SaciWATERs
SOUTH ASIA CONSORTIUM FOR
INTERDISCIPLINARY WATER RESOURCES STUDIES

Finding Adaptation solutions to Menstrual Health Risks induced by Climate change through knowledge cocreation.

SSN/ARA Micro-grants

Project Report Submitted

by SaciWATERs

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Finding Adaptation solutions to Menstrual Health Risks induced by Climate change through knowledge cocreation.

Supported by SSN/ARA Micro-grants by the International Institute for Environment and Development (IIED) & Adaptation Research Alliance (ARA)- South South North (SSN).

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Cover Photo: Women wading waist-deep in the creek water at Mahendra Naga

1. Background:

- **Sundarbans:** The Sundarbans, designated as a UNESCO World Heritage Site, encompasses an extensive expanse of mangrove forests spanning approximately 140,000 hectares. Positioned at the confluence of the Ganges, Brahmaputra, and Meghna rivers on the Bay of Bengal, its geographical coordinates range between latitudes 21°13'N to 22°40'N and longitudes 88°3'E to 89°07'E. This mangrove area, covering around 10,200 square kilometers, is geographically distributed between India (4,200 square kilometers of reserve forest) and Bangladesh (6,000 square kilometers of reserve forest) (Gopal and Chauhan, 2006). The Sundarbans serves as a critical hub for fostering terrestrial and aquatic biodiversity. Its mangrove ecosystems provide habitats for a diverse array of rare and globally threatened wildlife species, including the Crocodylus porosus (estuarine crocodile), Panthera tigris tigris (Royal Bengal tiger), Varanus salvator (water monitor lizard), Platanista gangetica (Gangetic dolphin), Orcaella brevirostris (Irrawaddy dolphin), Lepidochelys olivacea (olive ridley turtle), Python molurus (Indian python), and approximately 260 avian species, including migratory taxa such as the Calidris pygmaea (Spoon-billed Sandpiper). Additionally, the Sundarbans supports a diverse fish fauna, including the migratory Tenualosa ilisha (Hilsa) (WWF-India & UNEP CMS Factsheet). Remarkably, it harbors a significant population of Panthera tigris tigris, underscoring its pivotal role as a globally significant tiger habitat. Beyond its biodiversity significance, the Sundarbans holds intrinsic value for the 4.5 million human inhabitants within its vicinity, who rely on the ecosystem services it provides. The Sundarbans Delta comprises 102 islands, with 48 inhabited by human communities engaged in livelihood activities such as fishing, agriculture, and the extraction of forest resources, including wood and honey

- **Riverine Landscape and Tidal Dynamics of the Indian Sundarbans:**

The Indian Sundarbans, a unique ecosystem situated along the Bay of Bengal, is characterized by its intricate riverine landscape and tidal dynamics. Bordered by the rivers Muriganga to the west, and Harinbhanga and Raimangal to the east, this region comprises a network of low-lying islands interconnected by a complex system of tidal waterways, estuaries, creeks, and mudflats. The convergence of numerous channels and creeks forms a complex riverine network within this estuarine ecosystem (Manna et al., 2010).

The tidal activity in the Sundarbans facilitates the influx of a significant amount of saltwater into the region. Notable rivers such as Bidyadhari, Matla, Thakuran, and Saptamukhi play crucial roles in the hydrological dynamics of the Sundarbans. Matla and Bidyadhari, flowing southwestward, are among the most important channels in the region. However, due to siltation in the upstream regions, these rivers lack sufficient freshwater connections (Manna et al., 2010). The confluence of Matla and Bidyadhari divides the core area of the Sundarbans Project Tiger from the buffer region. Saptamukhi, situated in the extreme western part of the Sundarbans, flows towards the Bay of Bengal, passing

through the mangrove transition zone and the Lothian Island Wildlife Sanctuary (Pramanik et al., 2019).

During high tides, the entire Sundarbans area is flooded with brackish water, which mixes with freshwater from inland rivers. The distribution of mangrove species within this ecosystem is closely tied to the salinity regime. Each species exhibits a specific optimal range of salinity conducive to its habitat, with tolerance levels subject to modification in response to environmental shifts (Barik et al., 2017). Understanding these riverine dynamics and tidal influences is crucial for comprehending the Sundarbans' ecological processes and the challenges it faces amidst changing environmental conditions.

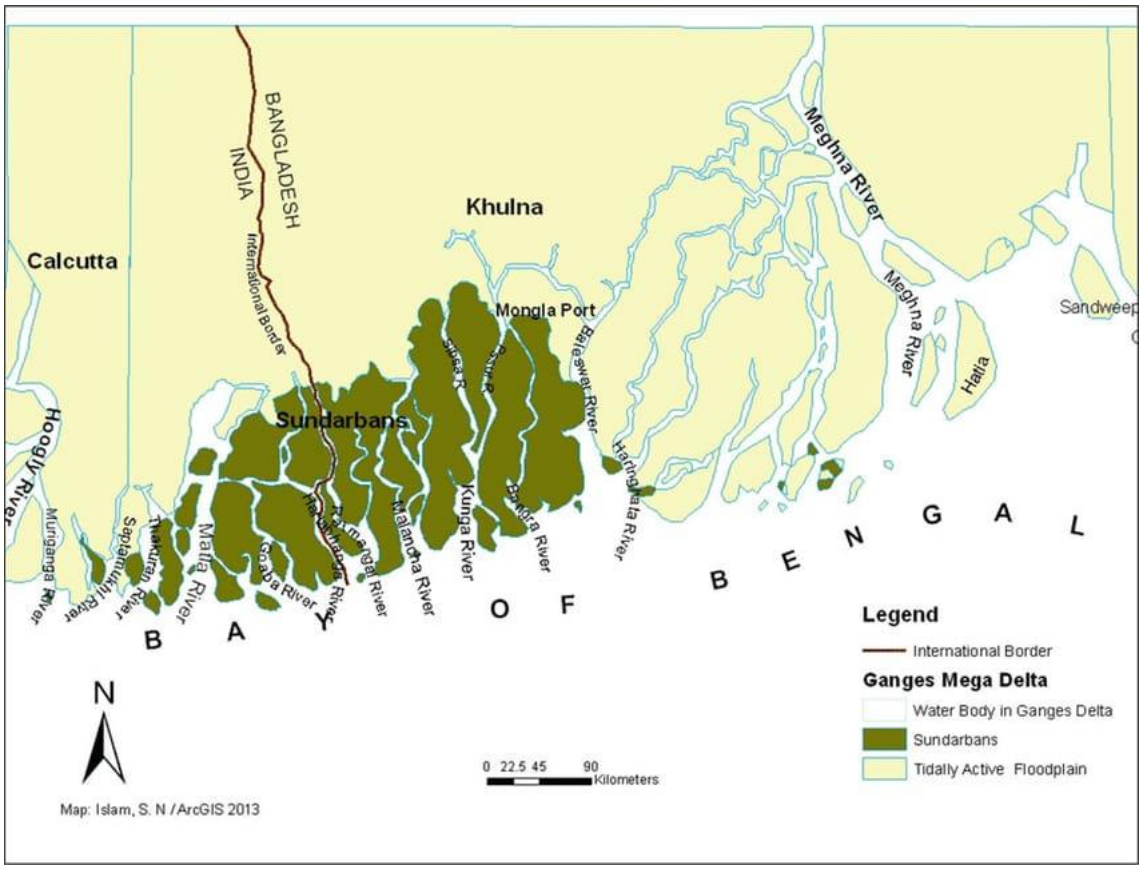

Figure 1: The map illustrates the intricate Sundarbans coastal mangrove delta and river system. (Source: Islam, 2019).

- **Climate Change Impact on Health in the Sundarbans**

Climate change is profoundly impacting the Sundarbans, presenting a significant existential threat to this extreme climate hotspot. The region faces a multitude of persistent water-related threats, including rising sea levels, soil and water salinization, intensifying cyclones, and flooding caused by embankment overtopping and failure (Sánchez-Triana et al., 2018). These challenges have made life increasingly difficult for inhabitants of the Indian Sundarbans, with global climate change expected to further worsen these conditions.

Situated along the eastern coast of India, the Sundarbans region, particularly the South 24 Parganas District, is known as the cyclone capital of India. Over the past 15 years, a series of cyclonic storms have surged in both frequency and intensity. Notable among these are Aila (2009), Phailin (2013), Hudhud (2014), Komen (2015), Mora (2017), Titli (2018), Fani (May 2019), Bulbul (November 2019), Amphan (2020), Yaas (May 2021), and Jawad (December 2021). These cyclones not only bring strong winds but also inundate the land with saline seawater, disrupting ecosystems, damaging agriculture, harming aquatic life, and compromising access to clean water for essential needs such as drinking, hygiene, and sanitation.

