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WASH Field Note FN/70/2021

Learning from The Disaster Capital of India: Responding to Cyclone Fani with Holistic WASH Programming

SUMMARY

On 3 May 2019, Cyclone Fani made landfall in Puri district, in Odisha State, India. More than 1 million homes were destroyed, and approximately 16.5 million people were affected. Preliminary figures by the government estimated the damages and loss to more than Rs.12,000 crores (over USD1.6 billion).

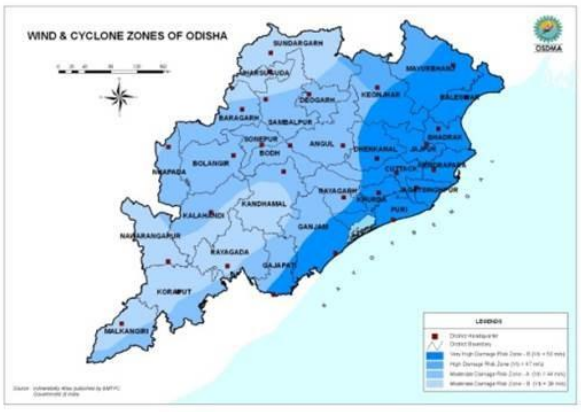
The UNICEF Field Office (FO) in Odisha, as part of their humanitarian assistance programme in the State, supported the Panchayati Raj and Drinking Water Department in restoring access to safe drinking water for about 250.00 affected individuals. Key health and hygiene messages were promoted to more than 25,000 people in 20 villages in Kanas block, and 1,000 hygiene kits were distributed to the affected households. To ensure that proper sanitation and hygiene practices were maintained in the affected communities, 400 masons were trained to repair and retrofit damaged toilets, over 240 hand-pump tube wells were tested and chlorinated, and more than 600 adolescent girls were sensitized on safe menstrual hygiene management (MHM). The WASH section collaborated with other UNICEF departments such as Nutrition and Communication for Development (C4D) to deliver a holistic response.

Continuous advocacy with the Government to make WASH services sustainable and disaster resilient, and community mobilization for repairing and retrofitting of toilets, are key activities after the immediate response. The challenges encountered, both in the immediate response phase and in the transition to recovery, are being documented to increase resilience and capacity to respond to future emergencies.

Background

The State of Odisha is situated in the eastern part of India covering an area of 155,707 km^2 with a coastline of 480 kilometers. The State is divided into 30 districts which are further subdivided into 314 blocks (a district sub-division for the purpose of rural development and planning) and 114 urban local bodies (ULB). The State is vulnerable to multiple natural hazards due to its sub-tropical climate and its geographic positioning along the shore. Although the coastline of Odisha is only about 17% of the 480 km long Indian east coast, 14 districts of the state are most vulnerable to cyclonic storms. While the coastal districts of Odisha are exposed to floods and cyclones, districts in western Odisha are prone to acute droughts, and a large section of the State is also prone to earthquakes.

Figure 1: Map of cyclone zones of Odisha



The history of disasters substantiates the fact that about 80% of the State is prone to one or more forms of natural disasters. Together they cause damage to local communities, to their health and wellbeing, as well as destruction of WASH and educational infrastructure, contributing to setbacks in economic growth.

KEY FACTS ON FANI

- *16.5 Million people affected in 14 districts.*
- *16,659 villages affected*
- *556,761 houses damaged*
- *Districts affected: Angul, Balasore, Bhadrak, Cuttack, Dhenkanal, Ganjam, Jagatsinghpur, Jajpur, Kendrapara, Keonjhar, Khordha, Mayurbhanj, Nayagarh and Puri*

On the 3rd of May 2019, Cyclone Fani made landfall on the coast of Odisha, India, triggering heavy rainfall and winds of up to 175-185 km/hour. It is the strongest cyclonic storm to hit India in nearly two decades.

