CAPACITY NEED ASSESSMENT FOR CLIMATE-RESILIENT WASH SERVICES IN THE URBAN SLUMS

JAIPUR AND BHUBANESWAR

Centre for Advocacy and Research

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List of Abbreviations

AMRUT	Atal Mission for Rejuvenation and Urban Transformation
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
BMC	Bhubaneswar Municipal Corporation
CMC	Community Management Committee
CBO	Community Based Organisation
CSO	Civil Society Organisation
FGD	Focus Group Discussion
IHHL	Individual Household Latrine
IPCC	Intergovernmental Panel on Climate Change
JJM	Jal Jeevan Mission
JMC	Jaipur Municipal Corporation
JMP	Joint Monitoring Programme
MAS	Mahila Arogya Samiti
MHM	Menstrual Health Management
MSF	Multi-Stakeholder Forum
MUKTA	Mukhyamantri Karma Tatpara Abhiyan
NIDM	National Institute of Disaster Management
OBC	Other Backward Classes
OD	Open Defecation
PHED	Public Health and Engineering Department
PwDs	Persons with Disabilities
SBM	Swachh Bharat Mission
SCs	Scheduled Castes
SDA	Slum Development Association
SDC	Slum Development Committee
SDGs	Sustainable Development Goals
SHG	Self Help Group
SJED	Social Justice and Empowerment Department
SSC	Sanitation Sub-Committee
STs	Scheduled Tribes
SWF	Single Window Forum
WASH	Water, Sanitation and Hygiene
WATCO	Water Corporation of Odisha

Acknowledgement

Glossary

Adaptation: Climate change adaptation refers to actions that help reduce vulnerability to the current or expected impacts of climate change like weather extremes and natural disasters, sea-level rise, biodiversity loss, or food and water insecurity (UNDP Climate Dictionary, 2023; p.7).

Capacity: The combination of all the strengths, attributes, and resources available to an individual, community, society, or organization, which can be used to achieve established goals (IPCC, 2012; p.556).

Climate: Climate is the average of weather patterns in a specific area over a longer period of time, usually 30 or more years,that represents the overall state of the climate system (UNDP Climate Dictionary, 2023; p.85).

Climate Change: Climate change refers to the long-term changes in the Earth's climate that are warming the atmosphere, ocean and land. Climate change is affecting the balance of ecosystems that support life and biodiversity, and impacting health. It also causes more extreme weather events, such as more intense and/or frequent hurricanes, floods, heat waves, and droughts, and leads to sea level rise and coastal erosion as a result of ocean warming, melting of glaciers, ad loss of ice sheets (UNDP Climate Dictionary, 2023; p.37).

Flood: The overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas that are not normally submerged. Floods include river (fluvial) floods, flash floods, urban floods, pluvial floods, sewer floods, coastal floods, and glacial lake outburst floods (IPCC, 2012; p.559).

Hazard: The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources (IPCC, 2012; p.560).

Heatwave: A period of abnormally hot weather. Heat waves and warm spells have various and sometimes overlapping definitions. See also Warm spell (IPCC, 2012; p.560).

Impacts: Effects on natural and human systems. In this report, the term 'impacts' is used to refer to the effects on natural and human systems of physical events, of disasters, and of climate change (IPCC, 2012; p.561).

Resilience: Climate resilience is the capacity of a community or environment to anticipate and manage climate impacts, minimize their damage, and recover and transform as needed after the initial shock (UNDP Climate Dictionary, 2023; p.75).

Risk: The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems. In the context of climate change, risks can arise from potential impacts of climate change as

well as human responses to climate change. Relevant adverse consequences include those on lives, livelihoods, health and well-being, economic, social and cultural assets and investments, infrastructure, services (including ecosystem services), ecosystems and species (IPCC, https://apps.ipcc.ch/glossary/).

Safe Sanitation: Improved sanitation facilities are those designed to hygienically separate excreta from human contact. There are three main ways to meet the criteria for having a *safely managed sanitation* service (SDG 6.2). People should use improved sanitation facilities which are not shared with other households, and the excreta produced should either be: treated and disposed of in situ, stored temporarily and then emptied and treated off-site, or transported through a sewer with wastewater and then treated off-site. (JMP – WHO and UNICEF, Monitoring - Sanitation, https://washdata.org/monitoring/sanitation).

Safe Water: Drinking water from an improved water source that is located on premises, available when needed, and free from faecal and priority chemical contamination. (WHO, Drinking-water key facts, https://www.who.int/).

Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, https://apps.ipcc.ch/glossary/).

Weather: Weather refers to atmospheric conditions at a particular time in a particular location, including temperature, humidity, precipitation, cloudiness, wind, and visibility. Weather conditions do not happen in isolation, they have a ripple effect. The weather in one region will eventually affect the weather hundreds or thousands of kilometers away (UNDP Climate Dictionary, 2023; p.85).

Executive Summary

1. Background

People residing in slums face many challenges due to low income, low literacy levels, informal work, crowded living spaces, lack of basic amenities such as access to Water, Sanitation, and Hygiene (WASH) facilities, and access to electricity, road, etc. The situation is also compounded by the concentration of most marginalized communities in slum settings such as Scheduled Caste (SC) and Scheduled Tribes (ST). Further, the vulnerability of the settlement is exacerbated by climate change as it directly impacts their water and sanitation services. Hence local stakeholders and communities must be made aware of the threats posed by climate change in accessing WASH and the role of resilient WASH in abating the negative impacts of climate change. Strengthening capacities at the local level is critical as one of the key adaptation strategies for climate change, enabling them to tap into the third and fourth levels of governance and make use of state and central government programs and schemes for WASH.

In this context, a capacity need assessment was done in 18 slum settlements spanning five wards of Bhubaneswar city (wards 22, 30, 38, 44 and 49) and in 11 slum settlements spanning five wards of Jaipur city (wards 11, 17, 84, 123, and 147). Based on the assessment of the gaps in the capacity, strategies and training requirements are further suggested to build the capacities among local stakeholders aiming towards access to climate-resilient WASH services.

2. Comparative Analysis of Capacity Need Assessment from Bhubaneswar and Jaipur

Awareness on access to Safe WASH services

In Jaipur access to water within the premises is highly valued and equated with safe water. Most respondents in Jaipur do not have access to piped water, making the availability of water at their doorstep a significant factor in their understanding of safe water. The definition of safe water, especially with regard to water quality and availability as and when required, is not clear to most respondents. Respondents in Bhubaneswar generally have access to piped water supply within their premises. Access to water within the premises is not explicitly mentioned as a key criterion for safe water by respondents in Bhubaneswar, possibly due to the existing access to piped water. The emphasis is more on the quality of water. Both locations reflect aspects of SDG 6, but in different ways. While Bhubaneswar aligns more with the goal of ensuring water quality, Jaipur requires improved access. The understanding of safe water varies between Bhubaneswar and Jaipur due to different ways in which water is accessed. Addressing the gaps requires

tailored approaches such as focusing on water quality awareness in Bhubaneswar and improving access in Jaipur.

Bhubaneswar respondents exhibit a higher level of awareness and articulation regarding safe sanitation practices compared to Jaipur. This might be attributed to better access to sanitation facilities and community-driven initiatives in Bhubaneswar. In Jaipur respondents shared about varied sanitation facilities, including individual household latrines with sewer connection, single pit latrines, community toilets, and open defecation. They have only limited awareness on safe sanitation practices and are dissatisfied with the operation and maintenance of community toilets. They are also concerned about safety, especially for women and girls while using shared toilet facilities. In Bhubaneswar respondents have awareness on safe sanitation practices, including clean toilets, periodic desludging, and solid waste management. They also have - understanding on the importance of association of safe sanitation with twin pit toilets, waste segregation, and discharging domestic wastewater into drains. Respondents also evinced interest in recycling waste and safe disposal, and are keen to learn about sustainable practices.

Regarding hand hygiene practices, Jaipur respondents showed increased awareness due to COVID-19, but Bhubaneswar respondents are more articulate in expressing the components of hygiene across the sanitation value chain. Both cities face challenges in solid waste management, but Jaipur has taken steps to coordinate with local authorities for regularized waste collection. Bhubaneswar respondents expressed a broader interest in sustainable waste practices. Respondents in Jaipur shared about challenges in accessing MHM absorbents whereas concern raised by Bhubaneswar respondents were related to menstrual waste disposal.

Both cities can benefit from community-driven initiatives and educational programs to enhance awareness on safe sanitation, hygiene, and waste management.

Climate Change and Climate-Resilient WASH

In Jaipur, respondents showed practical awareness but have limited conceptual knowledge on climate change whereas in Bhubaneswar some respondents have comprehensive information on climate change and their awareness extends beyond immediate impacts to broader environmental and societal factors. In both the cities there is a need for conducting community workshops and awareness programs specifically focusing on climate change to bridge the information gap and provide information on the larger implications of climate change.

The respondents in both the cities were unaware of the concept of climate-resilient and the resilient practices in general. Though some respondents shared about the sessions held at the community level on wastewater usage, there is scope for expanding knowledge and skills on climate-resilient practices.   As the settlements are very

congested, rainwater harvesting, and water conservation techniques have not yet been tried by the communities in both the cities.

Similarly, there is potential to collaborate with local training institutions and environmental organizations to organize awareness campaigns and workshops on Climate Change in local language. This could be followed up with community-led initiatives for climate-resilient WASH practices, involving residents in decision-making processes and building partnerships with local authorities for infrastructure improvements, focusing on resilience to extreme weather events.

Community ownership, and role of CBO for climate-resilient WASH

Jaipur showcased instances of successful community engagement while Bhubaneswar saw the presence of various community organizations actively involving in WASH activities. Both cities report challenges in sustaining community engagement over time and issues related to gender disparities and limited inclusion of marginalized groups in community meetings and organizations. Jaipur emphasizes the need for tailored strategies for inclusivity, while Bhubaneswar acknowledges limited participation of PwD and transgender -. Bhubaneswar reports a responsive local governance system in some wards, while Jaipur showed scepticism about political agendas and a perceived lack of agency.

Targeted awareness campaigns are required on the importance of community engagement in both cities especially on the role of the fourth tier of local governance in the form of CBOs. There is also need for coordination with third level of local governance - Municipal Corporations- for strengthening resilient WASH services.

Awareness on social and gender inclusion

Both cities face challenges related to traditional gender roles and stereotypes, inadequate understanding of gender diversity, and lack of inclusivity in governance structures. Jaipur reports a limited binary understanding of gender, while Bhubaneswar acknowledges diverse genders but notes stigma and challenges for transgenders. Both cities report a poor representation of women in decision-making bodies such as SDAs. These cities also recognize the importance of inclusive measures, with Bhubaneswar reporting specific initiatives for the poorest, including PwD signage and waste collection. On the other hand, Jaipur acknowledges challenges faced by certain families engaged in outside work in accessing waste collection services.