In addition to cyclones, the Sundarbans faces the consequences of floods and tidal surges, which lead to increased salinity levels that contaminate water sources. Scientific studies have provided evidence of environmental pollution in the region's riverine system, with pollutants from upstream industrial areas finding their way into the Sundarbans. Moreover, agricultural runoff containing fertilizers and pesticides further deteriorates water quality in the Sundarbans, exacerbating the environmental challenges faced by its inhabitants.

This compounded impact of climate change and environmental hazards has intensified water insecurity in various parts of the Sundarbans. Despite water quality deterioration, many villages continue to consume contaminated water due to a lack of alternatives. In most island villages of the Sundarbans, the absence of treated piped water forces communities to rely on hand pumps for drinking water and ponds for other needs like bathing, household use, cattle rearing, and fishing. Furthermore, groundwater, which is relatively less contaminated compared to pond waters in the region, is also stressed due to high demand for irrigation. This lack of safe water for drinking, sanitation, and hygiene, along with food insecurity and limited healthcare access, has triggered a public health crisis in the region.

While data and studies exist for other diseases, there is a significant lack of discussion and awareness surrounding women's health issues, particularly menstrual health due to taboos and social stigma surrounding it. This lack of discussion and awareness perpetuates the taboo around menstruation, further hindering access to essential healthcare services and information for women in the region. As a result, women continue to grapple with menstrual health issues in silence, without adequate support or resources to address their needs. Furthermore, loss of livelihoods and economic burden further restricts access to safer choices and healthcare services, contributing to period poverty among women. Unfortunately, healthcare services are not accessible or affordable for all, compounding the challenges faced by vulnerable populations. In this context, the intersectionality of challenges related to menstrual health management (MHM) and climate change emerged as a pressing concern, necessitating immediate attention and action.

With this background, the present action research, *"Finding Adaptation solutions to Menstrual Health Risks induced by Climate change through knowledge cocreation"* aimed to address menstrual health risks in climate-impacted communities stemmed from the recognition of a critical and urgent need to mitigate the compounded challenges faced by vulnerable populations, particularly women and girls, in the Sundarbans region. With climate change accelerating, the impacts on this region, characterized by its unique ecological and socioeconomic vulnerabilities, have become increasingly severe.

One of the fundamental principles guiding our project implementation was the concept of knowledge co-creation. Recognizing that meaningful solutions to complex challenges emerge from collaborative

efforts, we prioritized the active involvement of stakeholders at all stages of the project. Through participatory approaches and inclusive dialogue, we aimed to foster an environment where diverse perspectives could converge, facilitating the co-creation and sharing of knowledge among stakeholders.

- **Phase-1 (May-December 2023) supported by ARA Microgrant**

The first phase of the action research aimed to comprehensively assess the challenges and opportunities related to menstrual and reproductive health management and water quality risks in the Indian Sundarbans region. Employing a participatory action research approach, the study centered community voices and perspectives, particularly those of women and marginalized groups in the high-risk zone of the Sundarbans. A combination of quantitative and qualitative research methods, participatory approaches, and stakeholder engagement were utilized to gather data. This included semi-structured interviews, focus group discussions, field observations, and the formation of Participatory Action Research Group (PARG) workshops.

Household surveys conducted using the Kobo Collect App interviewed 400 women, with 100 women from each village, delving into various aspects such as the impact of climate change, livelihoods, water quality, sanitation practices, menstrual health management practices, and healthcare access. Field visits provided invaluable insights into the challenges faced by communities, ranging from cyclones and water salinity issues to healthcare accessibility and livelihood opportunities. Eight PARG workshops were conducted, two rounds in each village, serving as platforms for knowledge co-creation, capacity building, and engagement with village-level stakeholders. Discussions focused on identifying adaptation solutions for menstrual and reproductive health management, establishing linkages between climate change, water quality, and women's hygiene management, and identifying community-driven interventions.

Finally, a state-level dissemination workshop convened in Kolkata facilitated the sharing of research findings and engagement with stakeholders from government agencies, NGOs, academia, and the community. Discussions centered on policy implications and future actions based on the research outcomes.

The first phase of the action research revealed gendered vulnerabilities and multifaceted impacts on livelihoods and health. Natural disasters exacerbate poverty, particularly among women, who struggle to rebuild their lives. Water quality deterioration increases reproductive and menstrual health risks due to inadequate sanitation. Factors like male migration and economic constraints burden women, exacerbating period poverty and limiting healthcare access. The lack of data on menstrual health hampers targeted interventions, urging mainstreaming in healthcare. Context-specific, gender-responsive adaptation is vital, focusing on water access, sanitation, and menstrual

hygiene. A multi-faceted approach involving awareness, policy, empowerment, infrastructure, research, and partnerships is crucial for resilience and sustainable development in the Sundarbans.

Climate Change's Multifaceted Impact on Women's Health

Climate change impacts men and women differently. The impact of climate change on women's health in the Sundarbans is multifaceted and complex. One of the lesser-known impacts is on the menstrual and reproductive health of women, who are disproportionately affected by increased salinity in the region. However, this complexity stems from various factors rather than following a linear equation. People in the island villages of the Sundarbans practice using pond water for bathing, a tradition that poses a unique health challenge to women due to its saline and contaminated nature. Exposure to such water leads to infections through bathing, washing menstrual cloth, and spending long hours fishing waist-deep in the river.

Seventy-seven percent (77%) of the 400 women interviewed reported suffering from menstrual and reproductive health issues, according to the household survey conducted during phase-1. Women complained about recurring Urinary Tract Infections (UTIs), irregular periods, early menopause, heavy bleeding, cysts, and other genital infections. "The lack of healthcare facilities within these island villages adds to the challenges.

Women from marginalized communities, especially those with limited financial resources and healthcare access, bear the greatest burden of climate impacts. For example, men migrating to cities for work often leave women, elderly, and children behind, increasing women's responsibilities and vulnerabilities to climate change. Additionally, economic constraints lead to period poverty, forcing women to rely on cloth washed with contaminated water instead of other sustainable and safe menstrual products, exacerbating infections. Lack of proper healthcare facilities in the Sundarbans further compounds these challenges, with women often traveling long distances for treatment or resorting to quack doctors in their villages.

Furthermore, awareness about reproductive and menstrual health is lacking in many communities, leading to misconceptions and taboos. Women's reluctance to prioritize their own health and seek timely treatment further complicates these issues.

Dipali Bhunia (35) from the fishing community in Mandra Nagar village mentioned, *"We have 15 patients of uterine tumors in our Purbo Para hamlet which has 100 households. Women in the village feel shy and don't share early symptoms with anyone. If the symptoms are treated at the early stages these kinds of major complications can be avoided."*

Glimpses from Phase-1

Glimpses from Phase-1

Glimpses from Phase-1

2. Phase-2 (January- March 2024) supported by SSN/ARA – Budget upliftment grant by IIED

Phase 2 of our micro-grant project built upon the momentum gained in Phase 1, aiming to deepen our impact and reach in addressing the critical intersection of menstrual health and climate change in the Sundarbans region. With a focus on enhanced stakeholder engagement, advocacy efforts, skill development, and documentary production, Phase 2 sought to amplify our commitment to gender and social inclusion while advancing sustainable solutions for menstrual health management. Through targeted activities and collaborative partnerships, we endeavored to empower women, raise awareness, and advocate for policy changes that promote resilience and well-being in the face of environmental challenges.

Objectives for Phase 2: Building upon the foundation laid in Phase 1, the objectives for Phase 2 of our micro-grant project are as follows:

- Enhanced Stakeholder Engagement: Further expand stakeholder engagement to ensure a more inclusive and diverse representation, particularly targeting marginalized groups such as women from different socioeconomic backgrounds and ethnicities.
- Deepened Advocacy Efforts: Strengthen advocacy efforts at the block level by actively engaging block level stakeholders. Raise awareness about gender and social inclusion issues related to menstrual health and climate change adaptation.
- Skill Development and Entrepreneurship: Providing skill-based training sessions for women on manufacturing affordable biodegradable sanitary napkins. Empower women with entrepreneurial skills to create alternative livelihoods and contribute to eradicating period poverty.
- Documentary film for policy advocacy, outreach, and broader dissemination: Production of a documentary film, ensuring it effectively conveys the challenges faced by the community, proposed solutions, and the impact of the micro-grant project. Utilize the documentary as a powerful advocacy tool to raise awareness about menstrual health, climate change, and the imperative of gender and social inclusion.

2.2 Project Sites:

The action research project focused on the Sundarbans region, situated in the South 24 Parganas district of West Bengal, as the primary area of investigation. Selection of study areas was based on a rigorous process, considering factors such as climate vulnerability, health risks, and water salinity issues.