Situation Analysis

In the hours prior to the cyclone, nearly 1.2 million people were evacuated from vulnerable and low-lying areas with evacuees being accommodated in over 4,000 shelters, including 880 specially designed cyclone centres. 14 districts were affected by Fani namely: Angul, Balasore, Bhadrak, Cuttack, Dhenkanal, Ganjam, Jagatsinghpur, Jajpur, Kendrapara, Keonjhar, Khordha, Mayurbhanj, Nayagarh and Puri. According to the Government sources, as of 9th May, 159 blocks (administrative units), 53 ULBs, and 16,659 villages were affected, with a total population of 15,093,513 individuals. Furthermore, huge damage was reported to public infrastructure including roads, telecom and power transmission towers, health facilities and schools. Crops were heavily damaged in all affected districts of Odisha as well as fishing boats and nets, leading to loss of livelihoods for people dependent on agriculture and fishing. The cyclone further had a devastating impact on the main water sources in the affected areas. Coping mechanisms for emergencies were strong, but a key challenge was to ensure that the most vulnerable children and women were reached with a timely response.

Drinking water

Villages normally depend on hand pumps, open wells, and piped water supply for drinking water needs. Most piped water supply was electric – rendering drinking water inaccessible due to power cuts. Some piped water supply infrastructure also suffered damages to structures and pipelines.

Although cyclone Fani did not bring serious rainfall, there were reports of damage to WASH facilities and systems, and there was apprehension about the potential contamination of drinking water sources. Therefore, the usage of contaminated waters for bathing, cleaning kitchen utensils and other cleaning needs became a major concern.

Tube wells remained mostly functional and were not affected or contaminated. However due to the disruption of piped water supply, women and girls were waiting in long queues to fetch water.

Before cyclone Fani, good access to water points had been reported by all people including people with disabilities/schedule tribes/schedule castes/minorities. No cases of discrimination were found in the assessed villages.

In return after cycle Fani, short-term water scarcity was found in almost all villages. This was mainly due to the disruption of power leading to non-functional piped water supply systems. Water tankers were deployed to supply water in the rural areas as a temporary measure

Some coastal villages in Brahmagiri and Gopa blocks in Puri district and Balikuda block of Jagatsinghpur district were affected by saline intrusion.

Sanitation and Hygiene

Post cyclone Fani, open defecation practices increased in the affected villages due to damaged infrastructure. In Puri district, open defecation was practiced by approximately 60% of the population pre-cyclone. With the occurrence of cyclone Fani, people who did have access to toilets were no longer able to use them due to the damage the infrastructure sustained.

SANITATION AND HYGIENE KEY POINTS

- *Immediate toilet repairs or construction of temporary toilets.*
- *Cleaning and sanitization of affected ponds, wells, and water bodies.*
- *Special awareness sessions on hygiene and safe sanitation, especially with children, adolescent girls, and women.*
- *Supply of hygiene kits, including sanitary napkins, soap, toothbrush etc.*

All ponds in villages of Puri district and most ponds in other districts were contaminated with decomposable debris, affecting the quality of the ponds and other water bodies.

KEY POINTS TO BE CONSIDERED FOR DRINKING WATER RESPONSE

- *Alternative energy sources should be found to run piped water supply systems. Temporary solutions, such as mobile generators, may be used to pump and supply water.*
- *Water tanker services to be provided in rural areas.*
- *Chlorination of contaminated tube wells and drinking water sources.*
- *Repairing of tube wells and other drinking water sources.*
- *Supply of water purification tablets or other suitable water disinfectants.*
- *Provision of water at the shelters and to households, who have water shortages and llost water storage containers.*
- *Long term measures to reduce saline intrusion along the coast.*

Women reported that they were using sanitary napkins pre-disaster, however, in the aftermath access to the market was cut off and there was no supply of sanitary napkins from the accredited

social health activists (ASHAs) and aganwadi workers either. Women, therefore, reverted to old habits and began using household waste cloth material. Further, due to insufficient and interrupted water supply, women and girls were unable to wash and dry their sanitary clothes, posing increased health risks.

Post Disaster Needs Assessment (PDNA)

The UNICEF Field Office (FO) in Odisha supported the Post Disaster Needs Assessment (PDNA) once the immediate emergency relief

phase was over. The PDNA was conducted under the overall leadership of the Odisha State Disaster Management Authority (OSDMA). UNICEF carried out the PDNA for the rural and urban WASH sector.