Targeted capacity building measures including awareness campaigns and workshops on gender diversity, removing stereotypes, and promoting inclusivity are required in both cities. The capacity building should aim towards designing and implementing strategies to enhance the representation of women, transgender and marginalized groups in the decision-making bodies.

Access to information about government schemes and duty-bearers

Bhubaneswar exhibits generally high awareness about government programs, while Jaipur faces challenges due to lack of knowledge on schemes and WASH programs. Bhubaneswar residents are well-aware of various duty bearers, recognizing their roles in supporting WASH services, while Jaipur residents have limited knowledge on higher officials and departments overseeing programs. Both cities showed gaps in knowledge on climate change impact on WASH, with Bhubaneswar seeking government guidance on adaptation measures. Therefore, targeted awareness campaigns and workshops should be conducted in both cities to educate on WASH schemes, eligibility criteria, and operational structures. Steps to be taken to facilitate extensive engagement between community members, CBOs and duty bearers in both cities to bridge the knowledge gap and enhance awareness about higher officials and overseeing departments. Focus on providing more information about climate change and its impact on WASH to duty bearers.

	Current Capacity Gap – Challenges		Capacity Building Measures - Solutions	
	Bhubaneswar	**Jaipur**	**Bhubaneswar**	**Jaipur**
Strengthening understanding on Safe Water, Sanitation and Hygiene	Lack of awareness on water quality testing. Expressed interest in learning about water quality testing and parameters of safe water. Interest in recycling waste and safe disposal of sanitation waste across the sanitation value chain, with a need for learning about sustainable practices.	Lack of clarity on what constitutes safe water in terms of quality and availability. Limited awareness on safe sanitation, with dissatisfaction about the operation and maintenance of community toilets and concerns about safety, especially for women and girls, around shared toilet facilities	Raise awareness about the importance of water quality testing and provide information about water quality parameters. Strengthen community education programs on water safety. Community-driven initiatives and educational programs to enhance awareness on safe sanitation, hygiene, and waste management. Bhubaneswar could continue promoting sustainable practices and focus on specific issues like hand hygiene.	Implement measures to enhance access to clean water sources, potentially through the extension of piped water supply or alternative community water projects. Provide education on water safety. Community-driven initiatives and educational programs to enhance awareness on safe sanitation, hygiene, and waste management.

				Jaipur could focus more on improving access to safe sanitation facilities, especially for women, and addressing challenges in waste management.
Strengthening knowledge and practices on climate change and climate-resilience practices	Limited conceptual knowledge on climate change and climate-resilience practices	Same as in Bhubaneswar	Awareness campaigns and workshops on Climate change and Climate resilient WASH practices. Encourage community-led initiatives for climate-resilient WASH practices, involving residents in decision-making processes and building partnerships with local authorities in Bhubaneswar for infrastructure improvements, focusing on resilience to extreme weather events.	Same as in Bhubaneswar
Strengthening CBOs and community ownership	Challenges in sustaining community engagement and challenges related to gender disparities and limited inclusion of marginalized groups in community	Same as in Bhubaneswar	Organize training sessions and workshops for CBOs, trust building exercises and in engaging with local governance structures. Implement measures to address unresolved issues of SDC/CBOs	Same as in Bhubaneswar

| | meetings and organizations. | | to sustain enthusiasm for community meetings and develop strategies to involve community members in ongoing discussions and decision-making.

Training sessions on diversity and inclusion in decision making of CBOs. | |
| --- | --- | --- | --- | --- |
| Strengthening social and gender inclusion | Limited understanding of gender diversity, and the lack of inclusivity in governance structures. | Same as in Bhubaneswar | Campaigns and workshops on gender diversity and inclusivity. | Same as in Bhubaneswar |
| Strengthening understanding about government schemes and duty-bearers | Knowledge gap in duty bearers on climate change and providing climate-resilient WASH services.

Lack of understanding about higher level officials | Challenges with limited understanding of schemes, information about WASH programs and duty-bearers | A combined session with duty-bearers and communities can be done on climate -resilient WASH services and on how government programs can be strengthened.

Orientation and engagement between community members, CBOs and duty-bearers in Bhubaneswar slums to bridge the knowledge gap and enhance awareness about higher officials and overseeing departments. | Conduct targeted awareness campaigns and workshops in both cities to provide detailed information about WASH schemes, eligibility criteria, and operational structures.

Same as in Bhubaneswar |

3. Suggested approaches for Capacity Building

Inclusive participatory approaches need to be integrated across all the capacity building initiatives to ensure leaving no one behind, apart from targeted interventions to improve gender awareness within the multi-stakeholder forum (MSF) and local-level leadership structures. The following five approaches are suggested as guiding principles to shape the training contents under specific themes.

I. **Training to be tailored according to the local context:** It is important to impart training in the local language and training material and facilitation for capacity building to be done in the local language by facilitators who can link the local context with the broader themes. Given low level of literacy and poor economic conditions, people cannot afford to take leave from work, the tools and tactics of knowledge and capacity-building initiatives should be flexible and crafted around local situations. Emphasizing the success stories from specific wards on various components and cross–learning across wards can be cited as inspirational stories to foster a city-wide movement towards climate-resilient and sustainable WASH practices.

II. **Capacity building as a tool to strengthen MSF and other CBOs:** Capacity-building programs can be designed to empower diverse stakeholder members specifically MSF members to take on leadership roles, fostering a more inclusive and representative decision-making process. Sharing success stories from leaders from diverse genders, women can serve as role models and encourage greater inclusivity across all community-led initiatives. Additionally, sensitisation and capacity building of Frontline workers, - Slum Development Association, Sanitation Sub-Committee, Jal Sathis (water volunteers), Swachh Sathis (sanitation volunteers), Single Window Forum (SWF), and Community Management Committee (CMC) is essential. This will equip them with the skills needed to effectively manage and address local challenges. This approach aligns with the vision of an empowered MSF and leading the way towards strengthening the 3 and 4-tier governance models in Bhubaneswar and Jaipur.

III. **Making use of existing platforms and resources:** Launching extensive awareness campaigns is essential to educate residents on utilising toll-free numbers for reporting water, sanitation, and drainage-related issues. Promoting these helplines (1929 in Bhubaneswar and 181 in Jaipur) as accessible avenues for problem redressal will encourage communities and local stakeholders to actively engage in reporting and contribute to the overall improvement of WASH services. The training or interactive sessions on the government programs may be facilitated by the government functionaries, as this will also enhance communication and familiarity with local functionaries.

By building on the existing association with relevant departments and providing detailed information about government plans and schemes including grievance redressal mechanisms, authorities can enhance the participation of the local stakeholders in government-led initiatives. Engaging various communication channels, including social media, traditional media, and community events, to spread the message among the residents on available services, subsidies, and entitlements will help to create awareness and greater utilisation of these initiatives by the communities.

IV.   **Feedback-Driven Capacity Building:** The capacity building should deploy a mix of participatory techniques spread over a period of time and collect feedback from MSF participants to adapt and improve the training program. There is also a need to establish a monitoring and evaluation system to track the progress of MSF capacity-building initiatives and to check if the enhanced capacities are helping the MSF to address the challenges in accessing resilient and safe WASH services.

Chapter 1: Introduction

1.1 Overview

People residing in slums face many challenges due to low income, low literacy, engagement in informal work, crowded living spaces, lack of basic amenities such as access to Water, Sanitation, and Hygiene (WASH) services, electricity, healthcare, and approach roads to the settlement. The situation is also compounded by the concentration of most marginalized communities in slum settings such as Scheduled Caste (SC) and Scheduled Tribes (ST). Further, the vulnerability of the settlement is exacerbated by climate change as it directly impacts their water and sanitation services. Hence local stakeholders and communities must be aware of the threats posed by climate change in accessing WASH and the role of resilient WASH in abating the negative impacts of climate change.

Improved drinking water supply, safe and resilient sanitation infrastructure, hygiene facilities, and access to menstruation hygiene management (MHM) for women and girls play a critical role in addressing health issues and helping communities stay productive and economically strong. Climate-resilient sources of water should be the focus of efforts as it acts as a critical safeguard against climate change impacts. Providing safe water and sanitation facilities to the residents of congested slums during extreme rains is one such safeguard.

Solutions and technologies to adapt to climate change may differ from place to place depending upon the local conditions. For example, solutions for climate-resilient WASH in the rural agrarian community in flood-prone area would be different from communities living in congested slum settlements in a drought-prone urban or peri-urban area. However, in all situations, local stakeholders and institutions must develop capacities by acquiring skills and knowledge to understand and overcome the challenges in their respective contexts and be able to tap into local governance and government programs and schemes for climate-resilient WASH.

The adaptation of climate-resilient WASH initiatives in slums requires a multi-tiered governance approach and a collaborative effort between urban local bodies (3rd-tier of governance) and community-based organizations (4th-tier of governance) to address the specific challenges faced by these marginalized communities. The effective coordination of stakeholders from the third and the fourth tiers of governance ensures that communities actively participate in it and benefit from WASH initiatives. Hence, any policy and scheme formulation is contextually relevant, and infrastructure developed at the local level has the community ownership and higher stakeholder engagement.

Building the capacity of individuals engaged in multi-stakeholder forum (MSF)[2], as duty-bearers, health volunteers, local decision-makers, development committees, and WASH committees, contributes significantly to WASH decision-making. Involving these stakeholders is the first step in ensuring access to safe WASH services and building resilience and adaptation to climate change. The processes and strategies of capacity development will be inclusive of gender and diversity, owned collectively by the multi-stakeholders and the community. Strengthening capacities at the local level is critical as it enables them to tap into the third and fourth levels of governance and make use of state and central government programs and schemes for WASH.

In this context, a capacity need assessment was done in 18 slum settlements spanning five wards of Bhubaneswar city (wards 22, 30, 38, 44 and 49) and in 11 slum settlements spanning five wards of Jaipur city (wards 11, 17, 84, 123, and 147). Based on the assessment of the gaps in the capacity, strategies and training requirements, further suggestions are made to strengthen the eco- system for providing climate-resilient WASH services.

1.2 Area Description

1.2.1 Bhubaneswar

The study area in Bhubaneswar comprises 18 slum settlements from five wards in Bhubaneswar city namely 22, 30, 38, 43, and 49 consisting of 4553 households. The wards and settlements were selected based on the climate vulnerability and risk assessment baseline study conducted in the area.

The diverse population includes a sizable population of SC, ST, OBC, and a few households also belonging to general households. People are involved in various occupations including daily wage labourer, pottery business, street vendors, carpentry, auto driving, etc.

