/10.3390/ijerph19106308

Disappearance and degradation of lakes requires urgent attention!

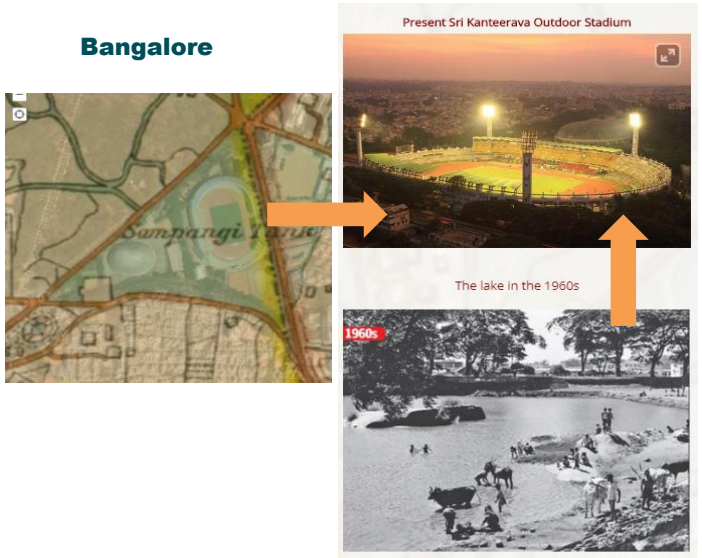
- 70 % of surface water in India is unfit for consumption due to water pollution and contamination issues.
- **50 % of lakes across the globe** have **shrunk** from 1992 – 2021
- Degradation of lakes also linked to food insecurity and loss of livelihoods

Ahmedabad
204 lakes in 1960
to
134 lakes in 2021

70 lakes become extinct in 6 decades!!

Source: 1. "Water Pollution Is Killing Millions of Indians. Here's How Technology and Reliable Data Can Change That." World Economic Forum, October 2019. 2. Yao, Fangfang, et al. "Satellites Reveal Widespread Decline in Global Lake Water Storage." Science, vol. 380, no. 6646, 2023, pp. 146–150, May 2023. 3. Nayak, P.K. Fisher communities in transition: understanding change from a livelihood perspective in Chilika Lagoon, India. Maritime Studies 16, 13 (2017)

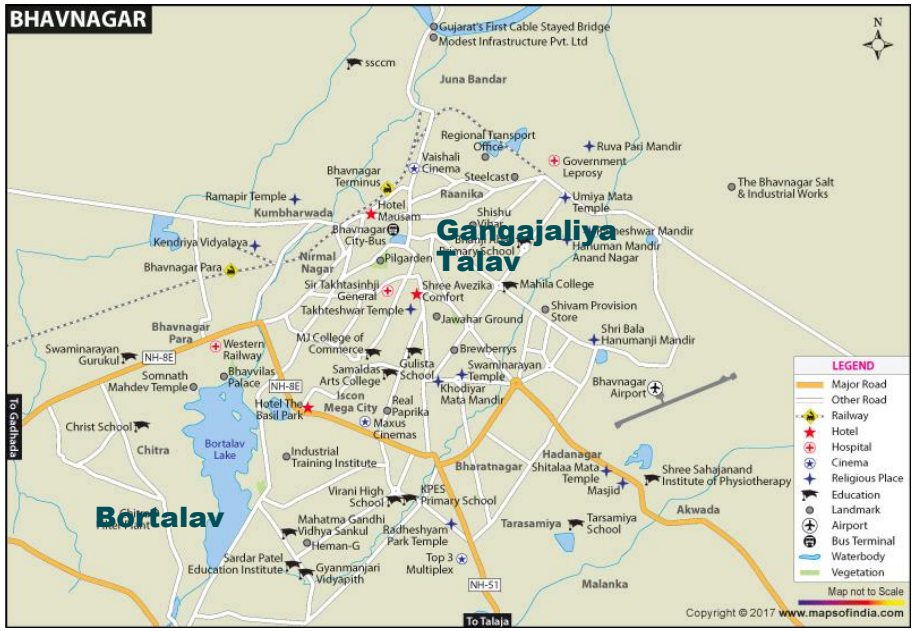
Bangalore



CWAS CENTER FOR WATER AND SANITATION | CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION | CEPT UNIVERSITY

Source: CWAS Study un AVPN, google.org and ADB

Bhavnagar can revitalise surface water sources that once served as key domestic water supplies...