- The area under study has been designated as a High-Risk Zone according to India Meteorological Department (IMD) climatic hazard and disaster study parameters due to frequent hits by cyclones, flooding, embankment breaching, storm surges, along with a high density of population (Figure2).
- Two blocks, Patharpratima and Gosaba, were chosen through random sampling for their heightened vulnerability to these challenges.
- Within these blocks, four villages were randomly selected i.e.
    1. Chandipur, Bipradaspur Gram Panchayat, Gosaba block
    2. Hetalbari, Chhota Mollakhali Gram Panchayat,
    3. Mahendra Nagar and
    4. Durbachati from Patharpratima block (Figure 3).

Chandipur, an island village is located within Bipradaspur Gram Panchayat, Gosaba Block, South 24 Parganas, West Bengal. As per 2011 census, it has a population of 5,456 people residing in approximately 1,283 households. The village primarily relies on paddy cultivation for livelihood, alongside fishing and other agricultural activities and out-migration of male members for employment.

Hetalbari falls under Chhota Mollakhali Gram Panchayat, Gosaba Block, South 24 Parganas, West Bengal. It has a population of 3975 people distributed across 945 households (Census 2011). The village economy revolves around agriculture, fishing, and collection of forest products. Hetalbari lacks access to essential services like healthcare and education, with no primary health center or significant educational institutions within the village.

Mahendra Nagar is situated in Dakshin Gopalnagar, Pathar Pratima Block, South 24 Parganas, West Bengal, with a population of 2192 people. Mahendra Nagar relies on paddy cultivation, small businesses, and out-migration of male members for employment. The village faces challenges in accessing higher education facilities, with no higher secondary school available locally.

Durbachati, located in Durbachati Gram Panchayat, Pathar Pratima Block, South 24 Parganas, West Bengal, has a population of 3830 people spread across 782 households. Similar to Mahendra Nagar, Durbachati's economy is centered around paddy cultivation, small businesses, and out-migration of male members for work. The village also lacks access to local healthcare facilities, with no health centers present within the community.

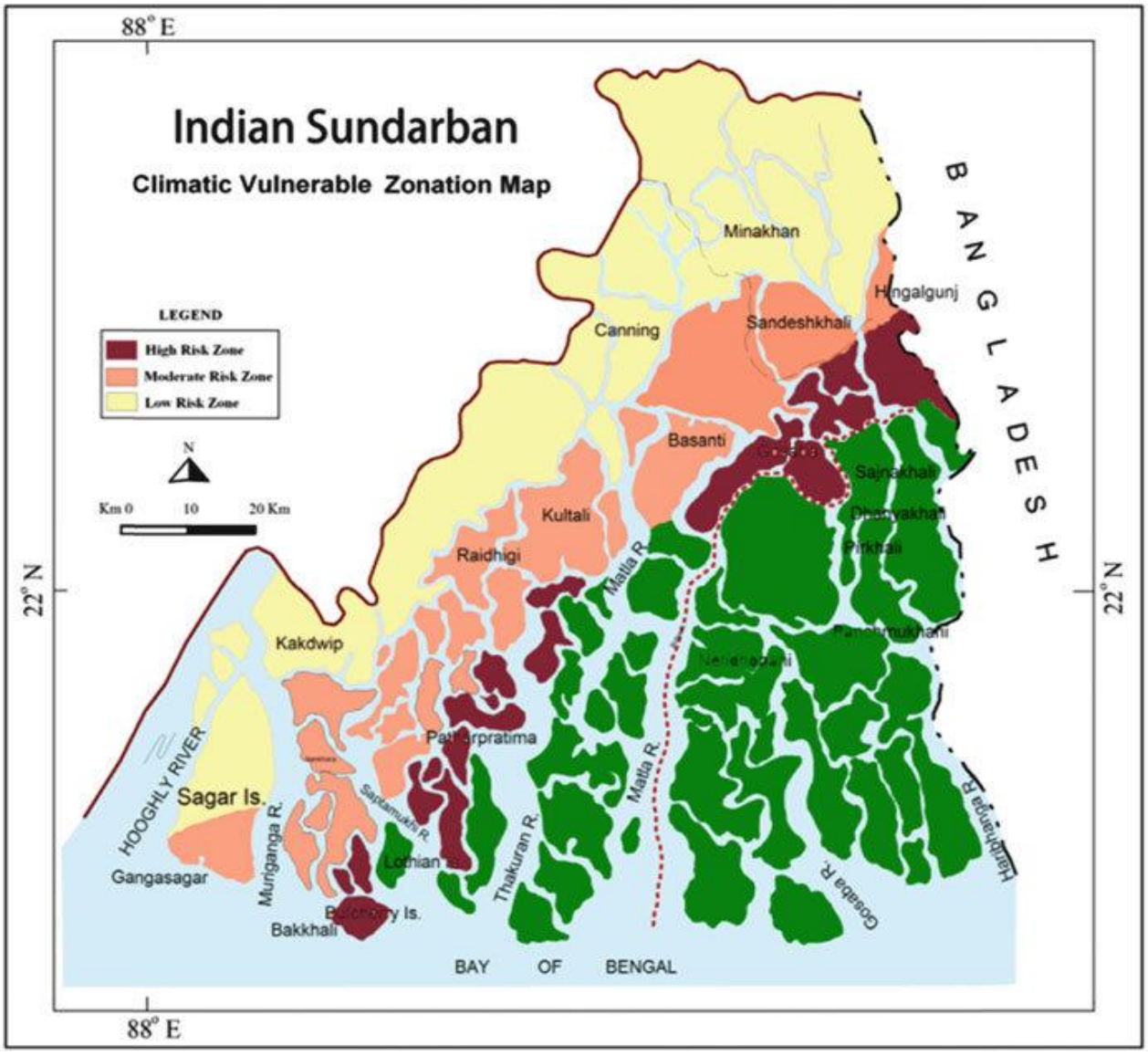

Figure 2. Climatic Vulnerability Zonation Map of the Indian Sundarbans Region by India Meteorological Department. Source: Haldar et al (2014)

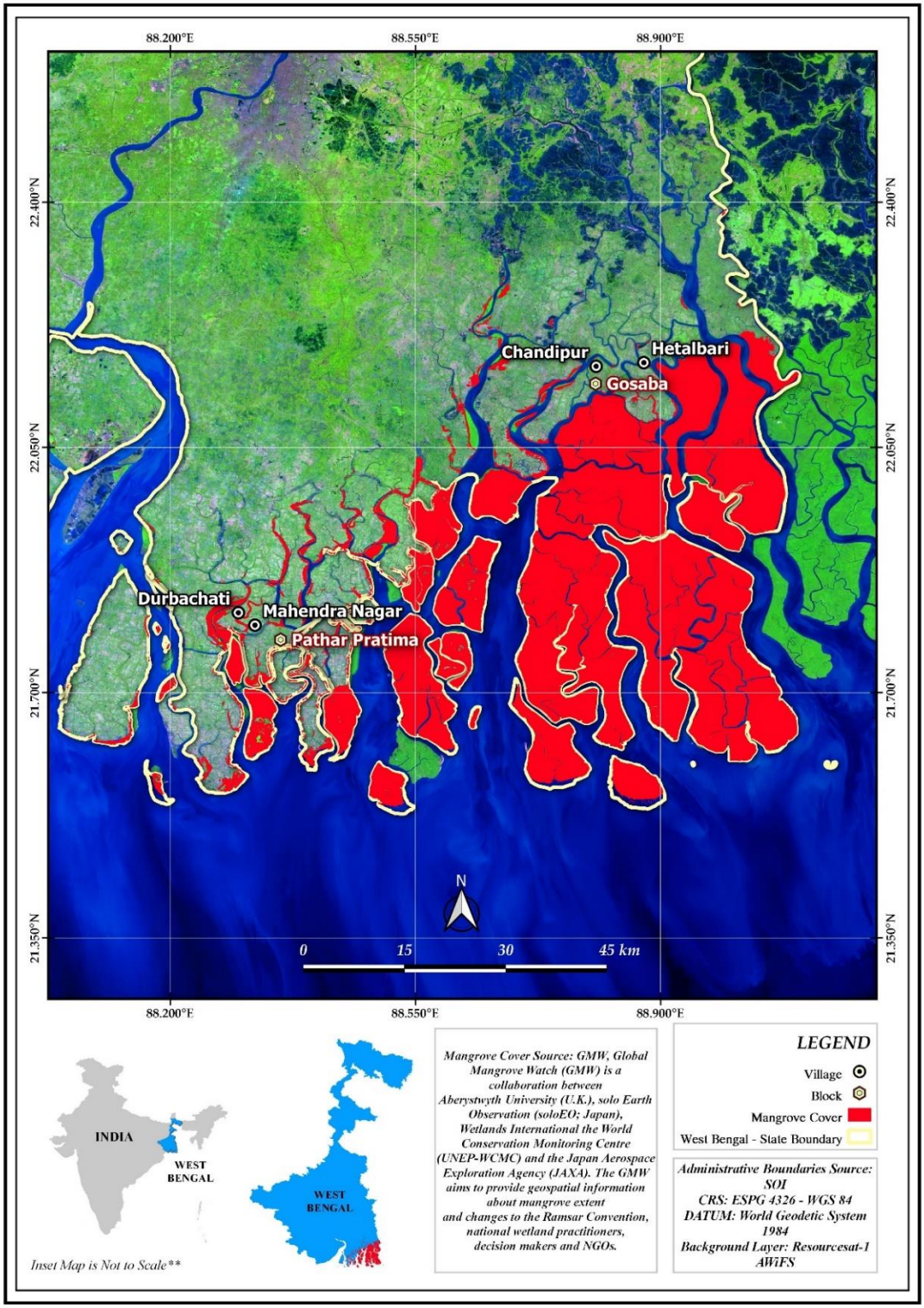

Figure 3. Study Area location map.