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[2] The multi-stakeholder forums in both Jaipur and Bhubaneswar are vibrant platforms that bring together a diverse array of organisations and professionals committed to collaborative development initiatives. In Jaipur, key stakeholders include the Public Health Engineering Department, Water and Sanitation Support Organisation, Greater Jaipur Municipal Corporation, Jaipur Heritage Municipal Corporation, Indian Meteorological Department, DRRCD and various NGOs such as UNICEF, UN Women, MAMTA, Action Aid, State Rainbow Society, DISHA foundation and Naibhor Sanstha. These organisations are represented by esteemed individuals holding designations ranging from Superintendent Engineer and Director to State Executive Officer, Founder, State Icons and President. Similarly, in Bhubaneswar, the multi-stakeholder forum comprises entities such as UNICEF, WaterAid India, Tata Trusts, SAKHA, Third Gender Welfare Trust, Government departments, and civic authorities like the Deputy Mayor of BMC. The forum members hold designations such as City Coordinator, State Head, Advisor, Founder, and professional expert collectively contributing their expertise to promote inclusive and sustainable development in their respective cities.

Table 1: Area Description, Bhubaneswar City

			Bhubaneswar
Ward No.	**Settlement name**	**Location & Area description**	**WASH Situation**
22	Shampur, Pandakudia, Cluster 6	Western part of the city. Behind SUM Hospital. Low-lying area.	Piped water and individual toilets are available in every household (100%). Active community participation in various organizations. Notable presence of the Trans community. No outlet for drainage which enters houses.
30	Telugu Basti, Birsha Munda-I, Birsha Munda-II	Eastern part of the city Near the drain	Access to water and individual toilets is available in every household (100%). Water access is from various sources including piped water supply, borewells, and community managed hand pumps. Despite 100% access, challenges are faced in certain areas in extreme weather. Issues with poor drainage systems are often leading to surface water entry into houses.
38	Munda Sahi, Masani Sahi, Balitota Sahi, Indira Maidan, Trinath Basti	Southern part of the city Plain area	Access to water connections and individual toilets available in every household (100%). Water scarcity is faced in certain areas and reliance on alternative water sources. Issues with drainage and solid waste management, are prone to cyclones and heatwaves.
43	Laxmisagar Tala Sahi, Laxmisagar Upara Sahi, Laxmisagar Majhi Sahi, Panabaraja Basti, Mahila Samiti Basti	Laxmisagar near Jharpada jail. Near the drain, a plain area with low-lying pockets.	Regular piped water supply and individual latrines are provided to residents. There remains a significant water crisis during the summer and adverse weather conditions.
49	Tapobana Lane Basti, Tap0bana School Basti	Southwest part of the city, low-lying areas.	Piped water supply and individual latrines were provided. There were issues related to faulty construction of soak pits. No drainage system. Narrow lanes inside the slums cause difficulties in desludging.

1.2.2 Jaipur

The study area in Jaipur comprises 11 settlements from five Wards in Jaipur city namely number 11, 17, 84, 123, and 147 consisting of a total population of approximately 5,200 individuals residing in 1,227 households. The Wards and settlements were selected based on the climate vulnerability and risk assessment baseline study conducted in the first half of 2023. In the baseline study, it was found that the majority of the slum settlements were facing difficulties in accessing basic services due to inadequate WASH infrastructure, including a lack of sewer line and pipeline connections for safe drinking water and had been widely impacted by climate-induced events. It should be noted that these five Wards, which were the focus of this capacity needs assessment for climate-resilient WASH services, are areas where we have not intervened earlier (between 2018 and 2022). These regions have been newly identified as areas of concern and are significantly impacted by climate change.

In Jaipur, the communities predominantly reside in kutcha and semi-pucca houses. The diverse population includes various communities engaged primarily in daily wage labour and consists of Lohar, Sansi, Banjara, Dholi, Rewabri, Muslims, Khatik, Bairwa, Rajput, and Brahmin, with the majority population comprising SCs and STs with a high influx of migration in these slums from rural areas. Residents are engaged in various occupations, including daily wage labourer, working with private set-ups, employed in contractual arrangements such as shops, factories etc, domestic workers, rickshaw pullers, street vendors, driving, tailoring, and sanitation work, etc.

Table 2: Area Description, Jaipur City

Jaipur			
Ward No	**Settlement name**	**Location & Area description**	**WASH Situation**
11	Indra Colony; Bhomiya Basti	Situated on a hilly train near Jal Mahal on Amber Road.	Access to water points from piped water supply through Bisalpur pipelines; access to borewell, due to hilly terrain issued of water scarcity in summer season due to less pressure in the pipeline, some coverage of IHHL connected to sewer lines.
17	Tata Nagar	Ram Dev Mandir, Tata Nagar Settlement mostly in plain area, some area at the rear end of the hill, besides a big drain running in the middle of the settlement	The households have single-pit toilets and are connected to sewer lines. Most of the settlement has access to piped water supply.

84	Purana Ghat; Ghat Ke Balaji	Purana Ghat-at the base of the Aravali hills, with half of its residents residing on the plains and the other half on the steep slopes of the hills; Ghat Ke Balaji- located in a flat area, away from the city centre.	There was no access to even basic water facilities. People who can afford to dig the borewell at the household, and others rely on water tankers and two community tanks which are connected to the borewells. Whichever part of the community lives in the slum, they need to come to this point and fetch water. Single pit latrines with no access to sewer.
123	Baisi ki Dhani and Banjara Basti	Situated near Agra highway, a plain area near forests.	A significant portion of the settlement lacks individual toilets. Even among those with toilets, they are primarily reserved for emergency situations. The community relies on tubewell water for drinking purposes, water through tankers provided by PHED litre water tank is available, which gets filled twice a day by PHED. The settlements are frequented by flash floods.
147	Katputli Nagar A, B, C, Bhojpura, Ambedkar Circle, Shaheed Valmiki Basti	Bhairaw Ji ka Mandir, Bhojpura Settlements are situated on the plain area near Vidhan Sabha Nagan Nigam Greater and High Court.	In Bhojpura, Shaheed Valmiki, and Ambedkar Circle, some households have access to piped water supply and are connected to IHHLs, however in Katputli Nagar A, B, and C very few have access to IHHLs and the rest of the people either use CTCs or rely on open defecation.

Chapter 2: Approach

2.1 Methodology

A three-stage sampling approach consisting of cluster, purposive, and random sampling was applied.

a. **Cluster Sampling:** As part of the baseline survey, a desk-based study was conducted on Bhubaneswar and Jaipur using Census of India (2011) data across all Wards. Initially, 19 Wards (of 67 Wards) in Bhubaneswar and 24 Wards (of 77 Wards) in Jaipur were selected based on the SeVI (Socioeconomic Vulnerability Index) scoring and WASH-SeVI scoring, utilising data and indicators from the Census of India. Subsequently, a climate risk and vulnerability assessment were carried out, considering city-specific hazards, exposure, and vulnerability using the GWP-UNICEF (2017)[3] framework. This aimed to understand the impacts of climate change on existing WASH services, including erratic rainfall, flooding, heatwaves, cyclones, and long dry spells.

   The baseline study helped to identify the five most vulnerable wards each from Jaipur and Bhubaneswar, consisting of informal settlements spread across the city. Based on this study, we selected five extreme settlements/Wards from each city grappling with climate-induced impacts on WASH and demonstrating limited knowledge among frontline stakeholders and duty-bearers. The final list of vulnerable slums/Wards was divided into clusters, encompassing priority and non-priority slums/Wards, with a focus on priority clusters consisting of the five most vulnerable Wards each from Bhubaneswar and Jaipur.

   The baseline study revealed that, while many slum settlements have WASH infrastructures and services, both newly sanctioned and older ones have been significantly impacted by climate-induced events in recent years. It's important to note that the selected respondents for this capacity need assessment study are from these vulnerable wards, leading to biased findings based on sampling techniques, representing the situations in vulnerable wards only and not the entire city. Due to the nature of biased sampling, there is demonstrated uneven knowledge and limited engagement of duty bearers, including frontline stakeholders and community influencers.

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[3] GWP & UNICEF. (2017). *WASH Climate Resilient Development: Guidance Note - Risk assessments for WASH*, Global Water Partnership and UNICEF. https://www.gwp.org/globalassets/global/toolbox/publications/technical-briefs/gwp_unicef_guidance-note-risk-assessments-for-wash.pdf

b. **Purposive Sampling:** Purposive sampling was adopted to choose individuals actively engaged in Multistakeholder Forum (MSF), playing pivotal roles in WASH-related decision-making processes, and representing diverse societal and administrative segments that are responsible for decision making. This aligned with the focus on capacity development. This group included duty-bearers, frontline workers, community organisers, and local influencers.

The local decision-makers include the Ward Councillor, Ward Officers, Community Organiser, Slum Development Association (SDA) (Slum Development Committee (SDC) in the case of Jaipur), and the Ward Sanitation Inspector responsible for waste collection. Government-recognized health volunteers, including Accredited Social Health Activist (ASHA), Anganwadi Worker (AWW), and Mahila Arogya Samiti (MAS), were also considered. Government-recognized WASH volunteers in Bhubaneswar, including Jal Sathis (water volunteer), and Swachh Sathis (sanitation volunteer) were also considered for capacity development.

Community-led committees, such as Water Committees, WASH Sub-Committees, Pad Bank Committees, and Sanitary Worker Groups, were included in the capacity development. Additionally, individuals from marginalised groups representing Persons with Disabilities (PwDs), elderly individuals, single women, transgender community members, and local club/civil protection team members were encouraged and considered.

All individuals mentioned from these committees, and as part of the MSF, were considered due to their significant influence on the local decision-making body and their role in managing WASH services.

c. **Random Sampling:** Finally, random sampling was employed to select individuals from the target groups, encompassing domains of local decision-makers, government-recognised health volunteers, community-led committees, and active individuals from marginalised sections for capacity development in the selected priority Wards.

A qualitative semi-structured questionnaire was developed to facilitate open-ended interviews (Annexure 1). These interviews aimed to gain qualitative insights into local stakeholders' and community experiences, challenges, and recommendations across all four parameters of the capacity gap framework.

2.2 Framework for Capability Need Assessment on the Climate-Resilient Safe WASH Services

The study was conducted to assess capacity needs, aligning with indicators and intermediate outcomes to achieve the EOPOs (End Outcome Performance Objectives). These include increased capacity of entities for planning sustainable WASH services and greater integration of climate-resilient, gender-inclusive approaches, measured in connection with improved access to such services in households, communities, and institutions under EOPOs 1, 2, and 3.[4]

The framework for assessing capacity gaps and meeting intermediate outcomes and indicators has been designed based on four parameters.

- First and foremost is ascertaining the knowledge and awareness of inclusive and climate-resilient safe WASH services of individuals representing the diverse group of local stakeholders. They include individuals who are local decision-makers, government-recognised health volunteers, community-led committees, and individuals from marginalised sections. Apart from assessing the perception and understanding of the MSF on safe WASH, assessment is done whether they were aware of climate change, and how it meditates through water and impacts access to WASH services. The interlinkages as understood by the MSF between access to safe WASH, health, livelihoods, overall well-being and desire to mobilize their resources and environment can help to overcome the challenges.