The main objectives of the PDNA were to: (i) assess the damage and losses caused by the cyclone, (ii) estimate the overall impact of Fani on the socio-economic development of the WASH sector in the State and communities; (iii) develop a recovery and reconstruction action plan with short, medium- and long-term recovery and reconstruction goals. The overall objective was to ensure resilient WASH services in Odisha, especially given Odisha's vulnerability to disasters.

Table 1: PDNA summary

Area	Needs
Water Supply (rural)	Cyclone Fani affected about 49% (1,088) of a total of 2,229 piped water schemes and almost 10 million people in the rural areas of the seven most affected districts. Damage to infrastructure was mainly caused by uprooted trees falling on pump houses, panels, or compound walls and (mainly) bringing down the low-tension substations and transformers within or nearby the premises.
Water Supply (urban)	The cyclone caused much damage to water supply schemes in different ULBs, with 337 urban water systems being affected. The damage was predominantly to peripheral structures, such as boundary walls. In addition, disruption of power supply resulted in the shutdown of piped water systems, requiring quick repairs and alternative water supply until power was restored.
HH toilets (Rural)	Damage to individual household toilets has been assessed only in three districts (Bhadrak, Khurda and Puri), out of the seven districts where the District Level Needs Assessment (DLNA) was conducted. Figures indicate that about 18.9% of the total 534,125 assessed toilets were partially damaged and 1.4% completely damaged. Damage was greater in Puri, where 36.43% of the total toilets surveyed were partially damaged and 2.79% completely damaged
HH toilets (urban)	Toilets were found to have been totally damaged along with the house, or partially damaged. Damage was assessed based on the DLNA report of the housing sector, which describes houses that are completely damaged.
Sewerage Systems (Urban)	Even though sewers were blocked by debris, access to latrines was not compromised as the debris was cleared from pits/sewer lines within two to three days. About 51,973 households are connected to the sewage treatment plants located in the three cities Puri, Bhubaneswar and Cuttack. Puris plant suffered severe damage to its sludge drying sheds. No other major damage was reported to piped sewage treatment systems. The other two plants suffered damage to pumping stations and adjoining office buildings.

Story

The UNICEF Odisha FO responded in the cyclone Fani affected areas by focusing on the WASH and nutrition sector. The FO, as per its mandate, responded to the Fani cyclone by strengthening the Government response and recovery capacity, and building resilience. UNICEF supported 20 villages, in partnership with Oxfam, and worked both upstream (policy, advocacy and budgetary issues) and downstream (community level) to achieve its goals.

Response Strategy and Interventions

1. Strengthening Government and partner capacity:

Strengthen the disaster and complex emergency response capacity of the Panchayati Raj (PR) and Drinking Water (DW) Department through support with supplies, human resources, and coordination. UNICEF responded jointly with the State Government and civil society organizations to deliver humanitarian assistance. The approach was aimed at building partner capacity, who would build the capacity of communities. Engagement with partners resulted in an improved local capacity to respond to future disasters.

Photo 1a: Essential WASH Supplies prepositioned by the Government

2.Supplies for Cyclone Fani:

Since WASH services were disrupted during the cyclone, replacement supplies and equipment were urgently needed. The Government of Odisha was well prepared with all supplies and equipment to respond. However, as per the request of the Government, UNICEF quickly mobilized additional critical supplies such as 5 Generators, 300 High Density Polyethylene (HDPE) tanks and 1000 Hygiene Kits

Photo 1b: Essential WASH Supplies prepositioned by the Government

3.Integrating WASH development programming beyond humanitarian assistance:

UNICEF followed up its humanitarian assistance by revisiting the communities to reinforce WASH messaging and support building back WASH infrastructure through community mobilization. The interventions aimed at improving recovery and strengthening resilient development reducing future vulnerabilities. This included the rebuilding of toilets with stronger roofs and superstructures to withstand any future disaster.

