# MOVING TOWARDS CLIMATE RESILIENT WASH SERVICES

## Case of three cities in Maharashtra

CWAS CENTER FOR WATER AND SANITATION
CRDF CEPT UNIVERSITY

Supported by HSBC

स्वच्छ भारत
एक कदम स्वच्छता की ओर

एकच लक्ष्य शहरे स्वच्छ
स्वच्छ महाराष्ट्र अभियान (नागरी) २.०

माझी वसुंधरा
#majhivasundhara

इचलकरंजी महानगरपालिका
ICHALKARANJI MUNICIPAL CORPORATION

विटा नगरपरिषद, विटा.
स्थापना : १८५४

कराड नगरपरिषद, कराड.
स्थापना : १५-९-१८५५

# Moving towards Carbon Resilient WASH Services

Center for Water and Sanitation (CWAS), in partnership with HSBC, implemented an initiative to support the cities of Vita, Ichalkaranji, and Karad in Maharashtra in their transition towards carbon neutrality in the WASH (Water, Sanitation, and Hygiene) sector. The project aimed to embed climate mitigation and adaptation strategies within urban service delivery systems by undertaking a detailed assessment of WASH service chains, conducting energy audits, and calculating greenhouse gas (GHG) emissions across water and sanitation operations.

As part of the initiative, CWAS facilitated the implementation of citywide scheduled desludging programs and actively promoted the involvement of Self-Help Groups (SHGs) in operations and maintenance (O&M) activities. Pilot renewable energy systems were demonstrated at selected WASH infrastructure sites, showcasing the potential of solar power and other clean technologies in reducing carbon footprints. CWAS also provided capacity-building workshops and technical support to strengthen institutional capacities at the municipal level.

CWAS team acknowledges excellent support and the proactive engagement by the municipal councils of Vita, Ichalkaranji, and Karad as well as valuable insights from other key stakeholders, including private sanitation and water contractors, community-based organizations, and residents, particularly those from informal settlements. These consultations played a vital role in identifying existing service gaps and designing actionable interventions to build resilient WASH systems in the cities.

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Centre for water and Sanitation (CWAS)
CRDF, CEPT University, Ahmedabad

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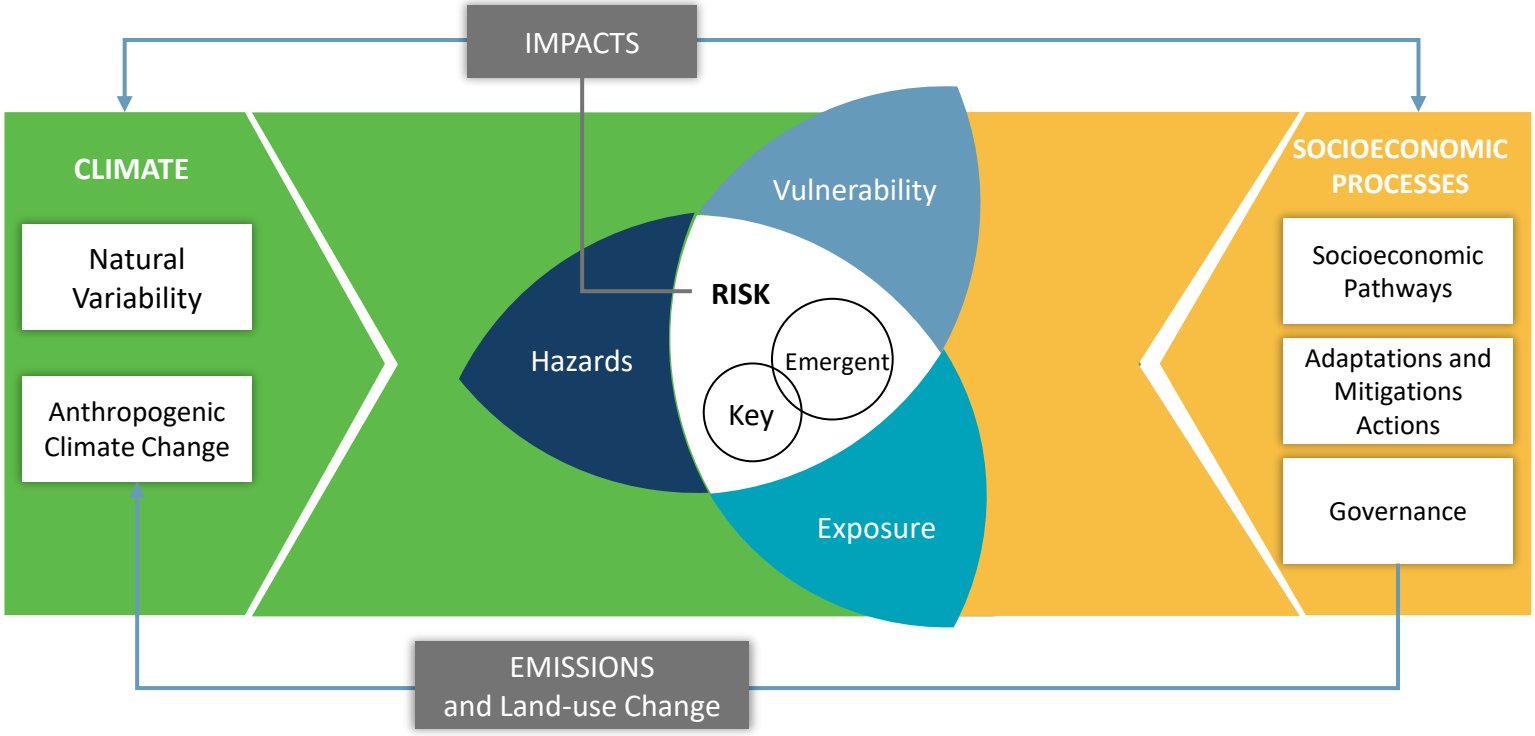
# 01

# Climate Change and WASH

# Climate Change and WASH

Climate change refers to long-term shifts in temperatures and weather patterns, which can occur naturally. However, since the 1800s, human activities—primarily the burning of fossil fuels like coal, oil, and gas—have become the dominant cause. These activities release greenhouse gases (GHGs) such as carbon dioxide and methane, which trap heat in the atmosphere, disrupt the Earth's natural balance, and accelerate global warming.

India, like many countries, is experiencing the intensifying impacts of climate change. Nearly half of its cities are already facing the consequences—ranging from floods, droughts, and water scarcity to rising temperatures and declining biodiversity. These disruptions are particularly severe for essential services such as Water, Sanitation, and Hygiene (WASH). Extreme weather events and unpredictable rainfall patterns are straining water resources, damaging sanitation systems, and reducing access to clean, safe water. In some cases, contamination of water sources further endangers public health. As these challenges grow, the need for climate-resilient WASH infrastructure becomes increasingly urgent. all.



# Initiatives by Government

In the face of the global climate crisis, India has made strong commitments under its Nationally Determined Contributions (NDCs) to the Paris Agreement and further reinforced them at COP26. The country has pledged to achieve Net-Zero emissions by 2070 and aims to reduce its projected carbon emissions by one billion tonnes by 2030.

At the national level, the Swachh Bharat Mission (SBM) has been a cornerstone initiative, focusing on eliminating open defecation and improving sanitation infrastructure. It has played a pivotal role in increasing access to Individual Household Toilets (IHHTs) and promoting Fecal Sludge and Septage Management (FSSM) through sustainable, decentralized solutions.