- Secondly, and equally important is their understanding of the rationale of leaving no one behind in the local community, inclusiveness especially for people in vulnerable situations, understanding of gender, sexual diversity, and gender-inclusive capabilities and strategies to overcome challenges.

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[4] The study was conducted to align with the capacity needs assessment, ensuring the fulfilment of indicators and intermediate outcomes that further helped achieve the End Outcome Performance Objectives (EOPOs). These intermediate outcomes encompass: (a) Enhanced capacity and empowerment of governments, private sector, community-based organizations, and communities in planning, investing, and delivering sustainable, inclusive, and climate-resilient WASH services, spanning indicators from 1.1 to 1.3 on the SWA Building Blocks under EOPO 1; and (b) Increased incorporation of climate-resilient, gender-sensitive, and socially inclusive approaches by governments, private sector, community-based organizations, and communities, covering indicators from 1.1 to 1.3 and 3.1 to 3.4 on climate-resilient WASH services and participation of marginalized groups under EOPO 1 and 3. While connecting it to measure both EOPO 1 and 3, it has also linked to the indicators under EOPO 2, focusing on enhanced access and utilization of climate-resilient WASH services and facilities in households, communities, and institutions.

☐ Thirdly, it is important that the MSF create and make use of opportunities by mobilizing their network and the community, access to duty-bearers and information on various government programs, schemes, and policies to access WASH services.

☐ Lastly, the key to resilience is community ownership and community-led action supported by multi-stakeholders across government and non-government bodies covering 3rd and 4th tiers of governance, planning and leadership, and management of community assets for resilient WASH.

Table 3: Framework for Capacity Needs Assessment

	Parameters of capacity need assessment	Various dimensions of the parameter (Knowledge and practices)
1	Awareness of Safe WASH and Climate Resilience	☐ Availability, access, and quality of water ☐ Understanding of different designs of sanitation facilities ☐ Waste management ☐ Access to hygiene and MHM ☐ Awareness about climate change and its impact ☐ Climate resilient practices and knowledge
2	Awareness of social and gender inclusion	☐ Recognizing the diversity of gender, caste, and class ☐ gender and inclusion in local committees and decision making
3	Access to information about government schemes and duty-bearers in Municipal Corporations	☐ SBM, JJM, AMRUT, Odisha Mission for Liveable Habitats ☐ Jal Sathis, Swachh Sathis, government departments
4	Community ownership, Community-based Organizations (CBOs) and preparedness	☐ Decentralization at the local level ☐ Community participation and leadership ☐ Coordination between 3rd and 4th tier of governance

Chapter 3: Finding - Current Capacity Gaps

3.1 Awareness on Safe WASH and Climate Resilience

The survey aimed to explore current water, sanitation, and hygiene practices and the current understanding of safe WASH and climate-resilient WASH services. Apart from that survey also gauged the understanding of climate change, its impacts, and current practices on WASH services. The detailed findings on Bhubaneswar and Jaipur are as follows:

3.1.1 Bhubaneswar

Concept of Safe Water

Most of the respondents from the MSF across Wards reported access to piped water supply. Respondents in all the Wards emphasized the quality of water in defining safe water. In Wards 43 and 49, safe water practices used by communities included boiling water, water filtering, and using household water filters for drinking water. In Wards 30 and 22, respondents also indicated that safe water needs to look clean and be stored in clean containers. None of the respondents mentioned access to water within their premises as one of the key criteria for safe water, as most of the respondents already have access to piped water, though some respondents mentioned about inadequate supply. Some of the respondents also evinced interest in knowing and learning about water quality testing, parameters of safe water, the location of the water quality testing lab and whom to approach for water testing, etc.

> "Safe sanitation practices for us mean having clean toilets, having septic tanks, periodic mechanized cleaning done by cesspool vehicles, and educated volunteers using QR codes to book the service for households. While managing solid waste, 80% households store waste in two dustbins and hand it over to the waste collection vehicles."
>
> **-Ms. Lili Samal, SDA Member, Laxmisagar Tala, Ward 43.**

Awareness on Safe Sanitation and Hygiene

Most of the respondents across all five Wards associated using clean toilets, periodic desludging, and solid waste management with safe sanitation. Respondents in Ward 30 informed that more than half of the household's approach either private agencies or government cesspool vehicle operators for desludging services. Some of the respondents also associated safe sanitation with twin pit toilets, clean surroundings, waste segregation

and discharging domestic wastewater into drains. Some of the respondents showed interest in recycling waste and safe disposal of waste, specifically MHM waste.

Most of the respondents from the MSF felt the need for learning about sustainable practices, indicating a potential for community-driven initiatives and learning opportunities. It was observed across all five wards that people were widely aware of handwashing and also know the importance of celebrating handwashing day.

Climate Change Awareness and Perception

Most of the respondents associated climate change with unusual and extreme seasonal patterns such as heavy rainfalls or extreme heat. Some of the respondents from Ward 30 linked climate change to population growth. Respondents from Ward 38 demonstrated a comprehensive understanding of climate change, identifying various impacts such as urban flooding, extreme weather events, and environmental degradation. A few respondents from Ward 49 also linked climate change to tree cutting, increased vehicle use, growing construction, cyclones, and natural calamities.

> "There is a low-lying area, and during heavy rainfall and deep (atmospheric) depression, wastewater overflows and enters the low-lying houses. The toilet and septic tank - are filled with surface water as it enters through toilet pans, and again sludge water reverses back through the toilet pan, flows inside our houses."
>
> **-Mr. Nilamani Swain, SDA, Ward 38**

Climate Resilience Capacity and Preparedness

Most of the respondents shared their knowledge about basic preparedness such as securing roofs and stockpiling essentials during extreme weather. Most of the respondents also felt the need for knowledge on building climate-resilient settlements, more information on precautions during extreme weather, and community-level steps to minimize climate change impact through the intervention of the MSF. Some of the respondents from Wards 49 and 43 also shared specific measures adopted by them such as tying bamboo under and on the roof, laying heavy stones on the roof, painting walls white for cooling and raising the height of the platform from the ground for tubewells in low lying areas. Respondents from Ward 38 shared preparedness measures such as cleaning the drainage to avoid water logging and cleaning the water tank, chamber and pipeline.

In places where the concentration of tribal (aboriginal) populations is high, they have taken traditional measures on their own to build elevated mud barracks to prevent overflowing stormwater from entering their households during heavy rains, especially in tribal pockets such as Birsha Munda Basti in Ward 30, and Tapobana Lane Basti in Ward 49.

Perception of Climate Change and WASH Relationship

Respondents in all five wards acknowledged the close relationship between climate change, water, sanitation, and hygiene. They also shared specific concerns related to water access during extreme weather. Respondents in Ward 30 highlighted issues like drainage problems, toilet septic tank concerns, and disruptions during the Fani cyclone. Respondents in Ward 38 detailed issues like stormwater overflow from drains which disrupted water supply and hygiene practices during extreme weather. In Ward 43, respondents highlighted the issue of water contamination due to septic pits' proximity to tubewells, while Ward 49 residents spoke on general concerns about water shortage, dirty water during extreme weather, and wastewater inflows inside the houses due to low-lying location of the settlement. Transgender respondents shared their knowledge about how safe water and sanitation practices were preventing disease, especially when extreme weather disrupts WASH services and practicing personal hygiene becomes even more difficult.

Water conservation as a challenge in slum settings and a key tool to adaptation

Most of the respondents recognize the importance of water conservation, especially in the absence of piped water supply. However, across all the wards, respondents spoke on challenges in water conservation due to shortage of land space and proper storage container. Respondents in Ward 49 also shared community initiatives in the periodic cleaning of water ponds by the community members with the help of the SDA and Sanitation Sub-Committee (SSC) members. Respondents from Ward 38 shared that under MUKTA (Mukhya Mantri Karma Tatpara Abhiyan), rainwater discharge points were allocated and the rainwater harvesting initiative is led by Self Help Group (SHG). Most of the respondents also keen to learn how rainwater can be stored, preserved for long periods, and reused for domestic purposes.

> "There is a linkage between water, sanitation, and health. For transgenders, more water is needed to maintain their health and hygiene. In the absence of safe water and sanitation practices, there could contract infection."
>
> **-Survey Respondent, Ward 22**

Awareness of climate-resilient WASH and adaptation of new WASH services

The survey indicated a positive trend in individual awareness regarding climate-resilient WASH practices in urban slums. Respondents, particularly from Ward 49, 43, and 22, showed growing awareness about new WASH services. The respondents reported cleaning of septic pits by cesspool vehicles, bio-degradable and non-biodegradable waste segregation in two dustbins, water collection from the pipeline, water conservation efforts, and drain cleaning. Changes noted by respondents include minimized open defecation, and reduced skin infections due to safely managed waste segregation at the household level. However, the practice is not universal, and respondents attributed this

to the nature of behaviour change. Respondents expressed the desire for technical training on activities such as septic pit construction and waste reuse.

3.1.2 Jaipur

Varied Water Facilities and Concept of Safe Water

All the respondents from the MSF equated access to water within their premises as safe water and consistently expressed a strong desire for improved water access. Most of the respondents considered access to piped water as safe water reflecting the importance placed on the convenience and reliability of getting water at the doorstep.

While the aspiration for accessibility at premises was evident, the definition of safe water was not clear to most of the respondents across all five Wards, especially on the quality of drinking water and availability as and when required as per the definition of 'safe water' given by UNICEF.

According to UNICEF, safe water should be attainable, affordable, and free from contamination. This means *"it must come from a reliable source like a well, a tap or a hand-pump; free from faecal and chemical contamination; readily available for at least 12 hours a day; and located on the premises of a household or within reasonable reach."*[5]

> "There are few houses built on the hill, and there are no toilets because there is no space to construct individual toilets."
>
> **-Rajni Devi, Ward 11, Jaipur**

The impact of climate change on water quality is significant, particularly where water is scarce or in regions that are prone to natural disasters. A baseline survey revealed that 29.6% of households in Ward 11 rely on government water tanks, and 64% of households in Ward 123 rely on borewells. During extreme climate events it was difficult to access water and sanitation services in these wards. The lack of alternative water sources forces community members to travel long distances to fetch water, particularly in Wards 17, 84, and 123.

Varied Sanitation facilities and limited awareness on safe sanitation

Few settlements in Wards 11, 17, and 147 have the facility of individual household latrines with sewer connections, while the majority relied on single pit latrines, and community toilets or resorted to open defecation, highlighting disparities in sanitation facilities.

Most of the respondents exhibited a lack of awareness on the concept of safe sanitation. There is a lack of information and knowledge on sanitation value chain and safe waste

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[5] UNICEF. Water Ensuring an adequate and safe water supply for the survival and growth of children. https://www.unicef.org/wash/water#:~:text=Explore%20topics%20in%20water&text=This%20means%20it%20must%20come,household%20or%20within%20reasonable%20reach

handling. Most of the respondents, where community toilets are there in Ward 147 (Katput-li Nagar A, B, and C), shared dissatisfaction with its operation and maintenance and equated safe sanitation with hygienic shared facilities. Women and girls also shared concerns regarding safety issues, especially during the night. Compared to community and shared toilet facilities, a majority of the respondents indicated a preference for independent household latrines as safe facilities.

