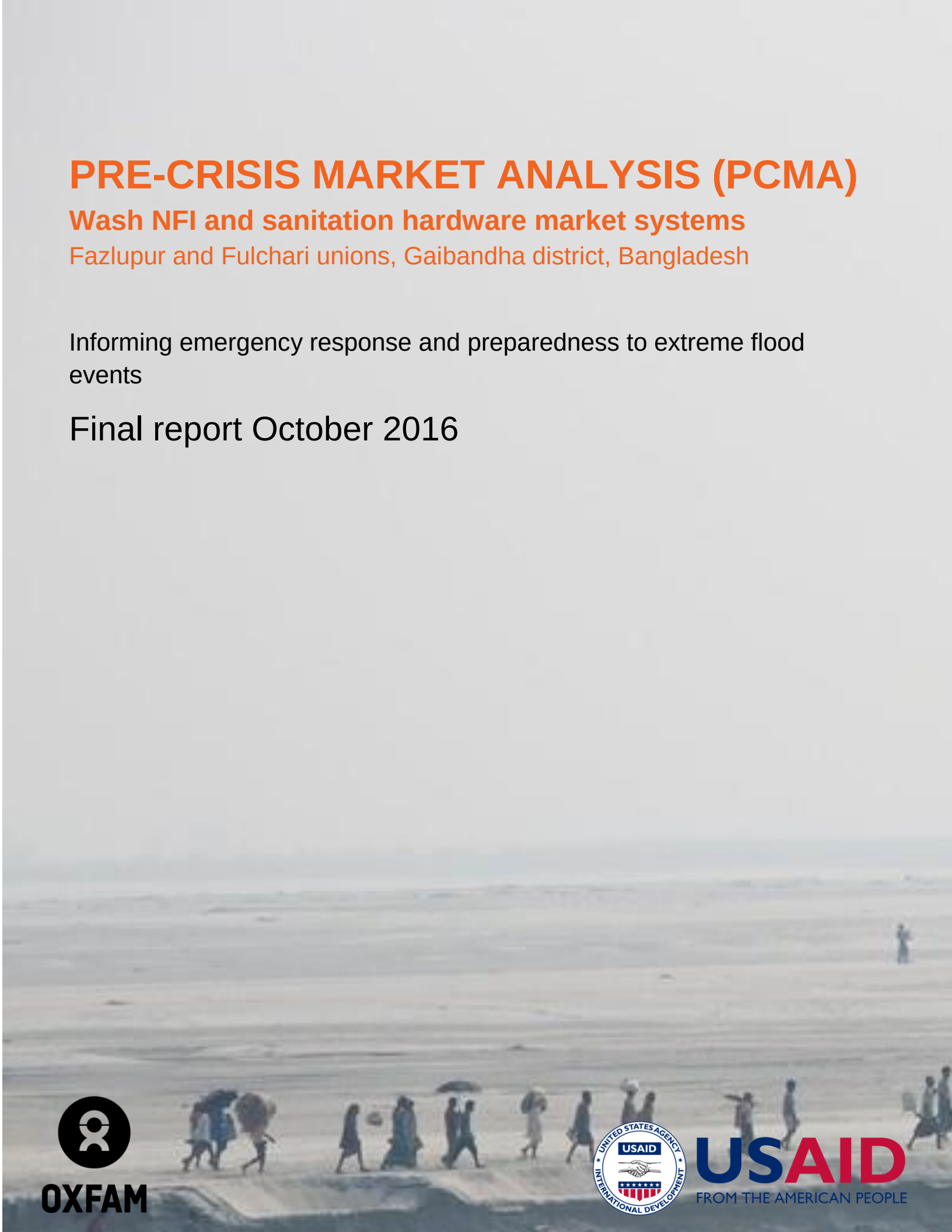
PRE-CRISIS MARKET ANALYSIS (PCMA)

Wash NFI and sanitation hardware market systems

Fazlupur and Fulchari unions, Gaibandha district, Bangladesh

Informing emergency response and preparedness to extreme flood events

Final report October 2016



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List of Acronyms

BDT- Bangladesh Taka

BSTI- Bangladesh Standards and Testing Institution

CFW - Cash for Work

CHWs - Community Health Workers

CRS - Catholic Relief Services

CSO- Civil Surgeon Office

DDM- Department of Disaster Management

DGDA- Directorate General of Drug Administration

DPHE- Department of Public Health and Management

EMMA - Emergency Market Mapping and Analysis

FGD – Focus Group Discussion

HH – Household

MHM - Menstrual Hygiene Management

MMT - Mobile Money Transfer

MoDMR- Ministry of Disaster Management and Relief

NFI – Non Food Items

ORS - Oral Rehydration Solution

PCMA - Pre-Crisis Market Analysis

SMC – Social Marketing Company

UNICEF- United Nations International Children's Emergency Fund

UNOCHA- United Nations Office for the Coordination of Humanitarian Affairs

WaSH – Water, Sanitation and Hygiene

EXECUTIVE SUMMARY

Gaibandha District, located in northern Bangladesh, is chronically affected by seasonal floods during the months of July to September. The population is split between two geographic zones, those who live in the mainland areas (higher-elevation areas) and those who live in the 'char' areas (low-lying riverine areas which typically flood during the seasonal flooding). While flooding of the riverine area is an annual event, every 3 – 4 years has traditionally seen a more severe flood where homes and farmland become inundated with water for between 10 and 20 days, with the most recent severe flood occurring in September 2014. Approximately 480,000 people live in the char areas of Gaibandha District, with two of the most vulnerable areas being Fazlupur and Fulchhari Unions, which are composed almost entirely of char areas. These populations frequently experience inundation of their farmland and often their homes. In severe flood events (such as that of 2014) these people can be displaced from their homes for between 10 and 20 days, although this can last for up to 2 months in the most extreme instances. In extreme floods, the affected populations either move to areas of higher-elevated land or reside in shelter centres.