Photo 2. WASH service delivery

The process of response and recovery

1.WASH mapping: Understanding the villages

Social and WASH mapping and information related to key functionaries of the village such as the Sarapanch, ASHAs, Anganwadi workers, Auxiliary Nurse Midwives, self-help group (SHG) members, and Village Health and Sanitation

Committee (VHSC) were collected by an NGO facilitator as the first step towards implementation. Regular meetings were conducted with members of the community to understand the landscape and profile of the villages. Special attention was paid to understanding barriers and drivers for WASH-related practices, such as hand washing, open defecation, access to clean drinking water and menstrual hygiene management.

2.Strengthening the capacity of existing SHGs:

216 SHGs were included in the intervention. As many as 400 trainings on WASH and 50 trainings on menstrual hygiene management were provided to SHGs, which enabled them to become social platforms for disseminating messages on sanitation and hygiene. Active SHG groups from the villages were then identified to intensify awareness regarding safe sanitation.

3.Sensitizing key stakeholders through capacity building

To ensure proper implementation of the programme and to encourage the adoption of best practices of hygiene and sanitation, trainings to build the capacity of the Swasthya Sakhis, Gram Panchayat leaders, Self Help Group members, and Gaon Kalyan Samitis were provided on WASH.

4.Generating demand for toilet re-construction and use:

The most important learning of the last 20 years of rural sanitation programming in Odisha has been that sanitation improvement is a continuous process, which is never truly completed. New households are formed, and new houses are built. Floods and cyclones come, concrete breaks. Rats eat bamboo pit liners and pits fill up. Migrant laborer come in large numbers to help with the harvest. There are always new issues to solve and new leaders to educate. A village can attain open defecation free (ODF) status, but if facilities are damaged people might resort to open defecation again and re-triggering tools will be required to bring back and sustain open defecation free status. Community institutions like nigani samitis/village committees play a crucial role in the revitalization of good hygienic habits and behaviors.

5.Creating awareness through street play facilitation:

Evening shows were organized to reach many people in the community, especially men, who were working throughout the day. Street plays on WASH, open defecation, hand washing, and MHM were organized regularly and were followed by discussions. Efforts were made to ensure equal participation from men, women, and adolescents during these community meetings.

Photo 3: Awareness Raising on WASH

6.Menstrual Hygiene Management:

Menstrual hygiene became an almost invisible, but urgent need after the cyclone. There were severe risks for around 10,000 menstruating women and girls, whose hygiene was threatened by unsafe water and insanitary conditions. To overcome these limitations, UNICEF actively promoted safe MHM practices and supported women with MHM kits that included soaps, sanitary pads, water buckets and other items. The intervention included the hygiene team undertaking more detailed focus group discussions with women in relation to their menstrual hygiene needs.

7. Hygiene Promotion and Handwashing with Soap

Hand washing with soap was considered unnecessary within the targeted communities. People typically reported rubbing their hands with sand or ash after defecation. UNICEF and partners raised awareness on handwashing with soap and reached thousands of people in the affected villages. Directly reaching large numbers of people through face-to-face hand-washing promotion in communities involved support from UNICEF to networks of frontline workers and volunteers.

Photo 4: Community engaged in hygiene promotion

8. Drinking Water Supply

During the Fani response period, since piped water supply systems had largely collapsed, water trucking was the sole option to re-establish drinking water supply services immediately and 'life-saving'. The identified issues to be addressed were first to ensure sufficient water supply and second, the procurement of supplies and equipment. UNICEF used its established relationship with organizations such as Oxfam to carry out the procurement allowing for a maximum number of beneficiaries to be reached in the shortest possible time.

For the Panchayati Raj and Drinking Water Department, UNICEF supported the procurement of five 40 KVA Diesel Generators to be used for pumping stations, as well as three hundred HDPE tanks. These generators and HDPE tanks were primarily used for Kanas and Brahmagiri blocks where water quality was an issue at existing hand-pump tube wells in terms of salinity and iron content. Since there was widespread power failures, these generators and HDPE tanks were used to supply potable drinking water of adequate quality in affected hard to reach areas.