> "In the settlements, there are many houses that do not have toilets and rely on CTCs. The situation for girls and women is very pathetic. The women have to go to the CTCs in the night and many times they face physical and verbal abuse. PwD and elderly could not use the CTCs, because the seats are not user friendly."
>
> **-Khatun Begum, Ward 147, Jaipur**

Increased awareness on hand hygiene and MHM

Individuals from the MSF have a basic understanding of water conservation and hygiene practices, which include washing hands before and after cooking, feeding children and meals, as well as after using toilets. Most of the respondents informed that the enhanced knowledge and behaviour change on handwashing were mainly due to the COVID-19 pandemic. However, hygiene practices face challenges during extreme weather conditions.

In some of the settlements, respondents informed that adolescent girls are now being aware on safe and hygienic menstrual management, however, they have limited access to the MHM absorbents from the ICDS centres, and the key challenge is the safe disposal of the menstrual waste.   Whereas in a few settlements, respondents linked less awareness on MHM to access issues such as access to proper water supply and IHHL.

Clogging of drains and waste dumps

Across all five wards surveyed, respondents were informed about the issue of solid waste management. The waste is filled in the drains in Wards 11 and 147 (Bhojpura) and also nearby hilly areas in Ward 17 and within the settlements of Ward 147 (Katputli Nagar A, B, and C) causing outbreak of diseases like malaria and dengue, and also at times blocks the drains and causes overflow of wastewater. It was also observed that often the overflowed wastewater enters households in low-lying locations.

> "Awareness generation should be done in the settlement to educate people on not disposing the (solid) waste into the drains or at the foothill. We need to start segregating and reducing the solid waste so that we can dispose of as less as possible, this would help us in not clogging the drains and contaminating the (drinking) water lines."
>
> **-Rajat Saini, Ward 17, Jaipur**

Regarding the collection of solid waste from households, SDC and community mobilisers in Wards 17, 123, and 147 are now coordinating with the Ward level JMC staff, to regularise the collection as well as cleaning of the drains, at a fixed time slot when the community are present in their households.

The absence of a proper drainage system leads to waterlogging during monsoons in Wards 84 and 123 (Baisi ki Dhani), causing health risks and disruptions to daily life. Flooding overloads stormwater and wastewater systems, potentially affecting drinking water distribution. In Ward 17, similar challenges regarding uncovered debris and solid waste-filled drains were observed, leading to safety hazards, particularly during the monsoon season. These drainage issues have not been addressed for decades, causing accidents, and negatively affecting the overall quality of life in the Ward.

Climate Change and Impact of extreme weather on WASH and Livelihoods

In all the settlements respondents shared experiencing extreme weather changes. However, they were not very much aware of climate change but practically they understand the impact of climate change on access to WASH and livelihoods. Across all five Wards, stakeholders and the community focus on livelihood opportunities to improve the economic well-being and overall quality of life, especially during climate hazards like extreme heatwaves, floods or longer duration of waterlogging, and thunderstorms that disrupt livelihoods.

> "When rainwater seeps into the ground, it returns and collects in the ponds and wells. However, the management of the wells in our neighbourhood is not proper. If we install filters in it, we can use the water more effectively."
>
> **-Savita, an elderly woman from Ward 11, Jaipur**

Most of the respondents shared the issue of waterlogging due to heavy rain or flash floods during the rainy season. They mentioned that during waterlogging, they have no work to do for their living, and it becomes difficult for them to arrange for the basic needs of the family. Eventually, their ability to earn a living is greatly affected. Some respondents also shared concerns about sudden rains at unexpected times impacting health and livelihoods. Concerns were also raised about the possible damage to drinking water pipelines during extreme summers and the monsoon season, leading to potential contamination of water and disease outbreak.

Climate resilience practices

The respondents across all five Wards were unaware of climate- resilient practices in general and about the concept of climate-resilience. Though MSF shared about the sessions held at the community level on avoiding wasting water and reusing wastewater, there is ample scope to expand knowledge and skills on climate-resilience practices.

As the settlements are very congested, rainwater harvesting and water conservation techniques have not yet been promoted by the MSF, however, at the individual level in Ward 123 (Baisi ki Dhani), there have been efforts to collect rainwater in buckets and containers and use them for washing clothes, cleaning their houses. Some of the elderly respondents also shared traditional knowledge about water conservation techniques. In Ward 11, residents practice water storing for household use, particularly during extreme heat waves and waterlogging events, demonstrating their proactive approach to climate-related challenges.

Clarity on interlinkages

Most of the respondents from local stakeholders had not thought about the links between climate change, WASH, gender, and health and expressed interest in understanding more. However, they knew the direct link between WASH and Health. Whenever contaminated water is supplied through a drinking water pipeline in Wards 17 and 147, they get infected and suffer from diarrhoea, severe stomach pain, and vomiting. So, in these cases they get their water tested.

In Ward 147 (Katputli Nagar), a prolonged water scarcity issue persists due to capacity gaps in understanding the link between climate-WASH and the inability to influence service providers. People lack knowledge on how to manage WASH services during both regular time and extreme climate conditions. Approximately 40 households have endured six months without water supply, resorting to burdensome methods such as collecting water one kilometre away and using private tankers.

3.2 Community ownership, role of stakeholders and community-based organizations (CBOs) for climate resilient WASH

Participatory planning is an important element to enhance the legitimacy of WASH-related decision-making processes in which individuals actively engaged in the community, plays an important role. Representing diverse societal and administrative segments, including duty bearers, frontline workers, community mobilizers, local decision-makers, government-recognized health volunteers, and community-led WASH committees, and local club/civil protection team members, they were able to provide improved WASH services by managing climate-resilient safe WASH services.

Contributing to the maintenance of WASH infrastructure and investing in respective skill sets for community assets such as drinking water pipelines, water quality, drains for grey water, community tanks for water storage, community toilets, etc, instils pride and ownership. Active engagement of the SDA and SSC in Bhubaneswar and SDC in Jaipur with a focus on community ownership and inclusion paves the way for climate-resilient preparedness and long-term sustainability. The effectiveness of local governance structures especially the fourth tier of local governance in the form of SDAs/SDCs, SSCs,

and Community Management Committees (CMCs) and its smooth coordination with the third level of local governance as Municipal Corporations play a crucial role. The survey assessed the community ownership and preparedness to access resilient safe WASH services through the intervention of the MSF. The findings on Bhubaneswar and Jaipur are as follows:

3.2.1 Bhubaneswar

CBOs, Committees, and Local Governance

Across all 18 surveyed settlements, the presence of entities like the SDA, SSC, MAS, SHG members, and CMCs is highlighted, indicating the existence of community organizations involved in WASH-related planning and decision-making activities. Local representatives across settlements and the Ward such as community organizers, Ward officers, and Zonal community organizers were mentioned suggesting their involvement in the local governance in managing WASH services. Respondents were aware that Jal Sathi is being appointed by the Water Corporation of Odisha (WATCO) to read and collect bills, and the regular collection of segregated dry and wet waste, supervised by Bhubaneswar Municipal Corporation (BMC).

Coordination Mechanisms of MSF at the community level

Respondents made references to coordinating mechanisms in place for ensuring uninterrupted WASH services. In Ward 49 respondents from local decision makers informed that community members exhibit resilience by utilizing bore wells during water supply interruptions and coordinating with the government for water tanker support. Respondents from all five Wards shared some level of coordination mechanisms within the forum and the community for coordinating with the municipalities for water tanker support and the use of QR codes for desludging services. The MSF and community-led initiatives such as pad banks and handwashing clubs were also reported as community level initiatives contributing to promoting safe menstrual hygiene and hand hygiene practices.

Level of stakeholders' engagement and community ownership

In all five surveyed Wards of 22, 30, 38, 44 and 49, a noticeable level of awareness and engagement among stakeholders was reported. However, the level of active engagement across MSF varied. Respondents from different stakeholders also reported that male participation tends to be higher than female participation.

> "Women and girls are facing problems in disposing of sanitary pads. The waste collection vehicles don't have a separate dustbin to dispose used sanitary pads."
> **-Majhi Sahi, Ward no. 43**

The participation of PwDs and transgender is also reported to be limited in the stakeholder meetings. Respondents across Wards demonstrated awareness of the inclusive participation of duty-bearers in decision-making bodies. Respondents in Ward 38 also reported limited leadership positions within the MSF from women, PwDs and people from marginalised groups.

Respondents from all of the five surveyed Wards reported that stakeholders' meetings in these wards actively discuss the development and maintenance of WASH infrastructure and services in the presence of the fourth tier of governance, i.e., SDA, SSC, Jal Sathi, Swachha Sathis and the community. Discussions and involvements include drain construction, maintenance and cleaning, sewer line repairs, water pipeline maintenance, individual household toilet (IHHT) construction, regular waste collection, expanding electricity connection to the interior settlements, and social support initiatives such as listing and enrolling for pension for PwDs, elderly, widows and single women. Most importantly, the high engagement of local decision makers in managing WASH services through their own initiatives shows a high level of stakeholders' involvement and community ownership.

Local governance and mobilization of resources

Respondents in Ward 49 reported a responsive local governance system that actively involves local decision makers and community-based committees in decision-making processes. This has resulted in better coordination during emergencies and efficient allocation of resources, fostering a sense of ownership among community mobilisers. Respondents in Ward 43 reported a well-organized local governance structure but faced challenges in mobilising resources. On the other hand, Ward 22 reported challenges related to governance fragmentation affecting the resource mobilisation efforts of stakeholders.

> "Every week, households and youth members coordinate with the local corporator to get the drains cleaned and with the support of the   municipal staff and their vehicle to collect the waste."
>
> **-Mr. Gurucharan Bhoi, SDA Treasurer, Majhi Sahi, Ward 43, Bhubaneswar**

3.2.2 Jaipur

Varied Participation of the Stakeholders

The settlements in the surveyed Wards showed varying levels of community ownership and participation from MSF. Most of the respondents from MSF reported negligible engagement and participation in the local level decision-making meetings to discuss WASH issues and planning for better services. Few settlements shared instances of high engagement of stakeholders. For instance, the community ownership was instrumental

in Tata Nagar, Ward 17 in getting the piped water supply and sewer connection. The respondents informed that settlement in Ward 17 has a good set-up of the SDCs and most of the people approach them for issues related to WASH services. Similarly, settlements like Bhojpura in Ward 147 have active SDCs and there is active involvement of Ward Councillors and Sanitation Inspectors in these areas. They have been working on restoring the defunct borewells and urging the PHED (Public Health Engineering Department) to repair the defunct water pipelines. On the other hand, respondents in settlements, Katputli Nagar A, B, and C of Ward 147, reported less engagement of stakeholders and very limited community ownership.