Chandipur, an island village by the banks of Bidyadhari river, Gosaba

Ponds in Durbachati village, Pathar Pratima

2.2 Block-level Multi-stakeholder Knowledge Co-creation, Consultation, and Dissemination Workshops

Block-level Multi-stakeholder Knowledge Co-creation, Consultation, and Dissemination Workshop

19th March 2024 from 11:30 am to 1.30 pm

Venue: Community Hall, Gosaba Rupayan building, Arampur, Gosaba.

- **Introduction:**

The Gosaba Block-level Multi-stakeholder Knowledge Co-creation, Consultation, and Dissemination Workshop held on the 19th of March 2024 aimed at fostering collaborative efforts among various stakeholders to address the challenges posed by climate change on menstrual hygiene in the Sundarbans region, known as the cyclone capital of India. The workshop gathered representatives from local bodies, grassroots organizations, educational institutions, and community leaders to discuss resilience-building strategies and adaptation solutions.

- **Session Overview:**

The session commenced with introductions from all stakeholders present, providing insights into their respective organizations and areas of focus within the state. Basudeb Bannerjee and Srijata Bagchi emphasized the significance of block-level meetings as platforms for collective discussion and action planning.

Judith Christiana from SaciWATERs elucidated the institution's research journey, highlighting the intricate nexus between climate change, cyclones, and declining water quality, leading to poor menstrual hygiene. She underscored the issue of period poverty exacerbated by socio-economic factors such as caste, class, and religion, advocating for comprehensive solutions.

- **Key Insights and Contributions:**

Awareness and Education: Usha Mondol from Loksabha Welfare Society emphasized the need for awareness programs and education on menstrual hygiene. Her organization's initiatives included free pad distribution, workshops on reusable cloth pads maintenance, and nutritional education to prevent anemia.

Impact of Climate Change: Himadri Sarkar Gayen from GGBK shed light on the rise in migrant labor, child trafficking, and child marriages due to climate-induced poverty. Siddharth Chatterjee from Gosaba Green College highlighted environmental challenges like salinity intrusion, groundwater depletion, and mangrove deforestation, advocating for afforestation as a mitigation measure.

Health Concerns: Samir Mondol from Manmathanagar Samay Kalyan Sangha addressed health issues like breast cancer caused by contaminated water, advocating for community-based health education initiatives.

Community Engagement: Representatives from Chhota Molla Khali Swamiji Welfare Society emphasized community engagement since 2015, focusing on climate and menstrual hygiene issues, and addressing post-childbirth health complications due to contaminated water usage.

Organizational Efforts: Gopal Das from Goonj outlined organizational initiatives such as mangrove plantation, pad distribution, and promoting organic food for better nutrition, stressing the importance of holistic approaches.

Resolutions:

- The workshop concluded with unanimous resolutions emphasizing the need for:
- Awareness programs on menstrual hygiene.
- Addressing issues related to unclean water.
- Collective action involving stakeholders at all levels.

Conclusion:

The Gosaba Block-level Multi-stakeholder Workshop served as a platform for diverse stakeholders to exchange insights, share experiences, and collectively strategize solutions to mitigate the impact of climate change on menstrual hygiene in the Sundarbans region. The resolutions formed during the workshop lay a foundation for future collaborative endeavors aimed at fostering sustainable development and resilience in the face of environmental challenges.

Participants:

S. No	Name of The Participant	Institution/Organizational Affiliation
1	Mr. Himadri Sekhar Gayen	Goranbose Gram Bikash Kendra (GGBK), Can
2	Ms. Kalpana Baidya	Chhota Molla Khali Swamije Welfare Society
3	Ms. Dipika Mondal	Chhota Molla Khali Swamije Welfare Society
4	Ms. Sasanna Sarkar	Satjelia Vivekananda Kalyan Sangha
5	Mr. Pravash Mistri	Pakhiralay Pally Unnayan Milan Sangha
6	Mr. Jugal Prasad Mandal	Shushri, Hanispur, Gosaba
7	Ms. Gopal Das	Goonj, New Delhi
8	Ms. Usha Mondal	Kousakha Welfare Society
9	Mr. Pulakesh Paramanya	Chhota Molla Khali Swamije Welfare Society
10	Ms. Lovely Kamrun Nahar Akhand	Community representatives
11	Ms. Pranavati Mondal	Asha Worker
12	Mr. Samir Mondal	Manmathanagar Samoj Kalyan Sangha
13	Ms. Puspa Mistry	Sangha
14	Mr. Siddhartha Chatterjee	Principle – Rupayan
15	Mr. Basudeb Bannerjee	Research Consultant
16	Ms. Judith Christiana	SaciWATERs
17	Ms. Srijata Bagchi	Research Intern

Gosaba Block-level Multi-stakeholder Knowledge Co-creation, Consultation, and Dissemination Workshop

Block-level Multi-stakeholder Knowledge Co-creation, Consultation, and Dissemination Workshop

20th March 2024 from 2:00 to 4:00 pm

Hotel Paradise, Madhab Nagar, Pathar Pratima.

Date: 20th March 2024

Time: 2:00 pm to 4:00 pm

Venue: Hotel Paradise, Madhab Nagar, Pathar Pratima

- **Introduction:**

The Pathar Pratima Block-level Multi-stakeholder Knowledge Co-creation, Consultation, and Dissemination Workshop held on the 20th of March 2024 convened stakeholders to address the intertwined challenges of menstrual hygiene and climate change within the Sundarbans region. Dr. Jayati Chourey, Executive Director, SaciWATERs provided the background of the workshop and shared findings from the first phase, underscoring the significance of block-level meetings in fostering collaborative efforts to address pressing issues.

- **Session Overview:**

The session commenced with stakeholders engaging in introductory discussions, setting the context for the workshop and highlighting the importance of community-driven initiatives in addressing complex challenges. The discourse revolved around the critical nexus between water quality, climate resilience, and menstrual hygiene, with stakeholders sharing insights and perspectives on sustainable interventions.

- **Key Insights and Contributions:**

Water Quality and Livelihood: The session began with the Panchayat Pradhan of Gopalnagar speaking about the dearth of taps and ongoing efforts under the Jol Sopno Prokolpo mission to provide taps to every household. He highlighted the impact of saline water on fishing practices and livelihoods. Other participants emphasized the importance of self-help groups and NGO support in implementing water treatment facilities and rainwater harvesting initiatives.

Community Empowerment: Anupam Shyamol from SSDC spoke about efforts to fix existing hand pumps and use PVC pipes in tubewell reconstruction. Prabhakar Pramanik from Rupantaran Foundation highlighted the problem of receding groundwater levels and suggested promoting organic farming.

Environmental Conservation: Debashish Samanta from DRCC emphasized the need to conserve ponds and suggested afforestation and water cleaning strategies. Arindam Haldar from SSJS stressed the importance of saving ponds to mitigate climate disasters.

Modern Agricultural Practices: Pralay Haldar from SSDC spoke about the importance of modern agricultural training to regulate groundwater usage. He also emphasized the need for functional water quality monitoring departments.

Menstrual Hygiene Awareness: Representatives from DRCSC emphasized the need for education on menstrual hygiene practices. Srabanti Mondal, Usha Rani, and Shikharani spoke about the importance of proper menstrual hygiene education and the avoidance of using contaminated pond water.

- **Resolutions:**

- The workshop concluded with concrete resolutions, including:
- Urgent implementation of water treatment facilities to improve water quality.
- Intensified awareness campaigns on menstrual hygiene and climate resilience.
- Promotion of sustainable agricultural practices to regulate groundwater usage.
- Strengthening collaboration between local government bodies, NGOs, and community groups for effective implementation of interventions.

- **Conclusion:**

The Pathar Pratima Block-level Multi-stakeholder Workshop served as a pivotal platform for stakeholders to collaborate, share insights, and strategize solutions to address the complex challenges of menstrual hygiene and climate change in the Sundarbans region. The resolutions formed during the workshop are poised to inform policy advocacy efforts and drive sustainable development initiatives within the community.

