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**DELIVERING WATER, SANITATION AND HYGIENE SERVICES  
IN AN UNCERTAIN ENVIRONMENT**

**WASH and community resilience: field experience  
from Assam Floods 2012**

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*Early recovery work provides a useful opportunity to promote community resilience. This paper describes the nature of recovery and the contextual analysis under which the project funded by ECHO for early recovery<sup>1</sup> post-floods was undertaken in Assam, the northeastern region of India in 2012-13. Oxfam India, as part of a consortium with two other International agencies began their early recovery interventions after the immediate response. However, due to multiple waves of flooding most agencies faced innumerable challenges during their response interventions. This paper provides a narrative of opportunities and challenges faced in promoting community resilience through recovery work, by making conscious attempts and visionary interventions focussing on longer-term development. The lessons from this early recovery programme are instrumental not only for WaSH/ sector-specific programming but also useful for addressing future risks, informing policy and promoting resilience.*

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**Introduction: disaster resilience and emerging concept**

There has been increase in the use of the term ‘resilience’ against disasters or promoting resilience of affected communities since the adoption of The Hyogo Framework for Action 2005–2015. Many international funding agencies, INGOs, bilateral and multilateral donors are using it increasingly in their development as well as humanitarian programmes. The most commonly used definition for system or community resilience formulated by John Twigg as follows:

- Capacity to absorb stress or destructive forces through resistance or adaptation
- Capacity to manage, or maintain certain basic functions and structures, during disastrous events
- Capacity to recover or ‘bounce back’ after an event (Twigg, 2007).

A focus on resilience means putting greater emphasis on capacity rather than depicting community as helpless victims. The concept of resilience focuses on the existing capacities within communities and how organizations engaged with them could enhance these capacities rather than focusing on their vulnerabilities and needs. Oxfam India under its Humanitarian Response and Disaster Risk Reduction (DRR) strategy aims to enhance its and local partners’ capacity to promote new and better ways of responding to humanitarian crises and to enable the rural poor to anticipate, manage and reduce risks from disasters.

**Oxfam India in Assam Floods 2012-13**

In June 2012, Assam, one of the vulnerable states in North Eastern part of India, faced massive floods and widespread displacement. The monsoons arrived early in 2012 as Assam received a 28 percent increase in rainfall (from 1-28 June 2012), 528 mm against the normal rainfall of 413 mm (IFRC, 2012). The first wave of floods in northern districts of Assam was reported on 2<sup>nd</sup> June 2012 (Outlook, 2012). By 29<sup>th</sup> June 2012, BBC news reported one million people displaced due to torrential rains as 21 districts out of 27, were affected due to riverine floods in Assam (BBC, 2012). The numbers rose to around 2.4 million by the end of June 2012. Since the onset of flooding, there were 43 reported breaches of embankments on the Brahmaputra and 14 of its tributaries, spread across 14 districts. The initial government reports suggested approximately 2.4 million in 4,540 villages across 128 revenue circles in Assam were affected in the first

phase of floods. It displaced a highest of 543,088 people (in relief camps as on Oct 2012 – ASDMA flood updates) leading to 126 deaths and 19 missing (ASDMA, July, 2012).

In August, ECHO<sup>2</sup> approved 2 million Euros to assist affected people in Assam through the humanitarian agencies. This funding was mainly to address WaSH needs, food security through cash transfer and transitional shelter support to the worst affected vulnerable households. Major WaSH activities were implemented by ECHO's partner Oxfam (PTI, 2012). On 27<sup>th</sup> September, 2012, the New York Times, India division reported another wave of floods (Thirani, 2012) affecting almost 400,000 population (TNN, 2012). There were also reports of ethnic conflicts breaking out between Bodo tribes and Muslims settlers in Bodoland Territorial Autonomous Districts (BTAD) where Oxfam was the only agency operational initially at the ground.

Oxfam India and local NGO partners in late June carried out assessments in the aftermath of the massive floods in order to understand the unmet needs of the affected due to the flooding and displacement cutting across all sectors. It was estimated that 70% previously safe water sources and 80% of the latrines in the affected districts were submerged. There were reported cases of skin diseases, diarrhoea although there was no outbreak reported at that time. The findings specific to WaSH that emerged from the assessments are as follows:

- Almost all the sources of potable water were inundated, contaminated or dysfunctional. Communities were using unsafe, unprotected water sources without any form of treatment. This placed families, especially children, at a substantially higher risk of water borne diseases.
- Hygiene practices such as open defecation, defecation near the floodwaters, improper water storage and handling behaviour further deteriorated the problem. Due to high water levels installation of WaSH facilities and addressing women privacy and security concerns during defecation were challenging.
- There was an immediate need for improved access to WaSH facilities, mainly drinking water (installation/improvement of water points, treatment, and storage) and hygiene promotion activities; including basic water quality testing at the source and household level to check if there is fecal or chemical contamination (such as arsenic, fluorides) and to check the long term appropriateness of drinking water sources.
- A general lack of proper containers/ pots to collect or store water; coupled with poor hygiene awareness and practice, were creating a negative impact on health in the affected areas.