Complementing these national efforts, the Government of Maharashtra has taken a proactive role in embedding climate resilience into urban development. The Swachh Maharashtra Mission for Urban Areas (SMMUA), launched in 2016, expanded on SBM's framework by introducing innovative sanitation concepts of ODF, ODF+, and ODF++, emphasizing safe faecal waste management and sustainable sanitation practices.

To strengthen its climate action, Maharashtra launched the Majhi Vasundhara (My Earth) Mission in 2022, led by the Environment and Climate Change Department. This flagship built around the five elements of nature—Earth, Water, Air, Energy, and Enhancement—the mission encourages urban local bodies and citizens to adopt environment-friendly.

Since 2010, the Center for Water and Sanitation (CWAS) has partnered closely with the Government of Maharashtra to support SMMUA and the Majhi Vasundhara Mission.

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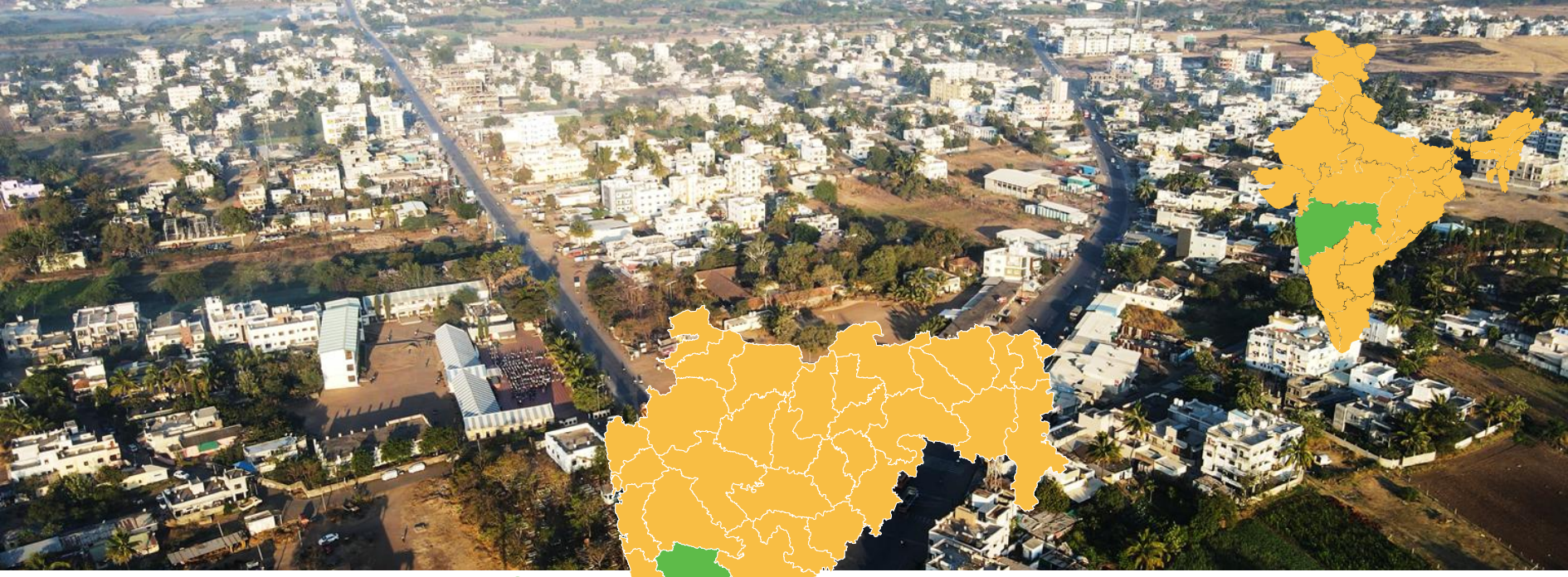
सप्तपदी स्वच्छतेची

एकच लक्ष्य शहरे स्वच्छ
स्वच्छ महाराष्ट्र अभियान (नागरी) २.०

माझी वसुंधरा




In 2022, CWAS received a CSR Grant by HSBC India to promote climate-resilient WASH System. Under this initiative, CWAS is collaborating with the municipal governments of Karad, Vita, and Ichalkaranji to implement adaptive and mitigative measures aimed at enhancing the resilience of the sanitation value chain to climate impacts.

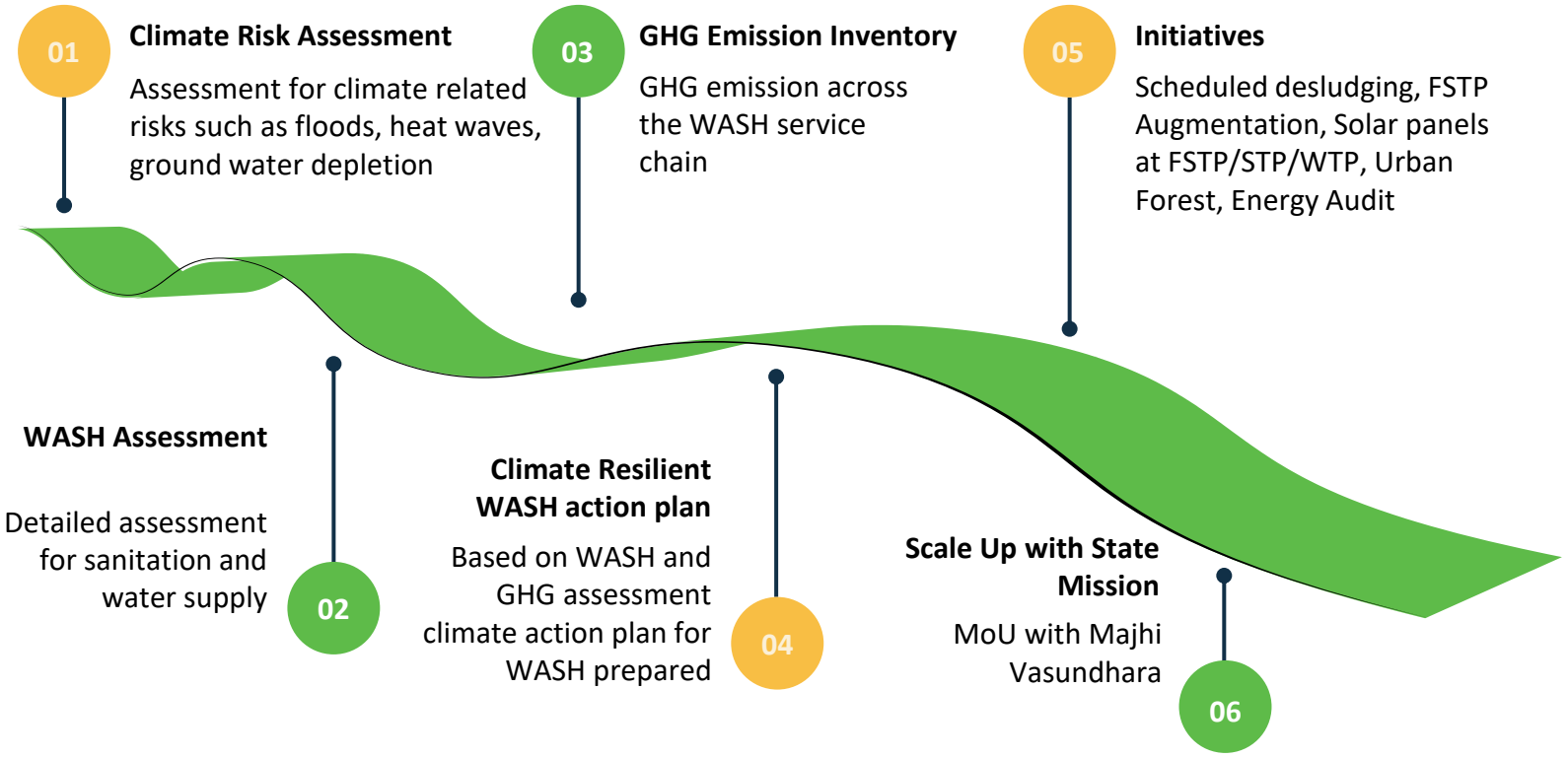
The project emphasizes practical, community-focused interventions to strengthen WASH services in these small and medium-sized cities, aligning with the goals of the Majhi Vasundhara Mission. By integrating climate adaptation and mitigation strategies, this initiative not only addresses immediate challenges but also reinforces Maharashtra's broader climate and sanitation agenda.