Active committees and success models

Some of the SDCs in the surveyed settlements reported their active engagement with the government functionaries to establish piped water supply and sewer connections indicating a link in local governance. Here, through stakeholder engagement, SDCs worked with departments and Ward Councillor to address slum-specific challenges.

In Ward 123, also known as Baisi ki Dhani, active MSF and a strong sense of community engagement is evident through the collective efforts of stakeholders to maintain water tanks and bore wells. Through stakeholders' engagement, residents have implemented a successful monthly contribution system to manage the water supply, showcasing their ability to pool resources for the common benefit. Similarly, in Ward 17 and 147, through stakeholders' involvement in the local planning, residents too demonstrated a community spirit by ensuring regular waste collection from households.

Initial enthusiasm and sustained engagement

Respondents from Ward 11 informed that initial enthusiasm for MSF meetings waned due to unresolved issues, resulting in decreased participation from the CBOs. Conversely, in Ward 17, 123, and 147, there has been an increase in participation and engagement of CBOs and local stakeholders, driven by a higher resolution rate of the problems faced by the community members and dealt with by the local decision-making bodies including SDC, SSC, and SHGs.

Political perception

In Wards 11 and 147, respondents shared scepticism about political agendas and expressed disappointment about lack of a strong agency to access services. Consequently, there was lack of active engagement of SDCs, Sanitation Inspectors, and Water and WASH Committee members, which suggest the need for trust-building exercises among the frontline stakeholders as part of capacity building.

3.3 Awareness on social and gender inclusion

Climate change disproportionately impacts women and girls due to poor WASH services. It disrupts their access to basic water needs and, as primary care providers, puts them under immense pressure to find water from distant sources, adding extra burdens to their already demanding roles. It also impacts personal hygiene and menstruation and enhances their risk of experiencing harassment and violence.

> "The large drain in the middle of the settlement had not been cleaned for the last forty years; I initiated the process and regularly followed it up with the department. After visiting the department many times, I lost hope of cleaning the drain. However, with the support of SDC, CMC, ASHA, and SHGs, we approached the department again, and the drain has now been partially cleaned. Now, the bigger challenge is to sustain the cleanliness of the drain."
>
> **Munni, WASH Committee, Ward 17, Jaipur.**

The engagement of women and representatives from the vulnerable populations in the local decision-making body for slum and WASH development is crucial for addressing problems in accessing climate-resilient WASH services. Transgenders face social stigma, leading to their exclusion from basic WASH services. There is potential to raise awareness on social and gender inclusion, along with specific initiatives for persons with disabilities in the local stakeholder body. Understanding gender, sexual diversity, and gender-inclusive capabilities and strategies to overcome challenges is critical for building capacities. Therefore, the survey questions specifically focused on gender and inclusion. The findings are as follows:

3.3.1 Bhubaneswar

Awareness of Diverse Genders

Respondents across all five Wards acknowledged awareness about male, female and transgender, but reported stigma surrounding transgenders. Respondents from transgender community reported difficulty in social acceptance. While some MSF respondents from Ward 30 saw acceptance, some others reported facing struggles in obtaining rights and dignity. Respondents from 43 and 49 reported that the stigma for transgenders exists and is often associated with their occupation and lifestyle.

> "We do not receive any information about the stakeholders' meetings, nor are we invited to attend any of the meetings."
>
> **-Zoya, a trans person from Ward 11, Jaipur**

Awareness of Inclusive Approach on WASH

Respondents from SSC, Jal Sathis and Swachh Sathis of Ward 22 shared that transgenders face challenges in accessing water points and public toilets due to societal exclusion. Respondents from Ward 38 shared concerns about individual toilets outside homes and difficulties faced by women and girls during night-time. Respondents from SHGs of Wards 43 and 49 also shared problems faced by women and girls in disposing of sanitary pads, and household waste, and the importance of periodic desludging of septic pits.

Inclusion of Poorest in availing WASH Services

Wards 43, 38 and 49 reported inclusive measures taken such as PwDs signage for waste collection from all households and also for inclusion in water supply through engagement of SDA, SSC and community volunteers, whereas in Ward 30 respondents raised concerns about limitations in waste collection accessibility for families where working members are unavailable during pickup times. Respondents from Ward 22 reported challenges and exclusion faced by transgender due to inadequate documentation.

3.3.2 Jaipur

Traditional gender roles and stereotypes

Many respondents from Wards 17 and 147 said that here women are playing traditional gender roles as they could not follow up with officials and departments on issues related to WASH, given their responsibilities at home. However, there were instances in Wards 11, 84, and 123, where women respondents shared their experience of taking the lead in resolving WASH issues, though their participation in formal meetings was minimum.

> "Transgenders, women and persons with disabilities should be given the opportunity to lead the community level process and included in the stakeholders' forum."
> **-Somnath Pradhan, Youth member, Ward 49, Bhubaneswar**

Limited understanding of gender

Most of the respondents in Wards 11, 17, and 84 shared a binary perspective of gender, recognizing only two genders. However, Wards 123 and 147 and adolescents across all five wards have demonstrated a better understanding of the third gender.

Disparities, exclusion, and lack of inclusivity in SDC

A consistent issue across all five Wards is the limited representation of women, socially marginalized communities, and the absence of representation from transgenders in the community and stakeholders' meetings on slum development, indicating lack of social and gender inclusivity within the SDCs.

Gender inclusivity remains a pressing concern, as decisions were predominantly taken by men in these meetings. The lack of participation from women, transgenders, and socially marginalized individuals in the SDCs suggests the need for equal participation and improved access to information. At the same time, many respondents from Wards 11, 84, and 123 also shared about women's leadership in tackling challenges for WASH services in terms of organizing and approaching functionaries. However, a formal representation of women as office bearers of SDC is missing across all the settlements. Building an equitable society hinges on the active participation of all voices. It is imperative for developing gender equality and community empowerment to enhance inclusion in local governance structures that empower these communities to contribute and shape decisions that impact them directly.

3.4 Access to information about government schemes and duty-bearers

3.4.1 Bhubaneswar

The survey assessed the knowledge and understanding of local stakeholders on existing government programs on WASH. The survey also checked on awareness and level of interaction with government functionaries, including duty-bearers, and at the third tier of governance i.e., at the municipality level, to deliver on WASH. The findings are as follows:

Awareness about government programs and support on WASH

In all the Wards, respondents from SDAs, SSCs, CMCs, SHGs, Jal Sathis, and Swachh Sathis were generally aware of government programs related to safe water and sanitation including the 24-hour water supply scheme of the state government implemented by WATCO, waste collection by BMC, subsidies for individual toilets to needy households and waste management under Swatch Bharat Mission (SBM)-2. Some of the respondents also mentioned AMRUT focussing on safe water and sanitation in cities. The awareness level about water quality testing by WATCO was also minimal However, there was desire among stakeholders to get more information on the schemes and programs on WASH. Most of the respondents across wards expressed an interest in knowing more about specific program norms, eligibility criteria, service providers, and operational structures of government schemes, particularly on SBM and AMRUT. Respondents from SSCs and SHGs showed interest in the process of water testing and SDAs also showed interest in disaster preparedness. Respondents from Ward 49 expressed the need for provision in

> "Office bearers play a crucial role in providing services as they are appointed for specific services and trying to provide the services at their end. For example, during extreme weather, they reach out to the community and facilitate the necessary services."
>
> **Ms. Tulasi Ray, SHG member, Bhubaneswar**

the government budget for climate adaptation and resilience and expected guidance from the government on required adaptation measures to be taken.

Awareness and perception about the duty bearers

The respondents mentioned various duty bearers, such as Jal Sathis, junior engineers, Swachh Sathis, sanitary inspectors, Ward officers, WATCO officials, water quality testing lab technicians and community organizers, who play key roles in WASH programs and managing services.

Respondents in Ward 49 perceived that various duty-bearers and officials were aware of safe water and sanitation practices. They also perceived that limited knowledge exists among duty-bearers regarding climate change and its relationship with WASH. Respondents appreciated the role of duty-bearers including Assistant Managers and Sanitary Inspectors, for supporting crucial services ranging from water quality testing to waste collection services.

Office bearers, such as SDA members and Swachh Sathis, were observed to take steps to support persons with disabilities in accessing WASH services. The most poor and needy persons from the community were prioritized for availing WASH services, such as toilet construction and water supply or tap installation. Respondents from the MSF acknowledged the importance of office bearers, noting their efforts in facilitating services, especially during extreme weather conditions. Office bearers were recognized for their role in reaching out to the community and ensuring the smooth delivery of services. Respondents perceived that office bearers had the awareness of diverse genders, including males, females, and transgender. In Ward 22, transgender respondents, while acknowledging the importance of office bearers, felt they were neglected.

> "We have no information about the government schemes; all we know is that there is a waste collection truck which collects waste as part of Swachh Bharat Mission."
> **-Sunita Saini, an elderly woman, ward 123, Jaipur**

3.4.2 Jaipur

The survey assessed the knowledge and understanding of the MSF on existing government programs on WASH specifically familiarity with SBM, Jal Jeevan Mission (JJM), and state government's programs on WASH. The survey also assessed awareness and level of interaction with government functionaries and duty-bearers from various government departments to access WASH services specifically from Nagar Nigam, Ward Office, and PHED. The findings are as follows:

Awareness about Local Decision-making Body

A majority of respondents across all the settlements in the five Wards demonstrated awareness about local committees, particularly the SDCs. In some settlements, respondents also approached the local councillor, indicating the connection to local governance structures. Most of the respondents were aware of SDC, single window forum (SWF), and CMC. However, the knowledge about the various office bearers of SDC, SWF, and CMC was inconsistent across the surveyed settlements, lowest in Wards 84 and 123, and highest in Wards 17 and 147.

Limited understanding of the government programs

Most of the respondents were aware of the assistance under the SBM for building the toilet, but they were unaware of the subsequent programs of SBM-2, JJM, and state-led programs. The frontline stakeholders including CMCs, Water Committees, and WASH Committees also shared the need for more detailed information about various schemes. It was found that stakeholders have the least knowledge about the government programs in Ward 84 and have good knowledge in Wards 17 and 147.

Inadequate knowledge about duty-bearers

Leaders and the members of the SDCs generally engage with functionaries from PHED, Jaipur Municipal Corporation (JMC)/ Nagar Nigam, indicating a link between the residents and local governance structures, however, their engagement was limited to certain levels and spaces, and knowledge about higher officials overseeing the programs was minimum. Some of the respondents also informed that they find duty-bearers approachable. In many settlements, respondents shared accessibility to Sanitation Inspectors who look after managing solid waste in a Ward. The knowledge about duty-bearers was least in Wards 84 and 123, and highest in Ward 17.

Familiarity with the division of departmental roles

The local stakeholders' association with relevant departments such as PHED for water and Nagar Nigam for sanitation to address specific concerns shows their awareness about the responsibility and roles of various departments even in the absence of information about detailed programs or schemes. There was also limited knowledge about other departments such as the Social Justice and Empowerment Department (SJED) which works for PwD. Familiarity with the division of departmental roles was highest in Wards 17 and 147, and least in Ward 84.