9. Household Water Treatment and Storage (HWTS)

Once safe water supply was established in sufficient quantity, water quality monitoring became priority. Unsafe water can have severe negative impacts on households, especially children, making water quality monitoring at the earliest moment crucial. Household level point of use (PoU) water disinfection became extremely important as all water sources were susceptible to contamination. UNICEF accelerated efforts to promote HWTS in all the targeted villages. Capacity building was a key component of the UNICEF effort. All SHGs were trained on household water treatment and storage. In UNICEF India supported programmes, HWTS is always an integral part of the overall WASH intervention package.

10. Demonstration of Community Managed Slow Sand Filters

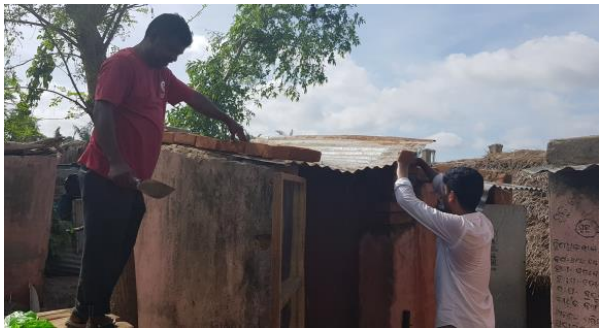
In Puri district, and particularly in Brahamagiri and Kanas Blocks, the hand-pump tube-wells were highly contaminated both with chemical and biological contaminants, which was confirmed by water quality tests. As an immediate, cost effective and indigenous method to water quality improvement, a Slow Sand Filter was set up with community participation. The participating communities were initially sceptic about the efficacy of the system, however, with proper demonstrations and discussions, the community contributed to the scheme by providing active involvement, labour and materials. This demonstration project also provided an effective

channel for the transfer of knowledge from organizations to the community. The demonstration programme has shown that slow sand filtration is a simple, economical, and reliable treatment method. It was found that it is essential to initiate the community education and participation process prior to the introduction of new water supply and treatment structures, as it helps to ensure that the needs of the people are met satisfactorily, that local resources are mobilized, and that facilities are understood, used and maintained properly. Furthermore, project findings showed that hygiene education is a key element in initiating discussion and change of community practices detrimental to hygiene and sanitation, without which the impact of safe water supply is limited.

11. Sanitation

Excreta disposal is a critical WASH intervention for disease prevention after any disaster. The cyclone massively damaged household sanitation facilities. Toilets were either partially damaged or completely collapsed leaving villagers no option but to defecate in the open. The issue was to rapidly build appropriate infrastructure and reinstating good sanitary practices. The toilet roofs and doors were partially damaged, so communities were mobilized and persuaded to rebuild the toilets with existing household or local materials to avoid the spread of disease due to open defecation.

Photo 5: Community engagement in rebuilding WASH infrastructure



12. Mason Training and Retrofitting of Household Toilets

The cyclone devastated the sanitary infrastructure of some households, leading to previously ODF villages to revert to defecating in the open and exacerbating unsanitary conditions of the village. Hence there was a pressing need to repair and restore toilet facilities and bring households back from open defecation to safe excreta management. Unfortunately, there was a shortage of skilled masons, who could immediately restore the toilets adequately. Quick and specific trainings of masons were provided to the existing semi-skilled masons of the village so that toilets could be retrofitted, making them functional again.

13. Water Quality Monitoring and Surveillance

In addition to work around HWTS, UNICEF continued to work with the State Government and the community to test all drinking water sources, identifying relevant hazards and addressing them. UNICEF helped to build surveillance capacity by training community technicians and promoting community and household-level quality testing.

14. WASH Recovery Planning through Resilience Framework

UNICEF in this response covered the continuum from response via recovery to preparedness. Coastal places like Puri are vulnerable to repeated occurrences of disasters, which do pose a risk to communities and infrastructure, particularly WASH infrastructure. Hence, the recovery process is also intended to go beyond the traditional notion of bouncing back and restoring normalcy. It provides UNICEF with the opportunity to realign WASH interventions and strive for transformation, which will prepare the affected communities to face future hazards better.

UNICEF adopted, in principle, that disaster resilience is the ability of communities and their systems (infrastructure, services, and institutions)

to maintain basic functioning in the event of a setback, even occurring on a regular basis.