**Cities: Ichalkaranji Municipal Corporation | Vita Municipal Council | Karad Municipal Council**

This collaboration marks a significant step towards fostering climate resilience in urban sanitation and water management systems.

# Action Plan for Climate-Resilient WASH

The HSBC CSR project supports Urban Local Bodies (ULBs) in strengthening and managing inclusive, climate-resilient WASH services and infrastructure. In three cities of Maharashtra, CWAS conducted a detailed assessment of existing WASH services and infrastructure, followed by consultations with ULB staff, SHG women, and citizens to identify service gaps, challenges, and actionable solutions. Drawing from these insights, CWAS developed a comprehensive Climate-Resilient WASH Action Plan, which integrates adaptation, mitigation, and cross-cutting strategies to address climate challenges holistically.



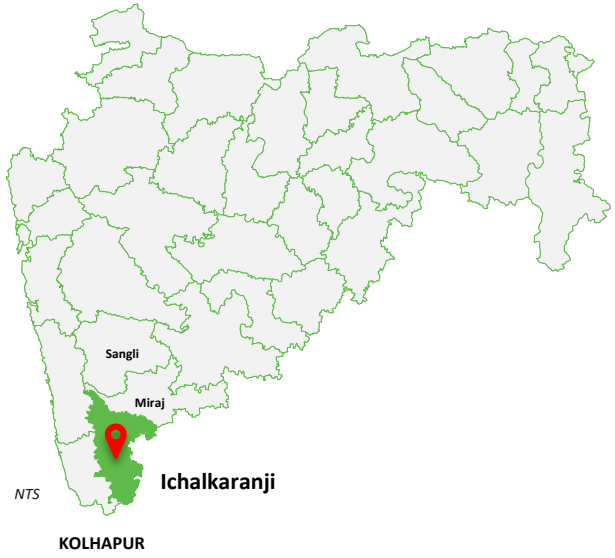

इचलकरंजी महानगरपालिका

# Ichalkaranji Municipal Corporation

**Ichalkaranji**, is located in the Panchganga valley with a southeastward slope. It is located approximately 29 km east of Kolhapur and 10 km southeast of the Hatkanangale railway station. The city experiences a warm, humid, and overcast wet season, while the dry season is characterized by hot and partly cloudy conditions.

As a newly established Municipal Corporation, Ichalkaranji relies partly on on-site sanitation systems in its core areas, while the newer developments are served by a sewerage network.

Kolhapur District




**29.84** Sq.km Area

**3.4Lakhs** Population *(as per 2019)*

**67K** Households

**32** Wards

*Source:Information from IMC, https://cgwb.gov.in/sites/default/files/2022-10/kolhapur.pdf*

***Palace of Ichalkaranji***

***Textile Mill***

***Ancient Ramling temple***

***DKTE Textile & Engineering Institute***


कराड नगरपरिषद, कराड

# Karad
# Municipal Council

**Karad,** a prominent urban center in Maharashtra's Satara district, is located along the banks of the Krishna and Koyna rivers. This strategic location enhances its scenic charm and supports its agricultural productivity. Known as the "Sugar Bowl of Maharashtra," Karad is a hub for sugar production.

The city boasts complete sewerage network coverage and a Sewage Treatment Plant (STP). Notably, Karad achieved a significant milestone in infrastructure development by becoming the first small and medium-sized town in Maharashtra to establish a sewer network as early as 1972.

Satara District


**10.55** Sq.km Area

**89K** Population

**13K** Households

**15** Wards

*Source: KMC and Primary Survey*

***Krishna Ghat***

***Krishna Institute of Medical Science***

***Govt. Engineering College, Karad***

***Naktya Ravlyachi Vihir***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विटा नगरपरिषद,विटा.
प्रदिप मेडिकल्स
जगताप सेल्स कार्पोरेशन
न्यू साळुंखे ज्वेलर्स

# Vita
# Municipal Council

**Vita,** the headquarters of Khanapur Taluka in Sangli district, is situated in the Krishna River basin with a southwestward slope. The town experiences warm, dry, and clear summers, while winters are long, cold, windy, and partly cloudy.

Known as the "City of Gold," Vita is a rapidly growing hub for gold trade and jewelry. Despite its growth, the town remains fully reliant on on-site sanitation systems, with a Faecal Sludge Treatment Plant (FSTP) for waste treatment.

Sangli District


**55.54**
Sq.km Area

**57K**
Population
*(as per 2019)*

**13K**
Households

**12**
Wards

*Source: Information from sanitation department, VMC and https://www.cgwb.gov.in/old_website/District_Profile/Maharashtra/Sangli.pdf*