Participants:

S. No.	Name of the Participant	Institution/Organisational Affiliation
1	Mr. Arindam Haldar	South Sundarbans Janavidya Sangh, Raghunathpura, Kakdwip
2	Mr. Pravakar Pramanik	Rupantaran Foundation,22/2, Deshbandhu Road, Kolkata – 700086
3	Ms Srabanti Mondal Saru	DRCSC, 58a, Dharmatala Road, Kolkata 700042
4	Mr. Debasis Samantu	DRC Sc, 58a, Dharmatala Road, Kolkata 700042
5	Mr. Pranay Halder	Sundarban Social Development Centre, Sultanpur, Mandir Bazar
6	Mr Anupam Shyamal	Sundarban Social Development Centre, Sultanpur, Mandir Bazar
7	Ms. Mamata Pakhira	SPAN (Society For People Awareness)
8	Ms. Radha Rani Jana	Community Representative
9	Mr. Usha Rani Patra Bhunia	Community Representative
10	Ms. Dipali Bhunia	Community Representative
11	Ms. Shyamali Das	Community Representative
12	Ms. Sikharani Paul	SPAN (Society for People Awareness)
13	Mr. Mangaldeep Das	Community Representative
14.	Dr. Jayati Chourey	SaciWATERs
15.	Mr. Basudeb Bannerjee	Research Consultant
16	Ms.Judith Christiana	SaciWATERs
17	Ms. Srijata Bagchi	Research Intern

Pathar Pratima Block-level Multi-stakeholder Knowledge Co-creation, Consultation, and Dissemination Workshop

Meeting with the General Duty Medical Officer at Madhabnagar Rural Hospital in the Pathar Pratima block

Dr. Saheed Parvez, the General Duty Medical Officer, Madhabnagar Rural Hospital at Pathar Pratima block, shared, *"The majority of patients visiting the hospital suffer from hypertension, hypothyroidism, dermatological issues, diarrhea, and various stomach ailments, along with UTI and reproductive health-related issues. Approximately 60% of patients visiting the hospital experience dermatological problems, genital and urinary tract infections due to the usage of contaminated water with higher salinity. Many women who come to the hospital for delivery are affected by genital infections, increasing the risk of infections for the unborn child*.

He also added that women generally do not prioritize their health. For instance, they visit our block-level hospital when they come to this place for the weekly local market. They mostly rely on quack doctors in villages until the case becomes severe due to mismanagement of the health problem."

Meeting with the General Duty Medical Officer at Gosaba Rural Hospital, Gosaba block

"There are growing cases of white discharge, recurring UTIs, irregular bleeding, and cysts among women aged above 30," expressed Dr. Pallab Mondal, the General Duty Medical Officer at Gosaba Rural Hospital. "The lack of advanced diagnostic facilities makes diagnosis and treatment challenging, often necessitating referrals to distant, larger government hospitals. Despite advising against pond bathing, practical constraints make it unavoidable for many women in the region. Dr. Mondal emphasizes the practical constraints that make pond bathing unavoidable for many women in the region, contributing to the prevalence of these health issues. He discusses common patient demographics and treatments provided, emphasizing the significance of hygiene at home in the absence of adequate access to tubewell water. Additionally, he notes that husbands typically do not accompany older female patients to the hospital due to work commitments outside the area, primarily in cities like Hyderabad, Delhi, or Kolkata.

2.3 Awareness campaigns in 4 Villages:

Awareness Campaign in Durbachati, Pathar Pratima

21st March 2024

A mobilizing rally marked the inception of an awareness campaign in Durbachati on March 21st, 2024, signaling the community's engagement with critical issues surrounding menstrual hygiene and climate resilience. Following the rally, substantive group discussions provided a platform for women to articulate their concerns and propose grassroots solutions aimed at mitigating the adversities wrought by climate disasters.

Participants lamented the escalating salinity levels of local water bodies, attributing this phenomenon to the ingress of saltwater during cyclones and floods, which subsequently contaminates village ponds and precipitates the demise of fish populations. This ecological degradation not only imperils livelihoods but also compounds the challenges faced by women during menstruation. Women actively involved in fishing activities recounted the ordeal of navigating through tainted waters sans protective measures, thus exposing themselves to a gamut of health risks, including irritation, infection, and assorted uterine ailments.

Conversations further illuminated entrenched sociocultural norms underpinning menstrual hygiene practices, which perpetuate stigma and impede access to sanitary resources. Women disclosed being indoctrinated from a tender age to conceal their sanitary napkins, unwittingly fostering unhygienic storage practices that exacerbate health hazards. Moreover, a conspicuous lack of awareness regarding the significance of sun-drying cloth pads was underscored, with participants conceding the consequent proliferation of harmful microorganisms and bacteria.

In the face of these multifaceted challenges, there emerged a palpable consensus on the imperative for comprehensive water treatment infrastructure and community-wide educational initiatives. Participants underscored the pivotal role of targeted awareness campaigns in dispelling prevalent misconceptions and fostering informed decision-making vis-à-vis menstrual hygiene practices. Through advocacy for pragmatic solutions rooted in community empowerment, the campaign laid the groundwork for resilience-building endeavors geared toward safeguarding the health and well-being of women in Durbachati.

The awareness campaign in Durbachati served as a catalyst for meaningful discourse and concerted action in confronting the intersecting challenges of menstrual hygiene and climate resilience. By amplifying the voices of women and fostering dialogue, the campaign engendered a collective resolve to chart a path toward a healthier, more resilient future.


"জলবায়ু পরিবর্তন,
WASH, প্রজনন এবং
মাসিক স্বাস্থ্য
সচেতনতা প্রচার
অভিযান"
Climate Change, WASH,
Reproductive& Menstrual Wellness
Awareness Campaign
Sundarbans

Awareness Campaign in Mahendra Nagar, Pathar Pratima

22nd March 2024

The awareness campaign conducted in Mahendra Nagar on March 22nd, 2024, provided a platform for discussing pertinent issues surrounding menstrual hygiene and the effects of climate change on women's health practices. The discussions, which included group dialogues and poster writing activities, facilitated a comprehensive understanding of the challenges faced by women in the community.

Participants highlighted the detrimental impact of the changing climate, particularly the increasing salinity of water sources, on menstrual hygiene practices. The reliance on contaminated water for cleaning sanitary pads emerged as a significant concern, contributing to heightened health risks among women. Notably, there was a prevailing discourse on the rising incidence of tumors and uterine cancers, shedding light on the urgent need for interventions to mitigate these health disparities.

Shikha, a prominent advocate within the community, emphasized the importance of destigmatizing menstruation and promoting modern hygiene practices. Her advocacy for the proper washing of menstrual cloth with clean water under sunlight challenged entrenched cultural norms, advocating for a paradigm shift towards healthier practices.

The testimonial of Jayita Giri, a woman who underwent surgical treatment for uterine tumors, offered poignant insight into the personal toll of these health challenges. Jayita's account underscored the financial burdens and emotional strain experienced by individuals grappling with reproductive health issues, highlighting the need for comprehensive support systems.

Despite the abundance of scientific evidence linking health outcomes to environmental factors, there persisted a notable adherence to conservative beliefs among certain segments of the community. This generational knowledge gap underscored the importance of targeted educational initiatives to foster a nuanced understanding of menstrual hygiene and its implications for women's health.

The discussions culminated in a consensus on the urgent need for water treatment facilities and community-wide awareness programs. Participants acknowledged the role of grassroots advocacy in effecting tangible change and expressed a collective commitment to addressing the intersecting challenges of menstrual hygiene and climate change.

The awareness campaign in Mahendra Nagar served as a catalyst for meaningful dialogue and collective action towards promoting women's health and well-being in the face of evolving environmental challenges.


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সচেতনতা প্রচার
অভিযান"
Climate Change, WASH,
Reproductive & Menstrual Wellness
Awareness Campaign
Sundarbans

Awareness Campaign in Hentalbari, Gosaba

23rd March 2024

The awareness campaign conducted in Hentalbari on March 23rd, 2024, was characterized by a group discussion and an awareness program focused on menstrual hygiene. The session provided an opportunity for women to articulate their perspectives on menstrual health, delving into the challenges posed by sociocultural norms and environmental factors, particularly climate change.

Participants engaged in candid dialogue, acknowledging the enduring stigma surrounding menstruation, which often impedes open discourse even within marital relationships. Recollections of past practices, such as the use of cloth and leaves as sanitary napkins, underscored the historical evolution of hygiene practices within the community.

Central to the discussion was the indispensable role played by frontline health workers, notably Asha workers, in providing subsidized sanitary products to adolescent girls. Testimonials from community members highlighted the multifaceted health challenges faced by women, including irregular periods and heavy bleeding attributed to waterborne infections. The inadequacy of accessible healthcare facilities in the village compounded these challenges, necessitating journeys to distant healthcare centers.

The narratives of participants, particularly Sadhana's account of grappling with urinary tract infections (UTIs) amidst financial constraints, underscored the urgent need for accessible healthcare services. Similarly, reflections on the absence of emotional support for menstruating daughters underscored the importance of holistic support structures within families.