Chapter 4: Analysis

4.1 Awareness on access to Safe WASH services

In Jaipur access to water within the premises is highly valued and equated with safe water. Most respondents in Jaipur do not have access to piped water, making the availability of water at their doorstep a significant factor in their understanding of safe water. The definition of safe water, especially concerning water quality and availability as and when required, is not clear to most respondents. Respondents in Bhubaneswar generally have access to piped water supply within their premises. Access to water within the premises is not explicitly mentioned as a key criterion for safe water by respondents in Bhubaneswar, possibly due to the existing access to piped water. The emphasis is more on the quality of water. Both locations reflect aspects of SDG 6, but with different emphases. Bhubaneswar aligns more with the goal of ensuring water quality, while Jaipur highlights the need for improved access. The understanding of safe water varies between Bhubaneswar and Jaipur due to differences in water access. Addressing the gaps requires tailored approaches – focusing on water quality awareness in Bhubaneswar and improving access in Jaipur.

Bhubaneswar respondents exhibit a higher level of awareness and articulation regarding safe sanitation practices compared to Jaipur. This might be attributed to better access to sanitation facilities and community-driven initiatives in Bhubaneswar. In Jaipur respondents shared about varied sanitation facilities, including individual household latrines with sewer connection, single pit latrines, community toilets, and open defecation. There is limited awareness on safe sanitation, with dissatisfaction about the operation and maintenance of community toilets and concerns about safety, especially for women and girls, around shared toilet facilities. In Bhubaneswar there is awareness on safe sanitation practices, including clean toilets, periodic desludging, and solid waste management. There is understanding on importance of association of safe sanitation with twin pit toilets, waste segregation and discharging domestic wastewater into drains, interest in recycling waste and safe disposal, with a need for learning about sustainable practices.

Jaipur respondents show increased awareness of hand hygiene due to COVID-19, but Bhubaneswar respondents are more articulate in understanding and expressing the components of hygiene across the sanitation value chain. Both cities face challenges in solid waste management, but Jaipur has taken steps to coordinate with local authorities for regularized waste collection. Bhubaneswar respondents express a broader interest in sustainable waste practices. Respondents in Jaipur shared about challenges on access to MHM absorbents whereas concern raised by Bhubaneswar respondents were related to menstrual waste management.

Both cities can benefit from community-driven initiatives and educational programs to enhance awareness on safe sanitation, hygiene, and waste management.

4.2 Climate Change and Climate-Resilient WASH

In Jaipur, respondents show practical awareness but limited conceptual understanding of climate change. In Bhubaneswar some respondents showing a more comprehensive grasp of climate change and awareness extends beyond immediate impacts to broader environmental and societal factors. In both the cities there is need to conduct community workshops and awareness programs specifically focused on climate change to bridge the conceptual understanding gap and provide information on the broader implications of climate change beyond immediate impacts and leveraging the knowledge of respondents with a deeper understanding.

The respondents in both the cities shared unawareness on climate-resilient practices in general, and about the concept of climate-resilience. Some respondents shared about the sessions held at the community level on not wasting water and reusing it, but there is ample scope to expand knowledge and skills on climate-resilient practices. As the settlement are very congested, rainwater harvesting, and water conservation techniques yet not tried by communities in both the cities.

There is potential to collaborate with local training institutions and environmental organizations to organize awareness campaigns and workshops on Climate Change in local language. This could be followed up with encouraging community-led initiatives for climate-resilient WASH practices, involving residents in decision-making processes and building partnerships with local authorities for infrastructure improvements, focusing on resilience to extreme weather events.

4.3 Community ownership, and role of CBO for climate-resilient WASH

Jaipur showcases instances of successful community engagement while Bhubaneswar highlights the presence of various community organizations actively involved in WASH activities. Both cities report challenges in sustaining community engagement over time and challenges related to gender disparities and limited inclusion of marginalized groups in community meetings and organizations. Jaipur emphasizes the need for tailored strategies for inclusivity, while Bhubaneswar acknowledges limited participation of PwD and transgender -. Bhubaneswar reports a responsive local governance system in some wards, while Jaipur highlights scepticism about political agendas and a perceived lack of agency.

There is need for targeted awareness campaigns on the importance of community engagement in both cities especially on the role of the fourth tier of local governance in the form of CBOs and required coordination with third level of local governance - Municipal Corporations -for strengthening resilient WASH services.

4.4 Awareness on social and gender inclusion

Both cities face challenges related to traditional gender roles and stereotypes, limited understanding of gender diversity, and the lack of inclusivity in governance structures. Jaipur reports a limited binary understanding of gender, while Bhubaneswar acknowledges diverse genders but notes stigma and challenges for transgenders. Both cities report a poor representation of women in decision-making bodies such as SDAs. Both cities recognize the importance of inclusive measures, with Bhubaneswar reporting specific initiatives for the poorest, including setting up PwD signage in areas where persons with disabilities reside for better waste collection. Jaipur acknowledges challenges faced by certain families engaged in more exacting work where they have to leave for work at the crack of dawn and they find it difficult to access waste collection services.

Targeted capacity building measures including awareness campaigns and workshops on gender diversity and challenging stereotypes, and promoting inclusivity required in both cities. The capacity building should aim towards designing and implementing strategies to enhance the representation of women, transgenders and marginalized groups in decision-making bodies.

4.5 Access to information about government schemes and duty-bearers

Bhubaneswar exhibits generally high awareness about government programs, while Jaipur faces challenges with limited understanding of schemes and detailed information about WASH programs. Bhubaneswar residents are well-aware of various duty bearers, recognizing their roles in supporting WASH services, while Jaipur residents demonstrate limited knowledge about higher officials and departments overseeing programs. Both cities show gaps in knowledge about climate change's impact on WASH, with Bhubaneswar expressing a desire for government guidance on adaptation measures. Conduct targeted awareness campaigns and workshops in both cities to provide detailed information about WASH schemes, eligibility criteria, and operational structures. Facilitate more extensive engagement between Community members, CBOs and duty bearers in both cities to bridge the knowledge gap and enhance awareness about higher officials and overseeing departments. Focus on providing more information about climate change and its impact on WASH to duty bearers.

Chapter 5: Conclusions and Way Forward

5.1 Conclusions

The survey shed light on the existing situation on access to water and sanitation and highlighted the vulnerabilities in the slum settlements to access basic services on WASH, especially accessing piped water at premises and access to IHHL. The survey also revealed limited understanding of the community members specifically of representatives of MSF members about safe and climate-resilient WASH services in the surveyed settlement and limited awareness of inclusivity and gender issues. Immediate attention is required to strengthen the knowledge for capacity building and preparedness of the MSF and the communities to cope with climate change impacts.

The limited engagement of the community-based organizations such as MSF and SDC was observed in terms of actively participating and taking responsibility for WASH initiatives. While SDCs were engaged in issues related to access to WASH, the survey suggested that participation dynamics in the decision-making body were not representative of the diversity within communities. Community ownership and leadership emerged as an area requiring sustained mentoring and handholding. There is a need to empower the local committees, particularly SDA/SDC and SSCs with information and training to act as effective conduits and play a critical role in effective coordination between the 3rd and the 4th tiers of governance.

The survey indicates a varied understanding and acceptance of diverse genders and reveals challenges in achieving inclusive WASH practices. To enhance MSF's capacity, efforts should focus on addressing stigma, promoting awareness about diverse genders, ensuring inclusivity in WASH services, and improving climate-resilient practices.

The limited engagement of the MSF was observed in terms of actively participating and taking responsibility for WASH initiatives. Though the SDA/SDC and other stakeholders expressed uncertainty about the details of government programs and schemes, they clearly associated water-related issues with PHED and sanitation concerns with Nagar Nigam. While SDCs were engaged in issues related to access to WASH, the survey suggested that participation dynamics in the MSF were not representative of the diversity within communities. Community ownership and leadership emerged as an area requiring sustained mentoring and handholding. There is a need to empower the local committees, particularly SDA/SDC and SSCs with information and training to act as effective conduits and play a critical role in effective coordination between the 3rd and the 4th tiers of governance.

The findings also highlighted the complex landscape of various departments responsible for implementing WASH services. While lack of information and awareness of the MSF and their committees on various government plans and schemes were noted in the survey, WASH future initiatives should prioritize education and collaboration among duty-bearers, community leaders, and marginalized groups to build a more inclusive and resilient community. There is also a need for effective communication from the government department and training of the local stakeholders to address the knowledge gaps, especially on SBM-2, JJM, and state-led WASH programs. By addressing these knowledge gaps, authorities can enhance stakeholders' engagement and promote effective utilization of WASH initiatives for the betterment of residents in the five wards.

These five wards each from Bhubaneswar and Jaipur were selected based on the climate vulnerability and risk assessment baseline study conducted in the area in the early 2023. For the baseline survey, 19 wards and 24 wards in Bhubaneswar and Jaipur, respectively, were initially selected. The baseline study revealed that the majority of the slum settlements grapple with the absence of WASH infrastructure and widely impacted by climate-induced events and have poor knowledge on safe WASH services. Five wards each from Bhubaneswar and Jaipur were selected based on their vulnerability to climate change and its impact on WASH, knowledge gap on safe WASH practices, community engagement, and gender awareness, among other factors.

5.2 Way forward - Comprehensive Capacity Building Program

Going forward, a comprehensive capacity-building program should be designed, focusing on enhancing MSF's engagement and strengthening the coordination of local governance structures in all five wards each from Bhubaneswar and Jaipur. This involves targeted awareness campaigns, skill-building workshops, and collaborative initiatives. The identified capacity gaps require a concerted effort from various stakeholders, civil society, development partners, and stakeholders themselves in mentoring each other and providing practical insights, government bodies especially directly engaged with service delivery on WASH, working on urban development or disaster management and climate change. Building on the insights gained from the assessment, following table enlist the capacity gaps identified in both the cities and the potential capacity building initiatives.

Table 4: Current Capacity Gaps and Measures

	Current Capacity Gap- Challenges		Capacity Building Measures- Solutions	
	Bhubaneswar	**Jaipur**	**Bhubaneswar**	**Jaipur**
Strengthening understanding on Safe Water, Sanitation and Hygiene	Lack of awareness on water quality testing. Expressed interest in learning about water quality testing and parameters of safe water. Interest in recycling waste and safe disposal of sanitation waste across the sanitation value chain, with a need for learning about sustainable practices.	Lack of clarity on what constitutes safe water in terms of quality and availability. limited awareness on safe sanitation, with dissatisfaction about the operation and maintenance of community toilets and concerns about safety, especially for women and girls, around shared toilet facilities	Raise awareness about the importance of water quality testing and provide information about water quality parameters. Strengthen community education programs on water safety. Community-driven initiatives and educational programs to enhance awareness on safe sanitation, hygiene, and waste management. Bhubaneswar could continue promoting sustainable practices and focus on specific issues like hand hygiene.	Implement measures to enhance access to clean water sources, potentially through the extension of piped water supply or alternative community water projects. Provide education on water safety. Community-driven initiatives and educational programs to enhance awareness on safe sanitation, hygiene, and waste management. Jaipur could focus more on improving access to safe sanitation facilities, especially for women, and addressing challenges in waste management.