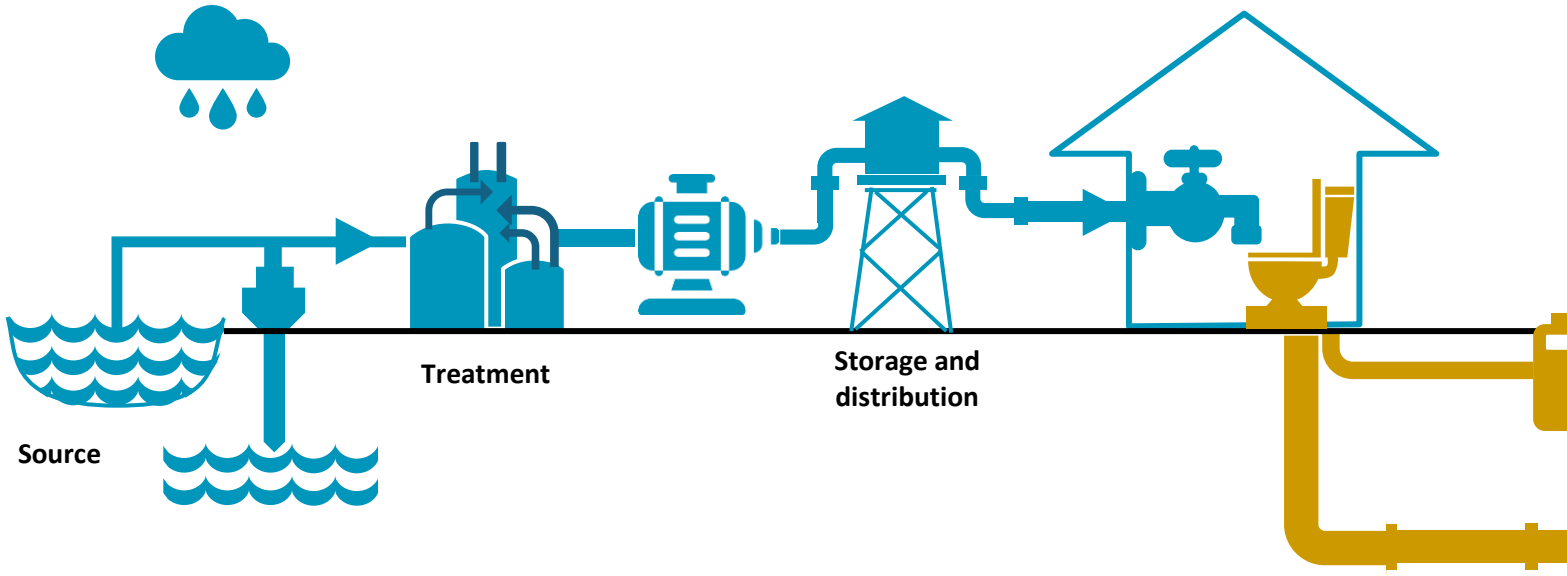
***Growing Handloom Business***

***Gold Jewellery Crafted***

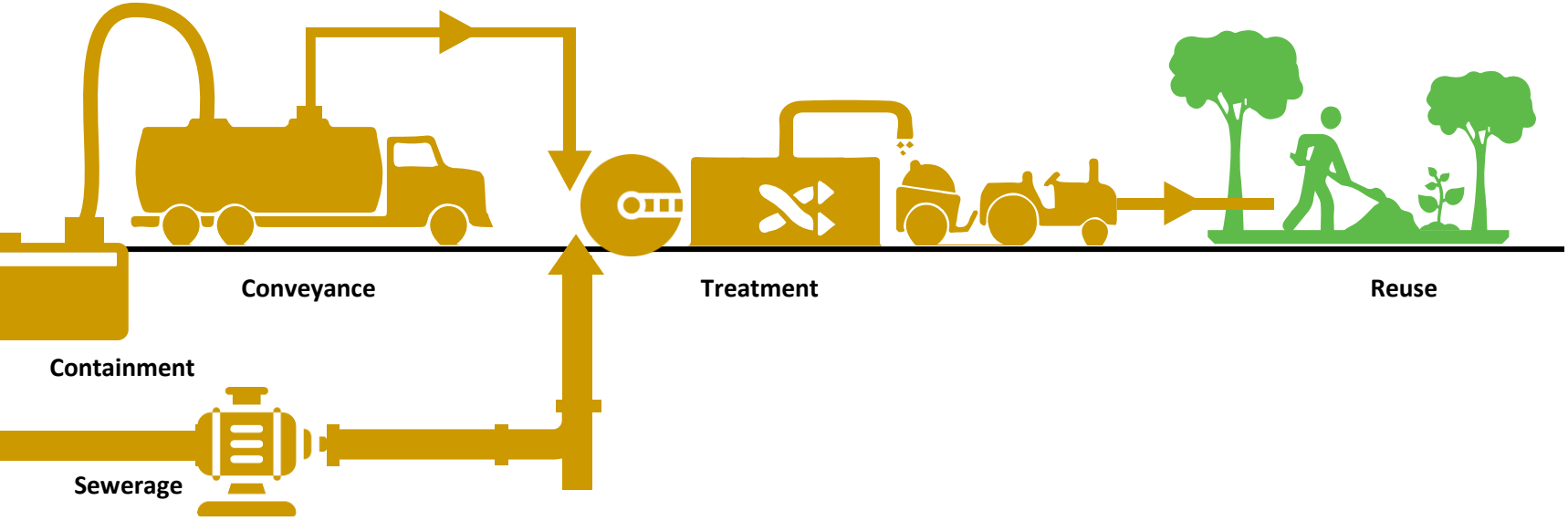
***Palakhi Festival***

***Temple of Revasiddha***

# WASH Service Chain in three cities




| | Water Source | WTP Capacity | WTP Used (Currently) | Water Supply Duration | Distribution Network Length |
|---|---|---|---|---|---|
| Ichalkaranji Municipal Corporation | Surface + Ground Water | 108 MLD (54 MLD and 54 MLD) | 54 MLD | 1.5 hrs (alternate-day basis) | 240 KM |
| Karad Municipal Council | Surface Water *(Koyana River)* | 33 MLD | 15-16 MLD | 2 hours/day | 65.8 KM |
| Vita Municipal Council | Surface + Ground Water *(Krishna River, Alsund Lake, borewells)* | 10.825 MLD | 10.825 MLD | 1 hours (alternate-day basis) | 125 KM |




| Household Water Connections | Water Supply (LPCD) | Sanitation Coverage | Type of Sanitation System | STP / FSTP Capacity |
|---|---|---|---|---|
| 45,065 tap connections of 63,500 HH (70.1%) | 80 LPCD | 57% Sewer, 43% On-site | Sewer Network (in 2 subzones) + On-site in other areas | 20 MLD and 18 MLD STP |
| 14,200 tap connection of 21,695 HH (65.5%) | 135 LPCD | 100% Sewer | Underground Sewer Network | 12.55 MLD STP |
| 10,500 tap connections of 13,900 HH (75.5%) | 105 LPCD | 100% On-site | On-site systems | 35 KLD FSTP |

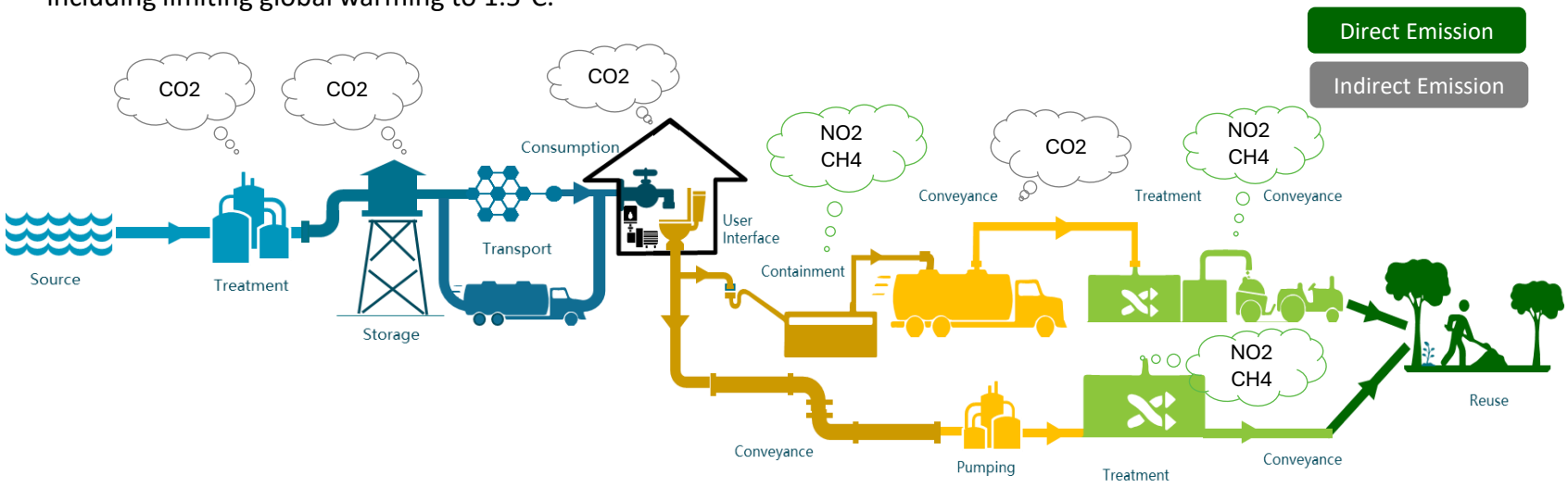

कराड नगरपरिषद, कराड.
सार्वजनिक शौचालय
कराड नगरपरिषद, कराड.
सार्वजनिक स्वच्छतागृह
(पुरुषांसाठी)