Sr. No.		Parameter	Season	Analytical results		DESIGNATED BEST USE OF WATER (IS: 2296-1982) CPCB*					National Lake Water Quality Standards for MALASIYA**	
				Gangajaliya lake	Bore Talav	Class A	Class B	Class C	Class D	Class E	CATEGORY B	CATEGORY C
1	Physico-Chemical Parameter	pH	Pre monsoon	7.46	8.29	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
			Post monsoon	8.25	8.34							
2		Color (Hazen)	Pre monsoon	15	10	10	300	300	-	-	150-300 (TCU)	300 (TCU)
			Post monsoon	20	20							
3		Conductivity (µS/cm)	Pre monsoon	1165	617	-	-	-	1000	2250	1000	2000
			Post monsoon	606	545							
4		Turbidity (NTU)	Pre monsoon	9	575						40-70	70
			Post monsoon	44.9	23.8							
5		Chloride as Cl^-	Pre monsoon	152.45	59.98	250	-	600	-	600	250	250
			Post monsoon	79	54.93							
6		Total Hardness (mg/L)	Pre monsoon	400	200	200	-	-	-	-	-	-
			Post monsoon	150	200							
7		Ca^{++} Hardness (mg/L)	Pre monsoon	100	80	200	-	-	-	-	200	-
			Post monsoon	80	100							
8		Mg^{++} Hardness (mg/L)	Pre monsoon	300	120	200	-	-	-	-	-	-
			Post monsoon	70	100							
9		TDS (mg/L)	Pre monsoon	616	316	500	-	1500	-	2100	1000	1000
			Post monsoon	306	274							
10		DO (mg/L)	Pre monsoon	6	7.54	6	5	4	4	-	5.5-8.7	4.5-10.3
			Post monsoon	7.78	7.86							
11		BOD (mg/L)	Pre monsoon	0.71	6.42	2	3	3	-	-	6	6
			Post monsoon	BDL	BDL							
12		Sulphate (mg/L)	Pre monsoon	126.61	36.56	400	-	400	-	1000	250	250
			Post monsoon	42.12	39.63							
13		Nitrate (mg/L)	Pre monsoon	7.73	8.83	20	-	50	-	-	7	10
			Post monsoon	4.89	18.46							
14		Carbon Dioxide (mg/L)	Pre monsoon	44	52.8	-	-	-	6	-	-	-
			Post monsoon	26.4	26.4							
15		Oil & Grease (mg/L)	Pre monsoon	1	1.02	-	-	0.1	0.1	-	1.5	1.5
			Post monsoon	1.12	1.06							
16	Heavy Metals	Zinc (mg/L)	Pre monsoon	0.091	0.051	15	-	15	-	-	3	5
			Post monsoon	0.008	0.033							
17		Arsenic (mg/L)	Pre monsoon	0.004	0.006	0.05	0.2	0.2	-	-	0.1	0.15
			Post monsoon	0.001	0.003							
18		Lead (mg/L)	Pre monsoon	0.0004	0.004	0.1	-	0.1	-	-	0.05	0.05
			Post monsoon	0.001	0.004							
19		Iron (mg/L)	Pre monsoon	0.176	6.005	0.3	-	0.5	-	-	-	-
			Post monsoon	0.035	0.182							
20		Copper (mg/L)	Pre monsoon	0.004	0.017	1.5	-	1.5	-	-	0.02	0.02
			Post monsoon	0.003	0.009							
21		Cadmium (mg/L)	Pre monsoon	BDL	BDL	0.01	-	0.01	-	-	-	-
			Post monsoon	$0.01*10^{-3}$	$0.07*10^{-3}$							
22	Biological Parameter	Total Coliform (MPN/100ml)	Pre monsoon	1600	1600	50	500	5000	-	-	5000	5000
			Post monsoon	500	500							

* http://cwa.gov.in/sites/default/files/annexure-2.pdf

Cause of Lake degradation

- **Boretalav:** Siltation in water spread area; Algal blooms (Weed), Growth of aquatic plants, In lake human activity, Sedimentation/turbidity (Organic waste like plants and tree leaves), Water-level changes, Undeveloped Shoreline, Littering Organic waste
- **Gangajaliya Talav:** All the storm water drains form the layout are directed to this waterbody, Algal blooms, Growth of aquatic plants, In lake human activity, Sedimentation/turbidity (Organic waste like plants and tree leaves), Water-level changes

Key Actions for Urban Lake Management

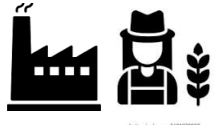
- **Prevent Sewage, Pollution, and Solid Waste Inflows**
- **Establish Continuous Lake Health Monitoring and Adaptive Management**
- **Restore Lake Ecology through NbS and Nutrient Management**
- **Protect Lake Boundaries and Maintain Ecologically Sensitive Shorelines**
- **Strengthen Governance, Regulation, and Community Stewardship**

Source: A Report on Environmental Monitoring for major lakes of Gujarat by Gujarat Environment Management Institute (GEMI) - 2019

https://gemi.gujarat.gov.in/uploads/Assets/tenders/tknanalyzer01202014113235433.pdf#:~:text=However%2C%20in%20broad%20it%20was%20found%20that,valuable%20urban%20water%20resources%20in%20long%20run.

Awareness generation and capacity building serves as key to move towards water security...

Water conservation is a common responsibility...