Building Institutional Capacities: SHGs / Youth Clubs / Village Health and Sanitation Committee (VHSC)

Village level organizations are organizations and institutions that are focused on building local resilience. UNICEF advocated with the State Government to build their capacities to promote and develop their technical expertise and build the communities' capacity in adapting and promoting disaster resilience.

Community Participation

Through various interventions and tools like Community Approach to Total Sanitation (CATS) and other participatory tools, UNICEF is ensuring the participation of communities starting from the decision-making process of any project. It ensures the community involvement in post Fani reconstruction programmes, it enhances their resilience by strengthening physical, emotional, and practical abilities to resist disasters. Participatory assessment processes involving vulnerable people and disaster survivors are harnessed to help identify and prioritize urgent needs and vulnerable groups. This process promotes the integration of traditional methods with new technological inputs, so that that local needs, resources, and cultural practices are reflected in the WASH development.

Integrated Programming and Partnerships

UNICEF is committed to enhance and sustain partnerships in emergencies, which contributes to the realization of WASH program objectives significantly. Actions defined to prevent the development and transmission of WASH related diseases integrate the three mutually supporting components which are hygiene, sanitation, and water supply, whether completed under the same WASH response or not. To maximize the effectiveness, efficiency and sustainability of actions, 'stand-alone' WASH operations are integrated as a coherent part of a broader cross-sectoral response to humanitarian needs. UNICEF WASH and Nutrition teams worked together to strengthen integration, provision of services, and include WASH education and sensitization packages to reduce wasting and stunting related to environmental factors. Increased collaboration ensured provision of WASH services in nutrition centers supporting responses to nutritional crises during Fani response and rebuilding.

Conclusions

Drinking Water

1. Cleaning/disinfection of poorly protected sources does not effectively improve water quality. Protecting the source from contamination is the most important safeguard for water quality, necessitating good design and construction of facilities, combined with hygiene promotion and community action to maintain good practice.

2. Households accept or reject drinking water mainly using aesthetic considerations. Issues such as turbidity, color, taste and odor can make them turn to other water sources, that may look clean but are in fact more contaminated and involve a higher health risk. There is a need for increased dialogue and better understanding of these motivations combined with hygiene promotion and community mobilization.

3. POU treatment needs to be accompanied by effective hygiene promotion campaigns that are based on a clear understanding of motivations and barriers to behavior change and which ensure that people know how to use and maintain the technology and safely store their drinking water.

4. Water treatment should be accompanied by appropriate storage containers to protect collected water against re-contamination.

Photo 6: Drinking water source protection

Sanitation, Drainage, Solid and Liquid Waste Management, and Vector Control

1. Attention should be given to operation and maintenance (O&M), including awareness raising in relation to good hygiene practices as it is essential for the effectiveness of excreta disposal solutions.

2. Effective vector control is difficult in the absence of proper drainage and waste management; drainage, solid and wastewater management and vector control are intertwined activities in flood situations.

Hygiene Promotion

1. Hygiene promotion is still sometimes seen as an optional and additional activity in a water and sanitation response, yet, it needs to be integrated with all the components of the hardware response to ensure full impact of all activities, as only the effective use and maintenance of facilities will ensure a positive impact on public health and the environment.

2. Hygiene promotion should not be only the one-way communication / dissemination of standard hygiene messages. It should be based on dialogue and interaction with the affected population to identify feasible, targeted and impactful actions that can be taken during the emergency, motivating real behavior change.

3. Enabling factors such as the presence of toilets or soap may only be available supported through agencies during emergency response. Hygiene programmes that also factor in local conditions increase the likelihood of sustained hygiene practices.

4. A variety of methods, communication channels and approaches can be employed to promote hygiene and provide information to affected populations. However, interactive methods with targeted messages, is highly likely to be more successful in mobilizing communities to make the best and correct use of WASH facilities and to protect their health than one way communication with generic messaging.