Strengthening knowledge and practices on Climate change and Climate Resilience practices	Limited conceptual awareness of climate change and climate-resilient practices	Same as in Bhubaneswar	Awareness campaigns and workshops on Climate change and Climate-resilient WASH practices. Encourage community-led initiatives for climate-resilient WASH practices, involving residents in decision-making processes and building partnerships with local authorities in Bhubaneswar for infrastructure improvements, focusing on resilience to extreme weather events.	Same as in Bhubaneswar
Strengthening CBOs and community ownership	Challenges in sustaining community engagement and challenges related to gender disparities and limited inclusion of marginalized groups in community meetings and organizations	Same as in Bhubaneswar	Organize training sessions and workshops for importance of CBOs, trust building exercises and in engaging with local governance structures. Implement measures to address unresolved issues of SDC/CBOs to sustain enthusiasm for community meetings and develop strategies to involve community members in on-going	Same as in Bhubaneswar

			discussions and decision-making. Training sessions on diversity and inclusion in decision making of CBOs.	
Strengthening social and gender inclusion	Limited understanding of gender diversity, and the lack of inclusivity in governance structures	Same as in Bhubaneswar	Campaigns and workshops on gender diversity and inclusivity	Same as in Bhubaneswar
Strengthening understanding about government schemes and duty-bearers	Gap expressed on understanding of duty bearers on climate change and providing climate-resilient WASH services. Lack of understanding about higher level officials	Challenges with limited understanding of schemes, information about WASH programs and duty bearers	A combined session with duty bearers and communities can be done on Climate-resilient WASH Services and how government programs can be strengthened to add the climate lens. Orientation and engagement between Community members, CBOs and duty bearers in Bhubaneswar slums to bridge the knowledge gap and enhance awareness about higher officials and overseeing departments	Conduct targeted awareness campaigns and workshops in both cities to provide detailed information about WASH schemes, eligibility criteria, and operational structures. Same as in Bhubaneswar

Suggested approaches for Capacity Building

Participatory inclusive approaches need to be integrated across all the capacity building initiatives to ensure leaving no one behind, apart from targeted interventions to improve gender awareness within the MSF and local-level leadership structures. The following five approaches are suggested as guiding principles to shape the training contents under specific themes.

- **Training to be tailored according to the local context**

  It is important to impart training in the local language and training material and facilitation to be conducted in the local language by facilitators who can link the local context with the broader themes. Given low level of literacy and poor economic conditions, people cannot afford to take leave from work, the tools and tactics of knowledge and capacity-building initiatives should be flexibly crafted around local situations. Emphasizing the success stories from specific wards on various components and cross–learning across wards can serve as inspiration to fostering a city-wide movement towards climate-resilient and sustainable WASH practices.

- **Capacity building as a tool to strengthen MSF and other CBOs**

  Building programs can be designed to empower diverse stakeholder members specifically MSF members to take on leadership roles, fostering a more inclusive and representative decision-making process. Sharing success stories from leaders from diverse genders, women can serve as role models and encourage greater inclusivity across all community-led initiatives. Additionally, sensitisation and capacity building of frontline workers like the Slum Development Association, Sanitation Sub-Committee, Jal Sathis (water volunteers), Swachh Sathis (sanitation volunteers), Single Window Forum (SWF), and Community Management Committee (CMC) is pivotal. This will equip them with the skills needed to effectively manage and address local challenges. This approach aligns with the vision of empowered MSF leading the way towards strengthening the 3rd and 4th-tier governance models in Bhubaneswar and Jaipur.

- **Making use of existing platforms and resources**

  Launching extensive awareness campaigns is essential to educate residents on utilising toll-free numbers for reporting water, sanitation, and drainage-related issues. Promoting these helplines (1929 in Bhubaneswar and 181 in Jaipur) as accessible avenues for problem redressal will encourage communities and local stakeholders to actively engage in reporting and contribute to the overall improvement of WASH services. The training or interactive sessions on the government programs may be facilitated by the government functionaries, as this will also enhance communication and familiarity with local functionaries. By building on the existing association with

relevant departments and providing detailed information about government plans and schemes including grievance redressal mechanisms, authorities can enhance the participation of the local stakeholders in government-led initiatives. Recognising various communication channels, including social media, traditional media, and community events, will inform residents about available services, subsidies, and entitlements. This initiative would promote transparency and encourage citizen participation.

- **Feedback-Driven Capacity Building**
  The capacity building should employ a mix of participatory techniques spread over a period of time and collect feedback from MSF participants to adapt and improve the training program. There is also a need to establish a monitoring and evaluation system to track the progress of MSF capacity-building initiatives and if the enhanced capacities are helping the MSF to unlock the challenges in accessing resilient safe WASH services.

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Baseline assessment of capacities of Duty bearers of WASH system and community to engage with climate resilient WASH development and interventions

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A. Basic awareness of an individual regarding WASH / Climate Change / Climate- resilience / Safe Sanitation practices / Diverse Gender

1. Are you aware of any of the following, if no, would you like to have more information on any of these?
   a. What is safe water? What are safe sanitation practices?
   b. What is climate change / climate-resilience?
   c. Are climate change, climate-resilience, water, sanitation and hygiene related?
   d. Is climate change impacting water availability and access to safe water?
   e. What is the importance of water conservation in context of climate change in Rajasthan/Odisha?
   f. Are there any linkages between water, sanitation, hygiene and health?
   g. What are the various water conservation practices that can be taken up by community?
   h. What are the various types of traditional water sources that are practiced even today?
   i. What is a safe sanitation practice, which could lead to good hygiene?
   j. What are these safe sanitation practices?
   k. Are you aware of diverse genders?
   l. Are you aware of any stigma related to diverse genders?

B. Awareness of an individual regarding government programs with WASH component

1. Are you aware of any of the following, if No, would you like to have more information on any of these?
   a. Any government programmes for community that are focused on safe water / safe sanitation?
   b. If there is awareness regarding any government program as in (a), then – are you aware of any program norms / what does the program have to deliver to?

C. **Awareness of an individual regarding office bearers / duty bearers supporting WASH program.**
   1. Are you aware of any of the following, if no, would you like to have more information on any of these?
      a. Is any of the duty bearer / official aware about
         i. What is safe water? What are safe sanitation practices?
         ii. What is climate change / climate-resilience?
         iii. Whether climate change, climate-resilience, water, sanitation and hygiene related?
      b. Any government official related to the program on safe water / safe sanitation? Name of such office bearers
      c. Any local official / local duty bearers who is in charge of day-to-day affairs for service delivery of safe water and safe sanitation as per program norms? Request names of such office bearers
      d. What is the duty, roles and responsibilities of any of the above office bearers?
      e. Do you think that the office bearers are doing an important job? Why?
      f. Are office bearers aware of diverse genders?
      g. Do you recall any office bearer taking any steps to support persons with disabilities in securing WASH services? If Yes, examples, if No, why steps were not taken up by office bearer in a particular case?
      h. Does the office bearer in your settlement include the neediest or poorest of the poor in your community for availing benefit from WASH services? Examples

D. **Awareness of an individual regarding inclusive approach**
   1. Are you aware of any of the following, if No, would you like to have more information on any of these?
      a. What are the problems women and girls face in managing WASH?
      b. In your settlement are the neediest or poorest of the poor in your community included for availing benefit from WASH services? Examples
      c. how successful are the duty bearers in making the poorest of the poor aware of climate-resilient WASH system? Please suggest ways to make more people aware.

E. **Awareness of an individual regarding practicing climate-resilient WASH practices**
   1. Are you aware of any of the following, if no, would you like to have more information on any of these?

a. Do you practice water conservation after becoming aware? If Yes, please elaborate/If No, do you want to know about it?

b. Do you practice safe sanitation, after becoming aware? (using toilets, regular desludging), If Yes, please share your experience/ If No, do you want to know about it?

c. List out the activities that lead you to wash your hands. Do you want to know about hand hygiene?

F. Awareness of an individual regarding community practicing climate resilient WASH practices

1. Are you aware of any of the following, if No, would you like to have more information on any of these?

   a. Have you seen changes in people's awareness about their responsibility towards new WASH services?

   b. ✔ If Yes, tick the appropriate options-water tap/ toilet / drains / waste composting / cesspool vehicle

   c. If yes, share what has changed / If No, why? Do you want to know more about it?

G. Participation of an individual in community led engagement processes

1. Are you aware of any of the following, if No, would you like to have more information on any of these?

   a. Do you actively participate in the community meetings? Yes/No

   b. At the community meetings, do they discuss the development and maintenance of WASH infrastructures and services? Yes/No. If Yes, please share/If No, why are they not discussing these developments?

H. Awareness of an individual regarding participation of office bearers / inclusive approach in community led engagement processes

1. Are you aware of any of the following, if No, would you like to have more information on any of these?

   a. Do the duty bearers have participation from women, disabled, and trans-persons in the decision-making body? If Yes, please explain.

   b. Do you see women and persons with disabilities, trans persons in leadership positions within the community? If Yes, name some/if No, why do you think they are not in leadership position

I. Awareness of an individual regarding access to climate resilient WASH services

1. Are you aware of any of the following, if No, would you like to have more information on any of these?

   a. Are you able to access the same level of WASH services during and after extreme climate events? If yes, please elaborate/ If No, why are you not able to access?

   b. In your opinion, do the duty bearers show any concern about making WASH services accessible during flooding or other bad weather conditions? If Yes (share one or two examples)/If No, why do you think they are not concerned?

   c. Have you observed how people manage safe water and sanitation practices in your community during and after extreme climate events? Yes/No. If Yes, share/If No, do you want to know about it?

   d. What are the practices that you adopted based on your awareness regarding climate change?

   e. Did you observe any impact on health and WASH? if yes, what was the impact?

   f. Did you observe any burden of WASH tasks specifically water fetching, changed for women and girls? If Yes, how has this impacted their daily routines/practices? If No, why is the practice not changing?

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- Ms. Asha Gurjar, Ms. Pinki Gurjar, Ms. Neetu Gurjar (from ward 99)
- Ms. Rajni Dhanka, Ms. Sarita Shaikh, Mr. Parveen Raigar, Ms. Nasreen Shaikh, Mr. Usman Khan (from ward 11)
- Ms. Ranjita Gurjar, Ms. Kesri Meena, Mr. Rama Gurjar, Ms. Manju Bairwa, Ms. Manisha Bairwa, Ms. Gindodi Bairwa, Mr. Prem Bairwa, Ms. Julekha Bano (from ward 113)