### **Early recovery programme: WASH**

Oxfam responded in the affected areas, and found it necessary to continue in the early recovery phase based on the immediate emerging needs due to the massive displacement and destruction after the subsequent waves of the floods. Sonitpur and Morigaon were the two worst affected districts, where Oxfam continued its interventions. With the specific aim to respond to basic humanitarian needs, a six months programme was conceived in order to enable the most vulnerable households to ensure income security, address public health risks and support to rebuild their lives and livelihoods through provisioning cash transfer, shelter assistance and support in WaSH. Emphasis was given to create improved access to income, shelter, safe drinking water and sanitation facilities of the most vulnerable affected families. The emergency WaSH response included distribution of hygiene kits, water storage containers, provisioning sanitation facilities, and hygiene promotion campaigns in the relief camps, temporary settlements and in affected villages, water quality monitoring and treatment for safe water, disease surveillance, and home visits. Some of these activities were continued under the recovery phase.

During early recovery phase, there was scaling up of activities with additional WaSH components: – rehabilitation of the existing water sources, increase in latrines facilities, installation of WaSH facilities (latrine with hand wash facilities, bathing units for women) in raised flood shelters constructed under cash for work, rigorous hygiene promotion by using different methodologies for different age groups to increase knowledge level and improve safe hygiene practices, capacity building of the first responders in the villages (government health workers, community workers under the social welfare department) in hygiene promotion in emergency. Disinfection of water sources, disease surveillance, and government coordination are some of the activities continued during the recovery phase. It was important to educate affected communities where they can get the services from relevant government department when they need it most, also to inform government service providers about the situation at the ground in order to bridge the gap between service providers and service receivers. This is also important from the resilience point of view.

The above activities were found to increase the resilience of the systems, infrastructure as well as the communities.

A summary of activities, achievements and their contribution to resilience are provided in the following table:

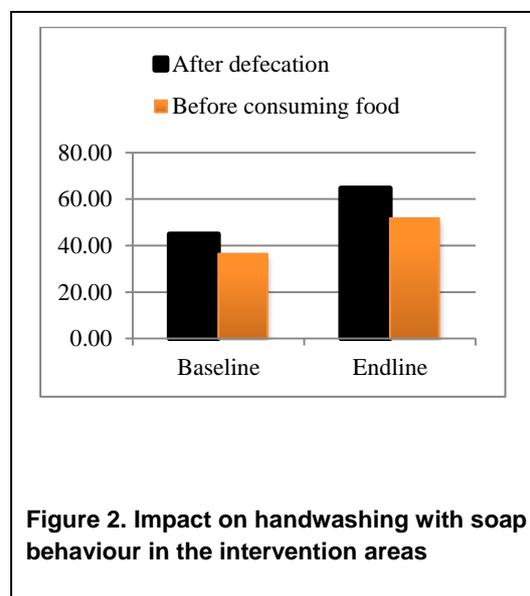
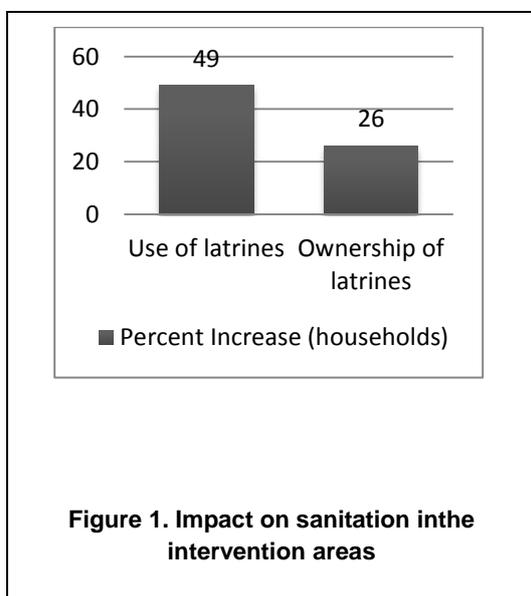
<b>Table 1: WASH activities, achievements and impact on promoting resilience</b>		
<b>Activities</b>	<b>Achievements</b>	<b>Impact on Resilience</b>
Rehabilitation and disinfection of water sources along with training and capacity building.	102 numbers of drinking water sources were rehabilitated. This included sanitary survey, water quality testing, and chlorination/disinfection, minor repairing of the tube well/hand pump, apron construction with drainage system to protect the water sources (mainly tube well) from surface contamination. Almost 3,700 tube wells in the affected areas were chlorinated and repaired for minor damages. Capacity building for village water technicians and WaSH committee members in 36 villages consist of women and men member on minor repairing, disinfection of contaminated water sources and how to protect their sources from submergence in case of future flooding was undertaken.	Provision of DRR measures such as raising tube wells, raising the platforms to a little height above small water logging, building community capacities by providing user committees/village WaSH groups with WaSH toolkits for repairing and maintenance, providing training for the WaSH committees and user groups on hand pump repairing and disinfection– so that community can repair those on their own. The focus was on protecting the water sources from surface contamination rather than raising the platforms above flood level based on community preferences. User committee and WaSH groups were formed and trained. Water quality test for bacteriological, arsenic and fluoride were done to ensure the sources are safe for drinking purpose – the test reports are being provided to the relevant government department for reference.
Provisioning of latrines and bathing units.	Pour flush temporary and semi permanent communal latrines (gender segregated) were constructed by improving the existing construction practices of pit latrines by the community in the operational areas. Bathing facilities were provided for women and girl children.	A latrine cleaning kit with bucket and mug was provided to each user group, the process of site selection was through community consultations, coordinating with local public health engineering department. In Morigaon, these were constructed in raised homestead land in clusters in villages and in raised shelters, while in Sonitpur mostly constructed on the embankment and camps in emergency phase, which were decommissioned and shifted to villages at a later stage. Latrines with hand wash facilities were installed on raised earthen flood shelters with community owned maintenance system.
Hygiene promotion activities	Oxfam reached out directly to almost 43,500 affected populations for public health promotion with messages on - hand washing with soap at critical times, safe water handling, food hygiene, diarrhea management, accessing basic health services, personal and environmental hygiene. School based activities were also carried out.	The hygiene messages were promoted using street plays, demonstration, home visits, games and quizzes for the children, creative ways of messaging through organizing inter village volleyball tournaments to focus on youths. There were specific activities that involved community health workers from the health department like ASHA (Accredited Social Health Activist)/ANM (Auxiliary Nurse Mid-wives) local health volunteers, who are the first responders in emergencies. School based activities enlisted the support of teachers and education department ensuring sustainability.

## Impact of the programme

In order to analyse the impact and outreach of the programmes and evaluating the outcomes of the interventions different monitoring and evaluation tools were being undertaken. Some of the key activities were as follows:

1. Knowledge, Attitude, and Practices (KAP) baseline survey on water, sanitation and hygiene during the emergency phase and endline survey were undertaken to study the extent of behaviour change instituted within the communities after the public health promotion campaign.
2. Income expenditure surveys pre- and post- cash distribution provided the socio-economic profile of the communities, their coping capacities and impact on the income sources.
3. A Real Time Evaluation (RTE) by an external team (Oxfam International) to assess the programme process and outcomes against the organization benchmarks, as well as donor visits helped in reassessing the programme activities and determine effectiveness of strategies adopted in the programme.
4. Various sector-specific studies were undertaken to understand the changes in the context as well as develop strategies for future involvement. GPS coordinates were taken for all structural interventions for monitoring purposes.

Some of these activities brought to light the impact of the programme, specifically with respect to water, sanitation and hygiene. Some of the findings are as follow: There was a heavy dependency on tubewells for drinking water. 71% respondents were found to be using the buckets with lid provided by Oxfam for storing drinking water. There was a 23% reduction in the households that left their water containers uncovered, 28% increase in those who frequently cleaned their storage containers, with almost 97% houses regularly cleaning their containers daily. Even the hygiene messages were effective since there was an improvement in hand washing practices, water hygiene practices as well as in sanitation. In terms of knowledge most respondents noted the reasons for their behaviour change within the households. For example: 70% had learnt about the transmission route for water-borne diseases recently. Some of these findings are presented in fig 1. and 2.



There is scope for further improvement since very few households had access to water and sanitation facilities and infrastructure services. There is still a huge demand to meet the needs of those who had not directly received latrines or tubewells.