5. Hygiene kits present an opportunity to promote the use of safe water for drinking, the use of toilets, personal hygiene and hand washing with soap at critical times. Where possible, hygiene promotion activities should accompany the distribution of hygiene items and post distribution monitoring of the use of items should be carried out.

Next Steps

Many issues were identified as challenges to be addressed in the recovery and ‘Building Back Better’ (BBB) phase for WASH post the cyclone Fani disaster. Those challenges include capacity building, addressing the needs of people with disabilities, disaster resilient technology for WASH, financing mechanism for the repair of damages, inter-sectoral collaboration and sustenance of behavior change for safe WASH. Some of these are further detailed below.

- Capacity building of Self-Employed Mechanics (SEMs) to carry out emergency repairs and maintenance to be undertaken at regular intervals. SEMs should be equipped with the necessary tools to carry out operation and maintenance of piped water systems, hand pumps and tube wells.

- Capacity building of frontline staff on hygiene promotion during emergencies, must be undertaken on evidence based interactive communication.

- Prepositioning of at least one diesel generator set, one portable water testing kit (with consumables) at Junior Engineer level

- Prepositioning of at least one mobile water treatment unit and water treatment chemicals at Sub Division Office (SDO) level (this will remove the need to solicit water treatment units from nearby states).

- Prepositioning of spares and supplies for solar installations, along with the usual hand pump, pipe network and pump spares at sub-division level.

- Longer term agreements with suppliers for storage and supply of basic non-perishable hygiene items including menstrual absorbents, following minimum standards in emergencies. This is to ensure access to personal hygiene and dignity items for women and adolescent girls during the emergency.

- Develop and formalize a surge roster to mobilize additional technical staff from nearby (not affected) districts, including drivers, technicians, SEMs.

- The nodal WASH departments (rural and urban) should assess the Human Resource requirement against the overall standard of the Department and recruit accordingly. Skill gaps exist among engineers, field functionaries and agencies on Disaster Risk Reduction (DRR). Hence, it is proposed to undertake skill building of all officers and field functionaries on DRR.

- Coordination with education and health: assessment of WASH in institutions (schools, anganwadis, health centers) should be jointly assessed and recovery needs prioritized, to prevent: (i) students from dropping out of school (due to prolonged school closures); and (ii) increase in infections in hospitals (due to potential closures and/or contamination).

- Coordination between waste management and water resources planning: Cleaning, disinfection and maintenance of village ponds should be taken up jointly to ensure that the ponds can serve as emergency water sources and not turn into waste dumping areas.

- Coordination with health sector: regular analysis of line lists to detect spikes in diarrheal diseases, this should inform increased water quality monitoring and treatment along with key hygiene promotion messages.

References

Cyclone FANI, Damage, Loss Needs Assessment Report, published by Government of Odisha, Odisha State Disaster Management Authority (www.osdma.org)

Photo Credits

All images: Gautam Patnaik, State Consultant (Water), UNICEF Odisha

Map of Odisha: Odisha State Disaster Management Authority

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About the Series

UNICEF's water, sanitation and hygiene (WASH) country teams work inclusively with governments, civil society partners and donors, to improve WASH services for children and adolescents, and the families and caregivers who support them. UNICEF works in over 100 countries worldwide to improve water and sanitation services, as well as basic hygiene practices. This publication is part of the UNICEF WASH Learning Series, designed to contribute to knowledge of good practice across UNICEF's WASH programming. In this series:

Discussion Papers explore the significance of new and emerging topics with limited evidence or understanding, and the options for action and further exploration.

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WASH Diaries explore the personal dimensions of users of WASH services, and remind us why a good standard of water, sanitation and hygiene is important for all to enjoy. Through personal reflections, this series also offers an opportunity for tapping into the rich reservoir of tacit knowledge of UNICEF's WASH staff in bringing results for children.

WASH Results show with solid evidence how UNICEF is achieving the goals outlined in Country Programme Documents, Regional Organizational Management Plans, and the Global Strategic Plan or WASH Strategy, and contributes to our understanding of the WASH theory of change or theory of action.

COVID-19 WASH Responses compile lessons learned on UNICEF's COVID-19 response and how to ensure continuity of WASH services and supplies during and after the pandemic.

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