Collectively, participants advocated for a comprehensive approach to address the identified challenges, emphasizing the importance of heightened awareness, improved water treatment facilities, and enhanced healthcare infrastructure. Their recommendations underscored the need for systemic interventions to cultivate a supportive environment conducive to menstrual health and well-being.

The awareness campaign in Hentalbari served as a catalyst for dialogue and advocacy, illuminating the intricate interplay of menstrual hygiene, sociocultural norms, and environmental factors. By amplifying women's voices and advocating for systemic change, the campaign laid the groundwork for transformative interventions aimed at fostering holistic health and well-being within the community.


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Awareness Campaign in Chandipur, Gosaba

March 24th, 2024

An important group discussion convened in Chandipur on March 24th, 2024, to deliberate on issues surrounding menstrual hygiene and potential solutions. The session provided a forum for empirical discourse, allowing participants to articulate prevalent concerns and identify evidence-based strategies for mitigation.

Participants underscored the acute scarcity of water treatment infrastructure in the village, emphasizing the adverse repercussions of heightened salinity levels on local water reservoirs. The resultant decline in fish populations and water contamination emerged as a significant health hazard, exacerbating the prevalence of diarrheal illnesses among community members. Additionally, the absence of governmental healthcare provisions and disaster relief facilities during climate-induced calamities compounded the community's vulnerabilities, necessitating urgent remedial measures.

The discussion revealed the multifaceted challenges encountered by women, notably the lack of access to affordable sanitary products and economic opportunities for self-sufficiency. Participants articulated concerns regarding health repercussions stemming from the consumption of contaminated pond water, including persistent leucorrhea and heightened susceptibility to vector-borne diseases such as malaria and dengue fever.

Kuheli highlighted the proactive engagement of Asha workers in water quality surveillance, utilizing standardized testing protocols to expedite contamination identification. She elucidated the seasonal variations in water levels, which exacerbate vector breeding and disease transmission. Nazma echoed community sentiments, advocating for universal access to sanitary products and essential amenities, particularly in the aftermath of natural disasters such as cyclones.

Collectively, participants advocated for a holistic approach to address identified challenges, stressing the importance of targeted awareness campaigns, enhanced water infrastructure, and equitable resource distribution. Their recommendations underscored the imperative of evidence-informed interventions to empower women and fortify community resilience.

The group discussion in Chandipur served as a catalyst for evidence-based problem-solving and advocacy, elucidating the intricate nexus of menstrual hygiene and environmental sustainability. By amplifying community voices and advocating for empirically-driven interventions, the session laid the groundwork for pragmatic action toward fostering a healthier, more resilient community.


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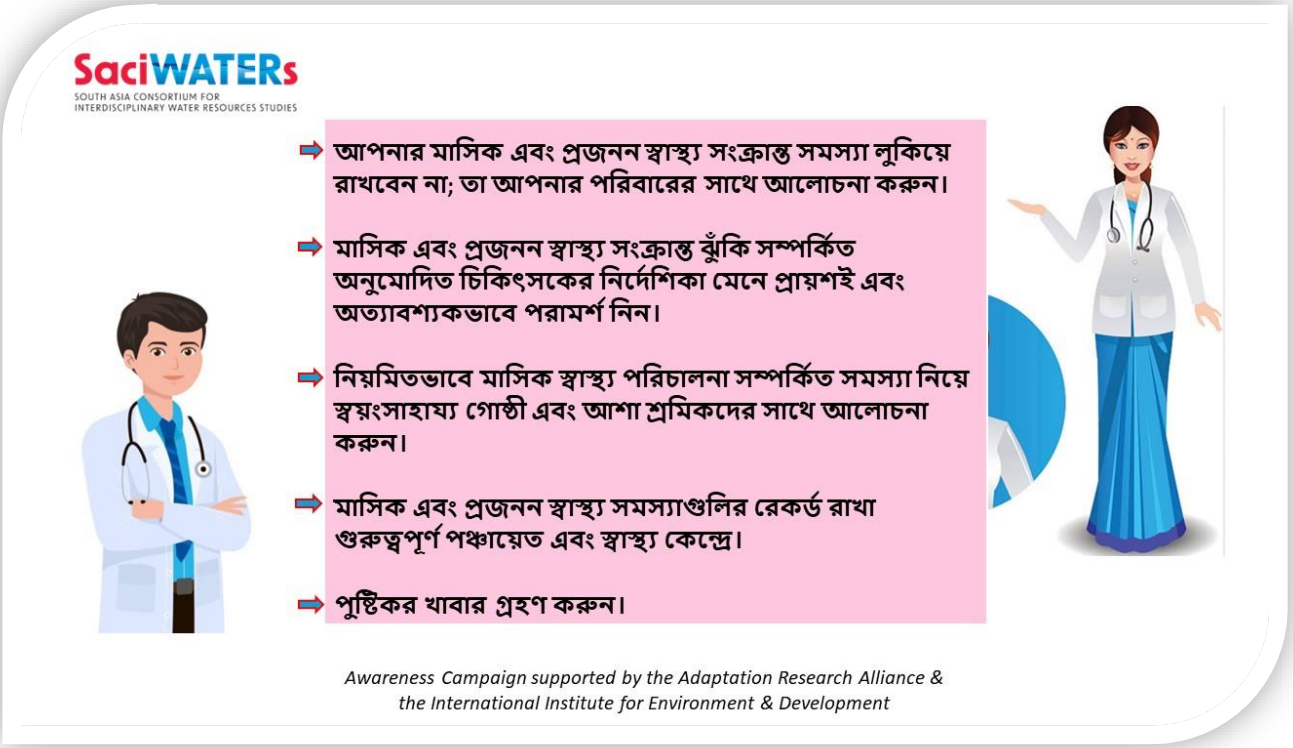
Awareness Campaign
Sundarban

Digital Information Education Communication (IEC) Materials



1. Do not hide your menstrual and reproductive health-related issues; discuss them with your family.

2. Consult a certified medical professional periodically and urgently when suffering from menstrual and reproductive health-related risks.

3. Periodically discuss problems related to menstrual hygiene management in Self-Help Groups and with ASHA workers.

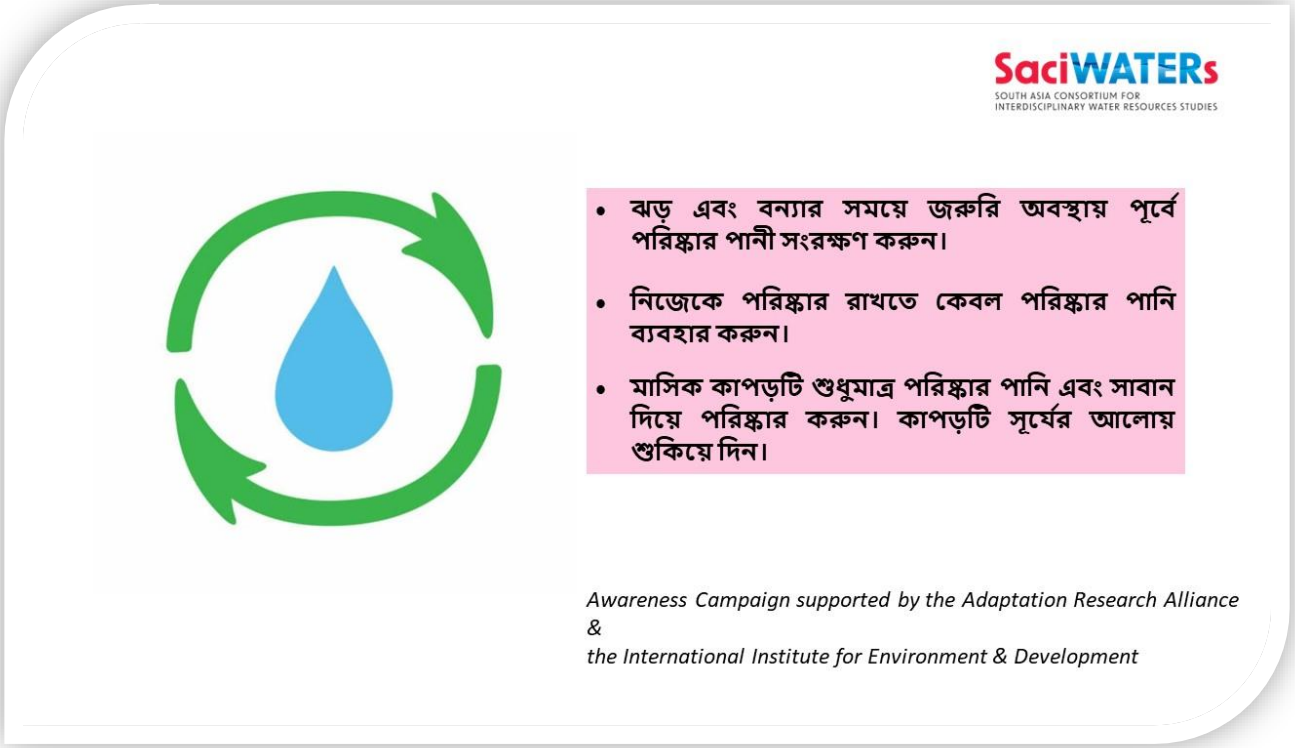
4. It is crucial to maintain records of menstrual and reproductive health problems in Panchayats and health centers.