WHO?	 Governing Body	 Engineers/ Developers/ Builders	 Industry/ Agriculture practitioners	 Citizens
WHY?	• Mandated to provide water supply services to the public as per national norms	• First point of integration for water-efficient design • Critical actors in compliance with development regulations	• Largest consumer of water resources and has Livelihood dependency on water	• Basic life necessity to survive – sufficient quantity and quality

HOW?	• Integrated water resource planning and management
	• Effective enforcement of policies and regulations
	• Adopt water conservation practices
	• Awareness generation and capacity building
		• Design water efficient or sensitive infrastructure
		• Integrate RWH/ GWR technologies
			• Industry:
			  • Use of treated wastewater
			  • Integrating RWH/ GWR
			  • Monitor and ensure water quality compliance
			• Agriculture:
			  • Adopt water efficient irrigation practices
			  • Judicious use of water
			• Collaborate in watershed management
				• Use water responsibly
				• Harvest rainwater and use during lean period
				• Prevent pollution and protect water bodies
				• Report leakages
				• Participate in community water initiatives and spread awareness

Showcasing the learnings from Gandhidham - JAL SANRAKSHAN MELA: 20th – 21st July

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 villagers 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 Architechts, 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

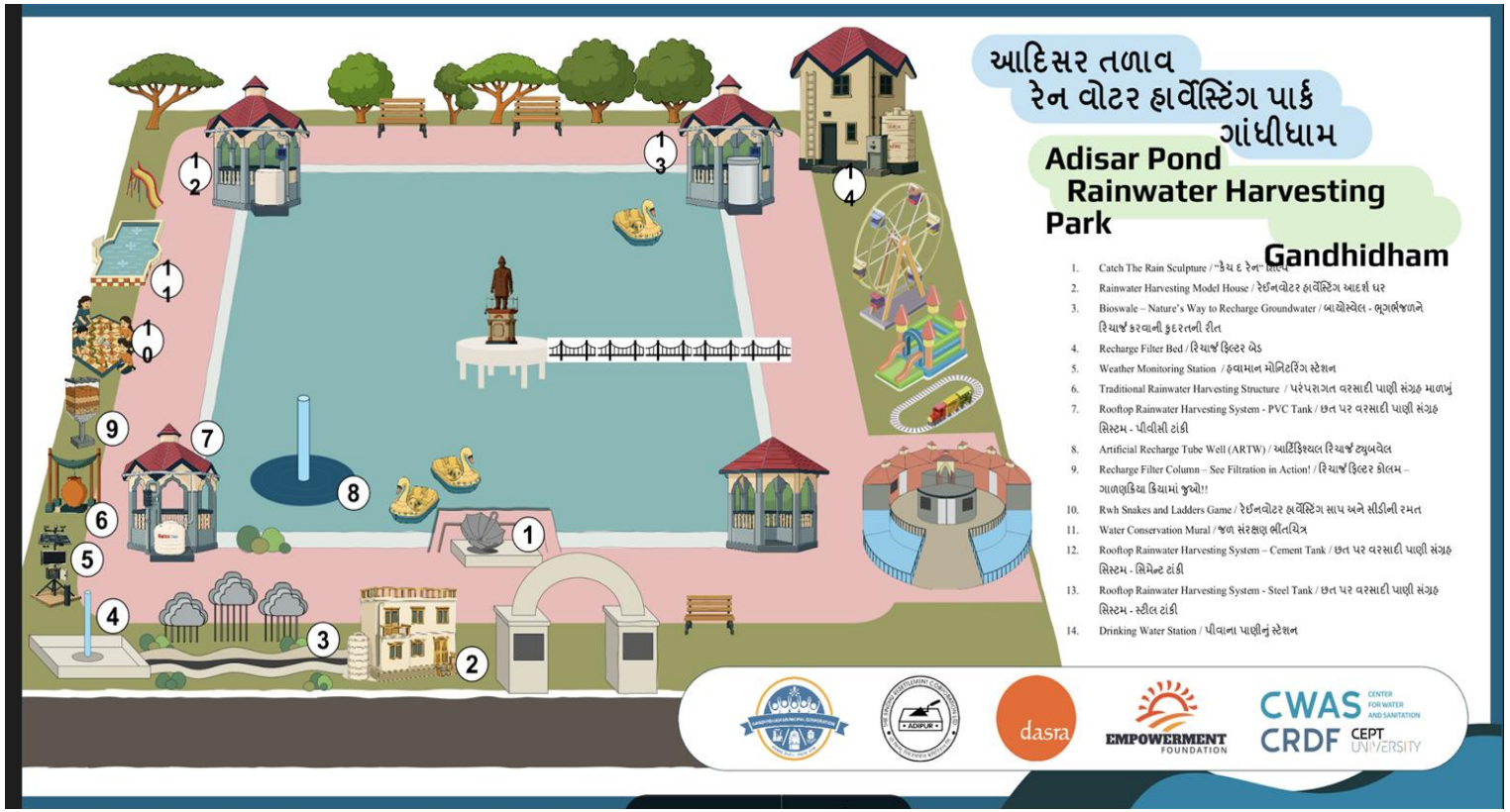
Multiple Stakeholder consultations

Focus group discussions with citizens and local residents

Multiple Stakeholder consultations with govt officals

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

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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