# 02

# Mitigation Initiatives

# GHG Emissions Estimation

As part of the Climate-Resilient WASH Action Plan, measuring and managing greenhouse gas (GHG) emissions is a critical step in climate mitigation. Recognizing the WASH sector's role in contributing to climate change, CWAS conducted a comprehensive GHG emissions assessment across three cities in Maharashtra. Using IPCC-recommended methodologies, the study estimated both direct and indirect emissions across the entire WASH service chain. In collaboration with municipal governments, CWAS is supporting these cities in transitioning towards low-emission, climate-resilient WASH systems. These efforts aim to reduce emissions, enhance adaptive capacity, and contribute to global climate goals, including limiting global warming to 1.5°C.




| | | | | |
|---|---|---|---|---|
| **ICHALKARANJI** | Total emission – 36,260 | Direct emission sanitation – 35,984 | Indirect emission water - 233 | Indirect emission sanitation - 42 |
| **KARAD** | Total emission - 1306 | Direct emission sanitation - 1213 | Indirect emission water - 64 | Indirect emission sanitation - 29 |
| **VITA** | Total emission - 9607 | Direct emission sanitation - 9476 | Indirect emission water - 125 | Indirect emission sanitation - 6 |

# Energy Audit for WASH

In the context of growing energy demands and the need for sustainable development, energy efficiency within municipal services has emerged as a critical area of focus. Water, Sanitation, and Hygiene (WASH) services, which form the backbone of urban infrastructure, are significant contributors to municipal energy consumption—ranging from 40% to 90% of total energy use in various cities.

Recognizing the energy-intensive nature of these services, energy audits were conducted in the cities of Vita, Ichalkaranji, and Karad to identify inefficiencies and recommend strategies for optimization. These audits delved deep into energy consumption patterns, assessing areas of high use and operational bottlenecks. The findings painted a clear picture: outdated pumps and inefficient practices were driving up energy costs and emissions.

**6%**

Maharashtra's electricity is used by municipal services.

**40-70%**

consumed by WASH services.

**50-70%**

municipal energy costs are due to WASH.

Based on initial energy audits in Vita, Karad, and Ichalkaranji, CWAS recommended key improvements to enhance energy efficiency in WASH systems. A major suggestion was the replacement of 27 old pumps operating at less than 50% efficiency. Vita has implemented these recommendations, leading to improved energy performance. Karad and Ichalkaranji are in the process of adopting similar measures, demonstrating how targeted upgrades can reduce costs and support sustainable urban services.

To further support these improvements, CWAS conducted a training program on Standard Operating Procedures (SOPs) for pump operations for municipal engineers and pump operators from the three cities, the training focused on building technical capacity for efficient pump operation and maintenance. Sessions included insights from the energy audits, guidance on VT pump installation and troubleshooting (in collaboration with Kirloskar Brothers Limited), and a site visit to the Water Treatment Plant in Ichalkaranji. The program addressed routine O&M challenges, emphasized pump efficiency, and encouraged the use of SOPs and genuine spare parts. It also proposed a technical helpline and regular hands-on trainings to reinforce long-term capacity building.

**INR 8 cr.**

estimated cost of replacing old, inefficient pumps

**INR 15 cr.**

potential savings in electricity costs over time

# 215 kW of solar capacity

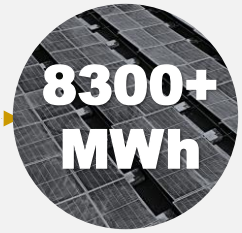
has been installed across three cities

# Energy Transition

In alignment with national and state climate goals, CWAS is supporting Urban Local Bodies in their shift towards low-carbon urban services. A key focus is on transitioning energy use in the WASH sector—from conventional sources to clean, renewable alternatives. Guided by city-specific assessments, solar energy systems have been strategically deployed at key infrastructure sites, including water and wastewater treatment plants. These installations not only reduce dependency on grid electricity but also contribute to long-term cost savings and emission reductions. The scale-up of such efforts marks a decisive step in accelerating climate action at the city level.

**344 MWh**

**Clean energy generated as part of the pilot project efforts till March 2025**



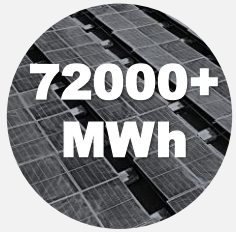

Clean Energy Generation Potential (Next 25 Years)


$CO_2$ Emissions Reduction Potential (Next 25 Years)


Cost Savings Estimate (Next 25 Years)

**980 KW**

**Clean energy to be installed as part of the scale up efforts**

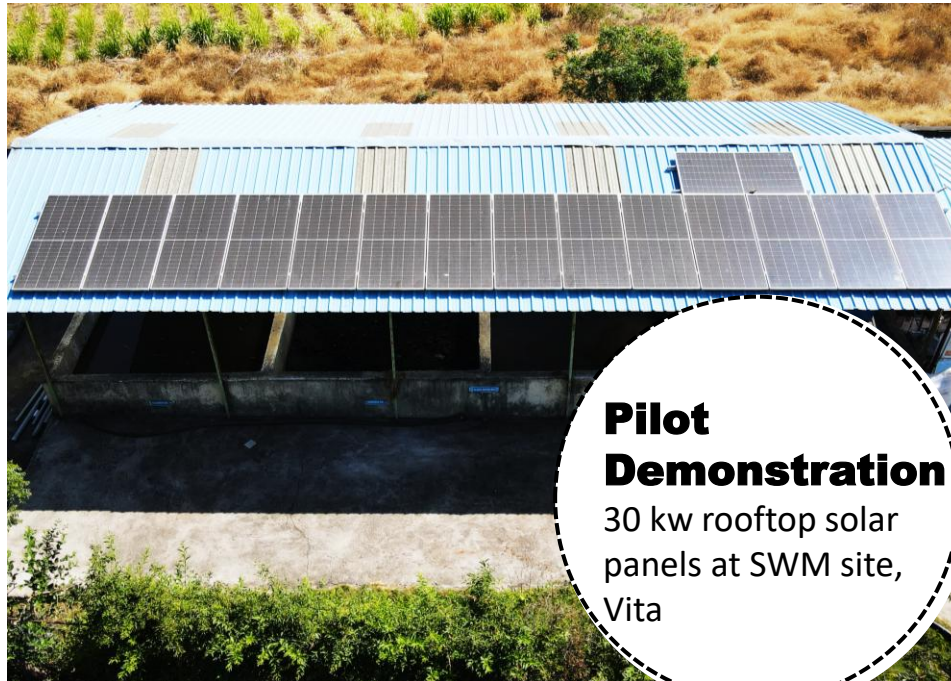



Clean Energy Generation Potential (Next 25 Years)


$CO_2$ Emissions Reduction Potential (Next 25 Years)


Cost Savings Estimate with an initial investment of 12cr (Next 25 Years)

**Pilot Demonstration**
Installation of 103 kw solar panel at WTP, Ichalkaranji



**Pilot Demonstration**
30 kw rooftop solar panels at SWM site, Vita

As part of energy transition pilots, a total of **205 kW (280 kw installed by KMC at STP but pending approval from MSEB)** of solar capacity has been installed across water treatment plants (WTPs), sewage treatment plants (STPs), solid waste management (SWM) sites, and pumping stations in Vita, Ichalkaranji, and Karad. These installations are supported by real-time online monitoring systems to track energy generation and efficiency. In addition, Self-Help Groups (SHGs) have been engaged in two cities for the cleaning and maintenance of solar panels, contributing to both economic empowerment of women and the sustained performance of solar infrastructure. To complement these efforts, energy audits of WASH infrastructure were conducted to identify areas of improvement, and orientation sessions were held for ULB leadership, department heads, and technical staff to strengthen their understanding of energy-efficient practices and technologies.