From the real time evaluation it was found that in terms of outreach, timeliness, speed of response, gender mainstreaming, the emergency response and early recovery programme had achieved the minimum standards as well as organizational benchmarks for speedy, effective and timely response. Although the scale of devastation was huge, it was found during the field visits that much more is needed to ensure complete and holistic recovery. It was found that the siting of latrines through community consultations,

especially with women was very useful as they felt safe and used the latrines at night. Distribution of sanitary cloths was appreciated. The community facilitators undertook household visits and demonstrated good hygiene practices. The formation of WaSH committee from existing community committee ensured sustainability and continuity. During the recovery phase it was observed that many of the household started constructing their household pit latrines with their own resources. They practice close defecation but value addition would be to educate these communities for constructing the latrines in a more resilient manner, distance from the hand pumps, size of the pits based on the number of users, process of safe decommissioning of the pit before the flood so that possible health risk are taken care of while installing such facilities. One of the key issues that came up during the site visits was that most of the shallow tube wells installed by the government or privately, had dried up in some areas. Initially they were submerged and contaminated and those were later disinfected and rehabilitated. It is important to consider long-term sustainability during the identification process for future investments in rehabilitating tube wells or other such infrastructure.

### **Opportunities and challenges**

There were multiple opportunities for resilience programming in the flood-affected areas, although the situation was chaotic and complex. It was important to utilize the limited available resources to promote resilience infrastructure where possible, for building community capacities to adapt to, cope and transform for facing future threats. Communities in both the districts were devastated and there were delays in getting government support in terms of rebuilding and rehabilitation. Moreover, there were additional vulnerability factors for these affected communities –as most of them were living in either government land (paying encroachment tax) or community land. Most of these families had lost their homestead and cultivable land. Accessing mainstream support was a challenge for them in normal circumstances. Therefore, it was important to link response and recovery with longer-term development goals. Better consultation and participation of communities in the response and early recovery programme empowered them and helped in taking useful decisions. For example, cash for work intervention was used to construct raised earthen platforms to be used as flood shelters, which was prioritised by the community. Oxfam provided WaSH facilities in these flood shelters. There were opportunities to scale up interventions and advocate with the local governing bodies as in Morigaon, where the model of latrines installed as part of the programme was presented to the district officials, for adopting such cost – effective design and technique by the government department for their sanitation programmes. A WaSH capacity mapping for the government public health engineering department in the state was undertaken in order to understand the gaps in relation to WaSH response. Oxfam also worked with the department to develop a brief contingency plan for them to initiate a timely and effective WaSH response as per the standard operating procedures. This type of initiative is important for institutional resilience building.

The challenges faced during the early recovery programme were constraints in adequate resource allocation, programmatic, competencies and consistencies in human resources, and temporal and contextual challenges. Adequate resource allocation was crucial in determining the scale and type of interventions best suitable for the community for their early recovery. The scale of devastation was huge and resources available were limited due to budget constraints and challenges in fundraising, especially for event like the floods. Programmatic challenges such as flexibility in changing interventions and strategies based on the changing ground situation, differences in hygiene kits by different agencies, beneficiary selection when everybody was affected under fluid conditions, logistical challenges in field implementations – all these affected the achievement of desired results. It was found that prolonged engagement of staff in response and recovery programme led to fatigue and team burn out. Timeframe of such programmes determine the extent to which DRR and other resilience building components are injected meaningfully. The contextual challenge was fluctuating population, from camps/embankments to original villages. The roads were destroyed; bridges and canals were broken, hence transport and distribution, even access to affected villages or camp settlements proved a huge challenge and time consuming. Many families were living with their relatives or outside the villages. During the early recovery it was found that as the populations returned home, there were situational challenges, such as loss of land, or land lease papers, or land was filled with sand. The rebuilding of new embankments in these areas for plugging the breaches by the government has now put many of the households living near to the river at risk as they remain outside the new embankment.

## Conclusions

The experience from response in Assam is important to understand the systematic and context-specific attempts that were undertaken by the agencies like Oxfam to mainstream disaster resilience in local community development during the recovery programme. Oxfam and local partner's strength and mandate and the donor's recovery objectives were instrumental in providing the resilience perspective and engagement in longer-term development of the communities. The capacity of the partner organizations, sound knowledge of the local context, history of disaster events in the region and have a strong community presence was very helpful in leading change and transformation within the communities at the same time appreciating local capacity and traditional practices. The early recovery programme shows that a holistic and integrated approach across sectors and phases right from the assessment stage alone would promote resilience rather than adopting a fragmented approach to responding to the floods. Hence to conclude, community capacities, organizational mandates, resources and expertise to understand the local context and respond to the emerging needs with foresight and appropriate planning, as well as sector-specific expertise to design and build stronger and resilient infrastructure at safer locations through community-led processes all are instrumental and essential features for promoting resilience within the communities.

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## Note

<sup>1</sup>The recovery programme was funded by ECHO Oxfam Australia, Oxfam Canada and Oxfam India.

<sup>2</sup> ECHO stands for Humanitarian Aid and Civil Protection department of the European Commission (ECHO), .

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