5. Consume nutritious food.

Awareness Campaign supported by the Adaptation Research Alliance & the *International Institute for Environment & Development*

1. Do not pollute. Dispose of menstrual products in a specific bin. Prefer eco-friendly menstrual products.
2. Keep toilets clean in flood centers. Keep toilets clean at home. Use bleaching powder and phenyl to clean toilets.
3. Do not take a bath inside ponds during the menstrual period.
4. Keep your rivers and ponds clean.

Awareness Campaign supported by the Adaptation Research Alliance & the *International Institute for Environment & Development*



- Store clean drinking water beforehand in case of emergencies during cyclones and floods.
- Use only clean water to keep yourself clean.
- Clean menstrual cloth only with clean water and soap. Dry the cloth in the sun.

Awareness Campaign supported by the Adaptation Research Alliance & the *International Institute for Environment & Development*

2.4 Documentary Production

The shooting for the documentary was conducted from March 21st to March 24th in the villages of Durbachati and Mahendra Nagar of Pathar Pratima block, as well as Hetalbari and Chandipur of Gosaba block. This timeframe allowed the documentary team to capture a wide range of footage, including awareness campaigns, community discussions, traditional practices, and interviews with local residents. By filming in these diverse locations, the documentary aims to present a comprehensive perspective on the challenges faced by the Sundarbans region and the proposed solutions. The post-production phase is underway, which includes editing, sound design, and adding visual effects to create a polished and impactful final product.

This documentary is in line with the project's objectives and will act as a powerful advocacy tool, shedding light on the community's journey toward sustainable solutions. It encompasses both phases of the microgrant project, highlighting the progress made and the ongoing efforts to address menstrual health challenges induced by climate change in the Sundarbans region.

2.5 Exposure Trip and Training on Manufacturing of Sanitary Napkins and Biodegradable Alternatives

On the day of 26th March 2024, SaciWATERs in collaboration with Washonomics Fulcrum Pvt. Ltd successfully conducted a one-day programme on Exposure trip and training on manufacturing of sanitary napkins and biodegradable alternatives with a focus on entrepreneurship development. Washonomics Fulcrum Pvt. Ltd. is a Kolkata-based organization dedicated for providing support and service for consultancy, training, advocacy, software and hardware support in the areas of Menstrual Hygiene and Hygiene (MHH) and Waste Management.

Apart from SaciWATERs team, the following executives and team members from Washonomics Fulcrum Pvt. Ltd were present in the programme.

1. Mr. Subhankar Bhattacharya- Director WFPL and Programme Head.
2. Mrs. Baishally Bhattacharya- Director WFPL and HR Head
3. Mr. Debashis Ray- Sr. Executive- Public Relations and Field Programme.
4. Mr. Akash Sk.- Admin Executive.
5. Mr. Sahajan Mondal- Head of Technical Team.
6. Mr. Irfan Ahmed- Field Team member.

Machinery and Equipment for Sanitary Napkin Production

- **For Wings-Type Sanitary Napkin**

- Automatic Sealing, Embossing and Cutting Machine Which Seals Five Layers: Pla (Corn-Based) Top Sheet, Wood / Jute / Banana Pulp Mixed With Organic Absorbent Enhancing Material, Corn Plastic.
- Uv Sterilization Machine
- Automatic Sealing Machine
- FULCRUM has supplied sanitary napkin manufacturing machines to women SHGs in various districts of West Bengal. Some groups are manufacturing compostable maternity-type sanitary napkins.
- Besides, FULCRUM has initiated a research project in collaboration with ICAR-NINFET (Indian Council for Agricultural Research – National Institute of Natural Fiber Engineering and Technology), Govt of India to manufacture compostable sanitary napkins.

- **For Maternity Type Napkin**

- Pulveriser For Wood, Jute And Banana Pulp
- Pressing Machine – Pneumatic Type
- Cotton Cutting Machine
- U V. Sterilization Machine
- Automatic Sealing Machine

The participants were women members of Self-Help Groups (SHGs) from various age groups hailing from village communities in Pathar Pratima and Gosaba blocks of the Sundarbans. The program was divided into three parts. It commenced with an introduction and ice-breaking session to foster a comfortable atmosphere for all attendees. Following this, Mr. Subhankar Bhattacharya, in his opening remarks, emphasized the significance of Menstrual Health and Hygiene (MHH) and highlighted the potential livelihood development opportunities associated with MHH initiatives.

Mr. Debashis Ray then continued the session. At the beginning, he explained in simple terms what menstruation is and what happens inside the body during periods. During discussions and interactions with participants, various important facts were discussed and explained. Participants shared their current practices during periods, including the use of napkins/cloths and any associated health issues. Different taboos surrounding menstruation were discussed, with Mr. Ray explaining how these taboos were upheld by women in earlier generations and how they can be overcome. Proper health and hygiene practices were explained, emphasizing practices that everyone should follow and maintain. The discussion then shifted to the proper disposal of used napkins, with participants sharing their current disposal practices.

Mr. Ray explained the negative impact of these disposal methods on health, hygiene, and the environment, and introduced the proper disposal process, including the incineration process and the use of incinerators.

The last, but very important, part of the session focused on the scope of livelihood and entrepreneurship development through setting up a sanitary napkin manufacturing unit. During these discussions, Mr. Ray explained the production process, the use of different raw materials and their purposes, and the importance of quality control to capture and sustain market demand.

Office administration, stock maintenance, distribution, income expenditures, profit calculation, and other related matters were discussed. Marketing and publicity strategies were thoroughly discussed, including market development, survival strategies, and various methods for selling products. The role of effective packaging and publicity was explained, along with ideas for publicity mentioned by participants. Mr. Ray also explained how mobile and social media can be utilized for product marketing, concluding the first part of the program.

After this, Mr. Subhankar Bhattacharya started the second part of the program – exposure to biodegradable alternatives, which was also the main focus. At the beginning, Mr. Bhattacharya explained to the participants the different raw materials used to produce sanitary napkins, including their names, functions, and specialties, in an easy-to-understand manner.

Mr. Irfan Ahmed showed them different raw materials to provide hands-on exposure. Then, he introduced biodegradable materials, including their sources, processing methods, and benefits. The use of jute fibers and banana fibers for napkin production, along with their economic and environmental benefits, were thoroughly explained. The concept of 'Organic SAP' was discussed, emphasizing its biodegradable and compostable nature compared to traditional super absorbent polymer. Bioplastics were also introduced, highlighting their potential for napkin manufacturing and other packaging purposes. In the concluding part of the session, Mr. Bhattacharya discussed the societal and environmental benefits of using these biodegradable materials for napkins, diapers, and packaging. After the conclusion of the second session, the program moved to the third session.

The third session was a technical session, providing participants with hands-on exposure to production using various types of machinery. Participants were divided into two groups, with one participant from each group selected as a group leader. Mr. Sahajan Mondal, head of the technical team, conducted this part of the program with assistance from other technical staff. Two sets of machinery were arranged for the session: one for the production of sanitary napkins using semi-automatic equipment, and the other for the production of maternity napkins using a combination of semi-automatic and manual machinery. Initially, Mr. Mondal explained the function and operation of the machines, followed by a demonstration of raw material arrangements, fittings, and alignment of different parts to each group of participants. Subsequently, trial runs were conducted with the machines, and samples were produced. This process was carried out with both sets of machines, and samples were shown to both groups. Participants actively engaged in the process, demonstrating keen interest throughout. At the end of the session, they were provided with samples as well.

At the conclusion of this session, Mr. Mondal also emphasized safety measures during production and provided guidelines regarding the dos and don'ts of production practices.

Following the completion of the day's main program, Dr. Jayati Chourey, Mr. Subhankar Bhattacharya and Mrs. Baishally Bhattarchrya facilitated all the participants with a 'Certificate for Participation. Finally, a group photo session was conducted in front of the factory. Subsequently, the SaciWATERs team and Fulcrum team extended their gratitude to all present and formally announced the end of the program.

Some key points highlighted during the discussion were:

- The majority of participants identified family members, especially for married women, as significant barriers to menstrual health management. Other barriers mentioned included political challenges and a lack of cooperation from local administration.
- Participants also raised concerns about the lack of transportation in remote island areas, hindering access to essential resources.

- Questions were raised regarding marketing strategies, market development, and strategies for competing and surviving in the market.
- Participants expressed concerns about various health hazards during menstruation and sought advice on overcoming these challenges effectively.