**317 MWH**
clean power generated

**₹23.7 lakh**
annual financial savings

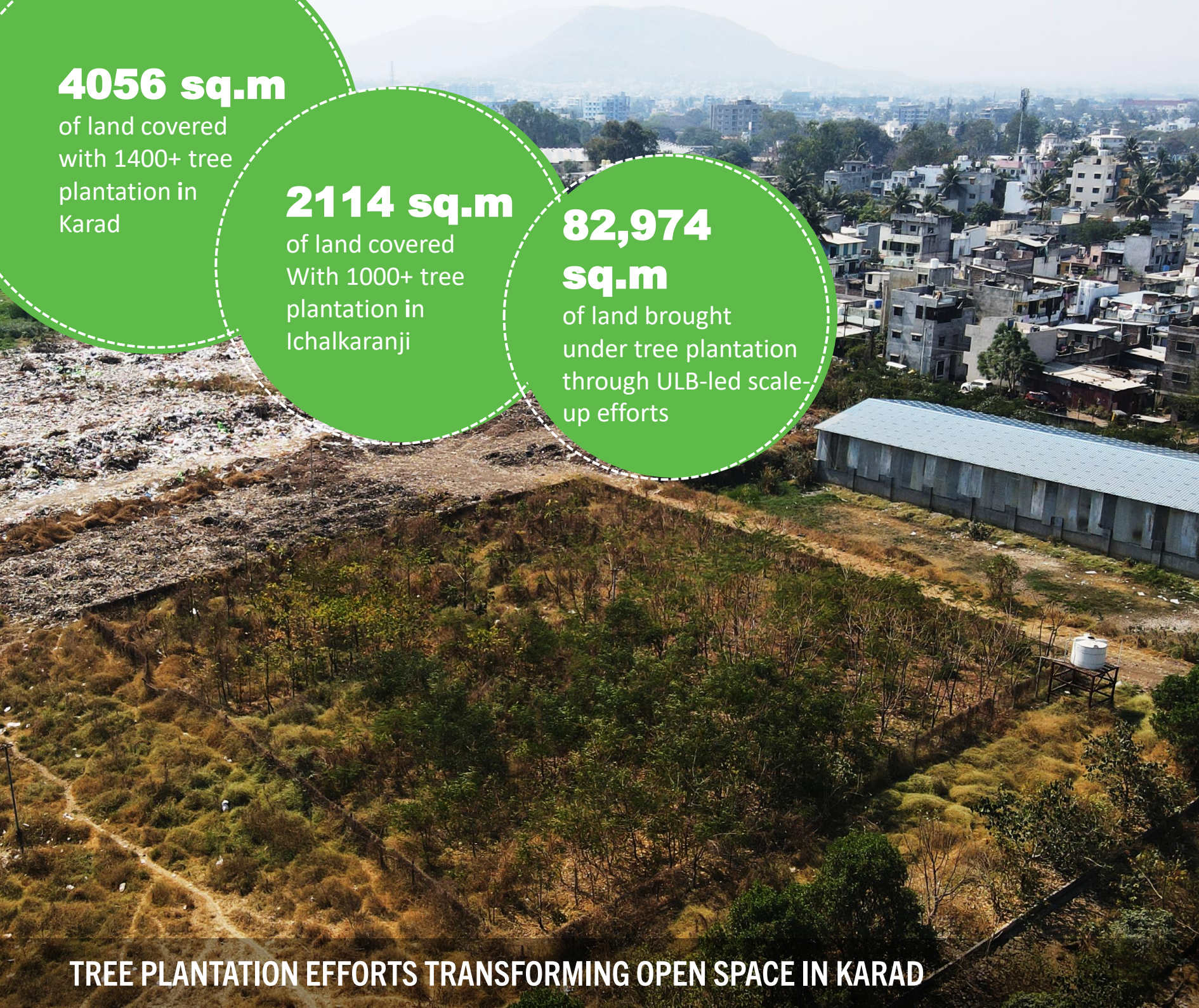
**Pilot Demonstration**
760 kw solar panels at FSTP and 8 kw at SDB shed, Karad

# Development of Carbon Sinks (Urban Forest)

Urban forests have emerged as a powerful nature-based solution for enhancing climate resilience, while aligning with key policy frameworks such as the Swachh Bharat Mission 2.0 and Maharashtra's Reuse Policy. These forests are established on unused land near FSTPs, STPs, or SWM sites, transforming them into dense, multi-layered ecosystems through the Miyawaki plantation method that emphasizes the use of native species.

During the project period, a total of **2500+ trees** have been planted across **6170 square meters** in cities like Karad and Ichalkaranji. The initiative began with identifying suitable urban sites and preparing the land, including the clearance of solid waste in some cases and soil enrichment. In Karad, a former dumping ground was repurposed, while in Ichalkaranji, land near the STP was developed with the support of the municipal corporation.

Private landscaping experts were engaged for the design, plantation, and initial maintenance. A key component of this initiative is the formal engagement of women-led Self-Help Groups (SHGs) for the long-term maintenance of these forests. These SHGs were selected through transparent tender processes and trained in tasks such as irrigation scheduling and pesticide application.




TREE PLANTATION EFFORTS TRANSFORMING OPEN SPACE IN KARAD

URBAN FOREST MAINTENANCE

ICHALKARANJI'S OPEN AREAS ARE TURNING GREEN WITH TREE PLANTING

# Reuse of Treated Water

In alignment with mitigation efforts, CWAS has also supported the reuse of treated wastewater and solids at the Faecal Sludge Treatment Plant (FSTP) and the Sewage Treatment Plant (STP). These initiative shows resource efficiency by repurposing treated water and byproducts for sustainable urban applications.

At both facilities, treated wastewater has been utilized to irrigate urban forests developed adjacent to the treatment plants. These forests consist primarily of indigenous tree species, contributing to improved urban greenery and biodiversity. Additionally, treated water has been allocated for watering road medians, fire extinguishers, and other municipal uses, supported by a dedicated tanker service in each city. These innovative reuse strategies can effectively reduce the environmental impact of WASH services, enhance urban resilience, and support broader climate goals.

**6170**
sqm area

**2600+**
trees planted

**200 KL**
freshwater saved by reusing
treated wastewater

TANKER FILLING POINT FOR TREATED WASTEWATER

REUSE FOR VEHICLE WASHING

## REUSE OF TREATED WASTEWATER FOR PLANT WATERING

Reduces reliance on freshwater and supports sustainable water management.


# 03

# Adaptation Initiatives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VACUUM GAUGE

# Access: Increase in action of Individual Household Toilets

In the face of rising climate challenges, access to individual household toilets has become more than just a basic necessity-it's a key pillar of health and resilience for vulnerable communities. Beyond the immediate benefits of safety, privacy, and dignity, these facilities play a critical role in mitigating the impacts of climate change. Properly constructed and managed toilets prevent the contamination of water sources—an essential safeguard in areas increasingly prone to flooding or drought.

**HH Toilet Coverage in three cities :**

**77%**
Ichalkaranji

**94%**
Karad

**94%**
Vita


# Access: Gender inclusivity Community Toilets

Access to safe and inclusive sanitation is fundamental to ensuring dignity and well-being for all. Community toilets play a crucial role in serving diverse urban populations, especially those without access to private facilities. Gender-inclusive designs ensure that the specific needs of women, transgender individuals, and other marginalized groups are addressed in everyday sanitation services.


### Menstrual Hygiene and Management (MHM) Machinery :

In Vita and Ichalkaranji, menstrual hygiene facilities have been integrated into community and public toilets. This includes the installation and regular maintenance of sanitary pad vending machines and incinerators, pad refilling, safe ash disposal, and the promotion of hygienic menstrual health management (MHM) practices.

### Inclusive Community Toilets :

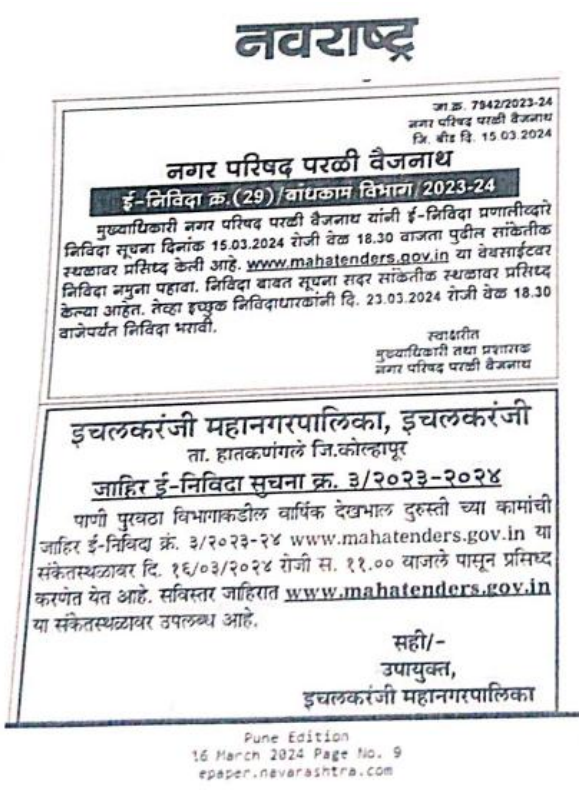
Community toilets provide essential sanitation access for urban populations, particularly in low-income and high-density areas. Designed with inclusivity and safety in mind, they serve the daily needs of women, children, the elderly, and gender-diverse individuals.


ENSURING HYGIENE THROUGH REGULAR DESLUDGING

# Conveyance: Citywide Scheduled desludging

Managing faecal sludge effectively is a cornerstone of climate-resilient sanitation systems. While access to toilets addresses one part of the challenge, ensuring the proper conveyance and treatment of sludge is equally critical. Regular desludging of septic tanks is essential to prevent overflows and minimize the release of harmful greenhouse gases like methane and nitrous oxide, which are significantly higher when tanks remain uncleaned. Studies reveal that frequent desludging can reduce methane emissions by nearly half, contributing to a healthier environment and lowering the pollutant load on treatment facilities.

Recognizing the importance of this process, scheduled desludging operations have been introduced, ensuring that septic tanks are cleaned *at least* ***"once every three years",*** as recommended by national guidelines. This initiative is supported by robust systems such as performance-based private sector engagement for desludging operations and real-time monitoring using digital tools like '**MahaSaniTrack'**.



नवराष्ट्र

जा.क्र. 7942/2023-24
नगर परिषद परळी वैजनाथ
दि. बीड दि. 15.03.2024

**नगर परिषद परळी वैजनाथ**

**ई-निविदा क्र.(29)/बांधकाम विभाग/2023-24**

मुख्याधिकारी नगर परिषद परळी वैजनाथ यांनी ई-निविदा प्रणालीव्दारे निविदा सूचना दिनांक 15.03.2024 रोजी वेळ 18.30 वाजता पुढील सांकेतीक स्थळावर प्रसिध्द केली आहे. www.mahatenders.gov.in या वेबसाईटवर निविदा नमुना पहावा. निविदा बाबत सूचना सदर सांकेतीक स्थळावर प्रसिध्द केल्या आहेत. तेव्हा इच्छुक निविदाधारकांनी दि. 23.03.2024 रोजी वेळ 18.30 वाजेपर्यंत निविदा भरावी.

स्वाक्षरीत
मुख्याधिकारी तथा प्रशासक
नगर परिषद परळी वैजनाथ

**इचलकरंजी महानगरपालिका, इचलकरंजी**
ता. हातकणंगले जि.कोल्हापूर

**जाहिर ई-निविदा सुचना क्र. ३/२०२३-२०२४**

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सही/-
उपायुक्त,
इचलकरंजी महानगरपालिका

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SANITATION WORKERS TRAINING AT ICHALKARANJI



**ON-GROUND IMPLEMENTATION OF REGULAR DESLUDGING BY TRAINED OPERATORS**

Moving towards regular and safe management of faecal waste.


**MahaSaniTrack** is a mobile application for tracking septic tank desludging operations. It assists ULBs to monitor safe disposal of faecal sludge from septic tanks to treatment plants, which is key to achieve the ICT goal under SBM 2.0, Swachh Survekshan and Safai Mitra Surakshit Sheher. Chief officers / sanitation engineers / supervisors are provided with web dashboards which show real-time information on city coverage, household readiness, safe disposal and use of personal protective equipment etc.

To enable effective implementation, training programs for sanitation workers and municipal staff have been conducted to familiarize them with app-based tracking and data management. These measures ensure not only the seamless operation of desludging services but also that all collected waste is treated at dedicated facilities, aligning with climate-resilient municipal service delivery goals.

By integrating proactive desludging into sanitation systems, communities are better equipped to manage the impacts of climate change while safeguarding public health and the environment.

# 04

# Efforts towards Inclusivity

# Improving agencies through livelihood opportunity for women in WASH

Gender inclusivity has been prioritized across the WASH service chain, with a focus on expanding access to sanitation. CWAS supported Urban Local Bodies (ULBs) in mobilizing toilet applications under the Swachh Bharat Mission (SBM), advancing national goals for equitable sanitation. Additionally, Self-Help Groups (SHGs) have been formally engaged in climate and WASH initiatives through dedicated tenders and contracts aligned with their capacities.


## Managing Menstrual Hygiene and Management (MHM) :

In Vita and Ichalkaranji, SHGs manage menstrual hygiene facilities in community and public toilets, including maintaining sanitary pad vending machines and incinerators, refilling pads, disposing of ash, and promoting safe MHM practices.

## Urban Forest Maintenance :

Women-led SHGs are responsible for the upkeep of urban forests at STP and SWM sites, using treated wastewater for irrigation. Registered under NULM, these SHGs receive training and support, with contracts renewed based on their successful performance.