S.No.	Trainee's Name	Village	Block
1	Durga Bhunia	Mahendranagar	Pathar Pratima
2	Sulata Das	Mahendranagar	Pathar Pratima
3	Susama Sardar	Mahendranagar	Pathar Pratima
4	Dipika Mondal	Mahendranagar	Pathar Pratima
5	Sandhya Mondal	Hetalbari	Hetalbari
6	Chandana Mondal	Hetalbari	Gosaba
7	Ashima Mistry	Gosaba	Gosaba
8	Sandhya Jana Maity	Mahendranagar	Pathar Pratima
9	Jayanti Sardar	Hetalbari	Gosaba
10	Piyali Majumdar/Bhattacharya	Gosaba	Gosaba
11	Najma Sardar	Chandipur	Gosaba
12	Aparna Mondal	Chandipur	Gosaba
13	Musalma Sardar	Chandipur	Gosaba
14	Lovely Kamrun Nahar Akhand	Chandipur	Gosaba
15	Dipali Bhunia	Mahendranagar	Pathar Pratima


NOMICS FULCRUM PVT. LTD. KOLKATA


PUMA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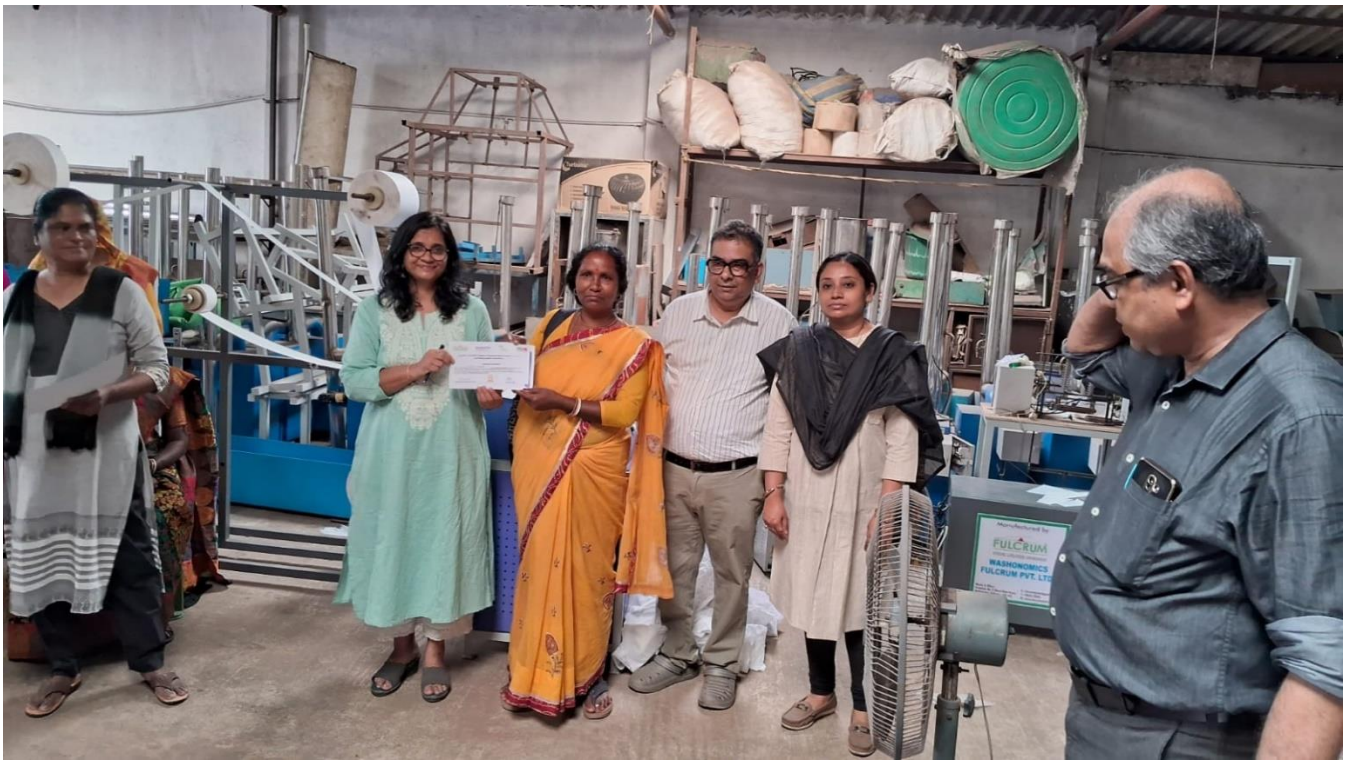
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ISO:9001:2015 CERTIFIED

3. Moving Forward:

The way forward involves a multi-faceted approach aimed at building resilience for the women of Sundarbans. Addressing the intertwined challenges of climate change and menstrual & reproductive health in the Sundarbans demands concerted effort. Central to this is recognizing the critical role of water quality, the root cause of many health issues faced by women in the region. Furthermore, there is a pressing need for further scientific exploration to generate more evidence and inform evidence-based interventions. Moving forward, collaborative action integrating health and climate responses is imperative. This entails mainstreaming menstrual and reproductive health, ensuring gender-responsive adaptation, and empowering women as active decision-makers. Awareness creation, innovative & cost-effective technologies for water quality improvement, and community-based solutions are essential. Collective action at all levels, including implementation of policies and on-the-ground interventions, is vital to build resilience and foster a sustainable future. Immediate, inclusive policies and strategies are needed to drive change and safeguard the well-being of women in the Sundarbans. Last but not least, we must recognize the urgency of the situation and understand that further delay is not an option. Each passing day without action exacerbates their suffering and vulnerabilities.

Specific Recommended Actions:

- Conduct further scientific exploration and clinical studies to generate evidence and inform evidence-based interventions for addressing the region's specific women's health challenges, complementing the insights gained from the present study. While the present study offers valuable insights by bringing out perceptions and perspectives of key stakeholders, a clinical study is essential to delve deeper into understanding the intricacies of health issues in the Sundarbans.

  The lack of available data concerning women's menstrual and reproductive health-related issues presents a considerable challenge. Training and engaging women's self-help groups in the maintenance of health records at the village level can offer valuable insights into the severity of these issues and enable targeted interventions.

- Awareness creation: Awareness is crucial because it enables communities to understand the risks and challenges, they face, empowering them to make informed decisions and take proactive measures.

- Mainstreaming menstrual and reproductive health in healthcare and climate change adaptation strategies is essential for promoting gender equality and enhancing community resilience. By integrating menstrual hygiene management into primary healthcare services,

promoting awareness, ensuring access to affordable hygiene products, and incorporating gender-responsive approaches into climate adaptation plans, policymakers and practitioners can address the specific needs of women and girls in the Sundarbans. This holistic approach not only improves women's health but also strengthens communities' ability to adapt to the impacts of climate change while promoting gender equity and social inclusion.

- Gender-responsive policies and adaptation strategies are essential for addressing the unique needs and vulnerabilities of women in the Sundarbans region. These policies aim to promote gender equality, empower women, and enhance their resilience to climate change impacts by promoting women's capacity building, access to resources, financial services, and social protection mechanisms.

- Research and Innovation: Encourage innovation in adaptation strategies, including the development of low-cost technologies and community-based solutions.

- Community empowerment & capacity building: Empower women through education, skills training, and leadership opportunities. Encourage their active participation in decision-making processes related to climate adaptation and disaster preparedness. Provide training and capacity-building programs to enhance communities' ability to cope with climate-related risks. This includes education on sustainable agriculture practices, disaster response strategies, and health awareness.

- Access to Resources: Ensure equitable access to resources such as clean water, healthcare facilities, and livelihood opportunities. Addressing socioeconomic disparities is essential for enhancing resilience among marginalized communities.

- Climate-Resilient Infrastructure: Invest in climate-resilient infrastructure and technologies to withstand environmental challenges such as flooding and salinity intrusion. Implement nature-based solutions like mangrove restoration to provide natural protection against disasters.

- Partnerships and Collaboration: Foster partnerships between government agencies, NGOs, academia, and local communities to coordinate efforts and leverage resources effectively. Collaborative approaches ensure holistic and sustainable solutions to complex challenges.

By adopting these approaches, we can work towards building a more resilient and equitable future for the women of Sundarbans, where they are empowered to thrive despite the challenges posed by climate change.

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In the radiant smiles of Hetalbari's fisherwomen, hope shines for a safer tomorrow!

About SaciWATERs

The South Asia Consortium for Interdisciplinary Water Resources Studies (SaciWATERs) is a Hyderabad-based non-profit organization. Since its establishment in 2002, it has been dedicated to fostering water-secure and climate-resilient ecosystems and communities. SaciWATERs achieves this through action research, education and capacity building, grassroots-level implementation, and supporting networks for collaborative actions and policy advocacy.

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