## Formal Contracts For Urban Forest Maintenance :

Cities have adopted formal contracts with local Self-Help Groups (SHGs) and service providers for the maintenance of urban forests and green spaces. These contracts outline responsibilities such as regular watering, plantation care, waste removal, and upkeep of walking trails and public access points.

TENDER DOCUMENT

Name of Work

"SHG Contract For The Operation And Maintenance Of All Community And Public Toilets And Menstrual Hygiene Management (MHM) Infrastructure In Ichalkaranji."

Office of the

Ichalkaranji Municipal Corporation, Ichalkaranji

## Formal Contracts for managing MHM and Community toilets :

Cities like Ichalkaranji and Vita have formalized operations of community toilets and MHM facilities through structured contracts with women-led SHGs. These contracts define clear roles for upkeep of sanitation infrastructure, safe disposal of menstrual waste, regular refilling of sanitary pads, and community awareness. This decentralized approach ensures accountability and inclusivity in public sanitation.

These initiative focuses on strengthening service delivery agencies in WASH by creating livelihood opportunities for women, enabling their active role in managing community toilets, MHM facilities, and urban forests—fostering both local ownership and inclusive urban development.


6000 sqm of
urban forest
maintained by women-led
Self-Help Group (SHGs)

# Empowering Decision makers

To ensure the sustainability and scalability of gender inclusivity efforts, it was essential for decision-makers and implementers to understand and recognize its importance. To achieve this, a training workshop was organized for Heads of Departments, their subordinate staff, and sanitation workers. The workshop focused on raising awareness of gender dynamics, intersectionality, and the provisions of the PoSH Act, 2013.

The training included interactive sessions that encouraged participants to engage with real-life examples, group activities, and thought-provoking presentations.

**45**
Head of Departments (HoD)

**130**
staff trained

GENDER SENSITIZATION WORKSHOP FOR HEADS OF DEPARTMENTS (HoD)

# Ensuring the Safety of Sanitation Workers

Building on the principles of inclusivity and equity, the focus on sanitation worker safety has been a priority of CWAS's efforts to foster dignified working conditions. Recognizing the risks faced by these workers, CWAS partnered with ULBs to institutionalize safety practices, emphasizing the provision and proper use of personal protective equipment (PPE). By integrating safety provisions into labor contracts, developing model procurement tenders, and ensuring budget allocations for activity and gender-specific PPE, CWAS helped ULBs to establish a structured framework for the safety of worker.

Additionally, training workshops and health camps were organized to encourage consistent PPE use and promote awareness of workplace health. These measures reflect a comprehensive approach to safeguarding sanitation workers while supporting their rights and dignity.

**400+**
Sanitation workers trained

**Model Contracts Clauses**
shared with city officials



# PROMOTING SAFE PRACTICES THROUGH WORKER TRAINING

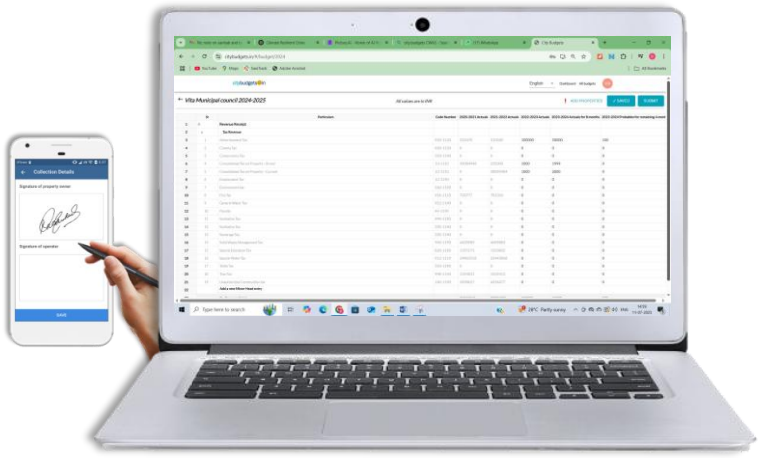
# Strengthening Municipal Finance

Achieving long-term sustainability for WASH-climate initiatives requires robust financial mechanisms to ensure adequate funding and efficient allocation. Recognizing this, CWAS collaborated with ULBs to strengthen municipal finance systems, enabling them to scale and sustain these critical interventions. As part of the effort, CWAS conducted evaluations of municipal budgets, offering tailored recommendations to optimize revenue generation and improve fund allocation. Tools such as budget briefs were utilized to present financial data in an accessible and actionable format, fostering informed decision-making by local governments.

To ensure funds were effectively utilized, allocations were made under key budget categories supporting essential activities, including:

- Scheduled desludging operations
- Operation and maintenance of Faecal Sludge Treatment Plants (FSTPs), Sewage Treatment Plants (STPs), and urban forests
- Installation and expansion of solar panels at STPs, FSTPs, and Water Treatment Plants (WTPs)
- Menstrual Hygiene Management (MHM) facilities
- Procurement of Personal Protective Equipment (PPE) for sanitation workers

This financial approach not only ensured the effective implementation of WASH-climate programs but also laid the groundwork for their long-term viability, aligning municipal efforts with broader sustainability and climate resilience goals.


# 05

# Scale Up with State Mission

# State-level Partnership for Climate-Resilient WASH

CWAS signed an MoU with “Maharashtra’s Environment and Climate Change Department” ***to support and advance WASH and climate efforts under the state’s Majhi Vasundhara program,*** including resource material development, capacity-building workshops, practice schedules, and fostering cross-learning among cities.

In 2023, on #WorldEnvironmentDay, CWAS signed an MoU with the Department of Environment and Climate Change, Government of Maharashtra.

# Scale Up Activities

To drive the transformation towards climate-resilient WASH systems, the partnership between CWAS and Maharashtra's Environment and Climate Change Department is focused on several key initiatives designed to scale up climate-responsive WASH practices across the state. These initiatives are aligned with the goals of the Swachh Bharat Mission (SBM) and the Majhi Vasundhara program, which aims to enhance environmental sustainability through five key components:

- Development of model contracts for PPP-based solar installations
- Formulation of guidelines for engaging women and promoting climate-responsive WASH development
- Provision of capacity-building support to cities
- Integration of WASH-climate linkages into the Majhi Vasundhara toolkit
- Preparation of advocacy materials highlighting WASH-climate linkages

# Awards and Recognition


1

**IWA Climate Smart Utlities (2024)**

- Ichalkaranji Municipal Corporation
- Vita Municipal Council

2

**Doing Good for Bharat Award (2024)**

- For WASH and Climate initiatives in Maharashtra cities

3

**CWAS recognised as Swachhata Doot (2024)**

- Vita Municipal Council acknowledged CWAS for its valuable contributions to the city’s development.

4

**IWA Climate Smart Utilities (2023)**

- Karad Municipal Council


IWA


India CSR
& ESG

# Partners

स्वच्छ भारत
एक कदम स्वच्छता की ओर

एकच लक्ष्य शहरे स्वच्छ
स्वच्छ महाराष्ट्र अभियान (नागरी) २.०

माझी वसुंधरा
#majhivasundhara

इचलकरंजी महानगरपालिका
ICHALKARANJI MUNICIPAL CORPORATION
•व्रतं मे जनहितपालनम्•
स्थापना 2022

विटा नगरपरिषद, विटा.
स्थापना : १८५४

कराड नगरपरिषद, कराड.
स्थापना : १५-९-१८५५

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## About us

The Center for Water and Sanitation (CWAS) at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.

***https://cwas.org.in***


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