Oxfam has repeatedly implemented humanitarian WASH, food security and livelihoods interventions in these areas since 1988 (in 2004, 2005, 2007, 2009, 2010, and 2012 to 2016) for the for the most vulnerable flood-affected char populations. Emergency needs have been identified as: a lack of access to clean water, damage to latrines – meaning that sanitation becomes a key issue, a lack of purchasing power and an increase in water borne diseases.

Typically, humanitarian interventions for WASH are focused on the direct provision of in kind products, whether during the emergency, such as in the distribution of NFI kits, or post-flooding, such as in the distribution of latrine materials.

In May 2016, Oxfam facilitated a Pre-Crisis Market Analysis (PCMA) in Gaibandha district. The PCMA is an approach to conducting market analysis prior to emergencies in order to understand existing levels of functionality and to anticipate how markets will respond after a shock occurs. It allows humanitarian agencies to map the functionality of current market systems and assess their capacity to cover the needs of affected people in an emergency. This is key to feeding into preparedness and contingency plans by informing the design of appropriate emergency response interventions, as well as to recommending mitigation measures to be implemented before the shock occurs.

The PCMA in Gaibandha aimed to identify if alternative response recommendations to in kind distributions were possible or appropriate, to build recommendations into contingency planning to improve preparedness and to mitigate the impact of regular crises.

Recommendations for both emergency and preparedness interventions may be for direct responses targeting affected populations, but also for indirect responses aimed at supporting market actors so that they are able to effectively provide for the needs of the population, with minimal external assistance. Indirect responses can also include advocacy activities to target elements of the market environment in order to contribute to a better functioning of the market system.

Methodology

This PCMA adapted the Emergency Market Mapping and Analysis (EMMA) methodology for the pre-crisis context in order to map and analyse specific critical market systems. Market systems are composed of networks of market actors (the market chain), whose dynamics are influenced by institutions, norms and trends (the market environment) and supported by a range of key infrastructures, inputs and market support services.

The assessment team was composed of 16 participants and a technical support team of five, from 8 different agencies, including local NGOs and INGOs. Participants attended a 3 day workshop in Dhaka and 2. 5 days of preparation work in Gaibandha that covered the PCMA approach, the 10 steps of EMMA and other relevant topics in market analysis, before beginning field research. The study analysed how selected market systems are performing in the current situation and aimed to forecast the impacts of the shock scenario in the target areas.

Target Areas & Population, Scenarios, and Critical Market Systems

The target population is households in these unions classified as poor and ultra-poor through wealth ranking exercises performed as part of the PCMA. These are households which typically have seasonal income, do not own land and work as sharecroppers.

In order to understand the impact of flooding on the target population, and to determine the most relevant responses, two crisis scenarios were selected. Firstly, the PCMA aimed to understand the impact of seasonal annual flooding on the char populations. For this scenario a 'typical' reference period was selected to be September 2015. The second crisis situation for this PCMA is an extreme flooding event, with the flood which occurred in September 2014 used as the basis for the 'extreme' crisis scenario. In this scenario, the majority of homes in the target area experienced some level of flood damage, with a portion of the population temporarily displaced from their homes to areas of higher ground.

The selection of critical market systems was based on a combination of population need, typical relief responses and the use of existing market systems by the target populations living in the char areas. Thus, while 'access to clean water' was seen as a priority from a health mandate and agency perspective, there was not a vibrant enough market for water purification products and services nor sufficient demand by the target population to warrant a market analysis.

The critical market systems selected for the PCMA were mostly centred upon WASH NFIs which are typically distributed in-kind by relief actors in the form of hygiene kits; this includes:

- Bathing & laundry soap;
- Oral Rehydration Solution (ORS);
- Menstrual Hygiene Management (MHM) materials (cotton cloth and sanitary napkins);
- Water containers with lid (metal pitcher or kolshi);

Additionally, as the provision of sanitation infrastructure is a common post-emergency intervention to replace damaged toilets; sanitation products were selected. Concrete slabs and concrete rings have the same market system actors, environment and infrastructure, and were therefore treated as the same market system in the analysis.

For all market systems, the key analytical questions focused on three main aspects:

1. The conditions and constraints for the target groups in accessing market systems, during:
    a. non-crisis times,
    b. seasonal flooding,
    c. and crisis times (severe flooding);
2. The capacity of market systems to meet the needs of the target groups, in the three scenarios;
3. The most appropriate interventions to improve preparedness feed into future planning efforts and contribute to the design of more timely and efficient emergency interventions.

Photo: Tom Pietrasik

Key Findings & Recommendations

In general, all items which are typically provided in-kind by relief actors during flood emergencies are already available in sufficient quantities within the local market, and all are items which are regularly purchased by the target population. During periods of flooding, the target population's access to markets actually improves; the char area of Gaibandha is what scholar and risk analyst Nassim Nicholas Taleb would refer to as 'anti fragile', or a system which actually gains or increases in ability as a result of stressors, shocks or instability. As flood waters inundate the area, boat travel becomes ubiquitous throughout the remote char lands, and affordable boat travel to local markets is utilized by the majority of the target population; this is true even during times of more severe flooding, as the larger, upazila-level markets (which offer more competitive prices and greater selection than the smaller markets closer to their homes) are more easily accessible, and also serve as important social gathering places.

WASH NFIs (Bathing & Laundry Soap, ORS, MHM Materials, Water Containers)

The target groups regularly purchase WASH NFIs which are distributed by relief actors (as hygiene kits) during flood emergencies. During times of severe flooding, the barrier to access is not a lack of items in the market place, but a lack of purchasing power at the household level due to a lack of seasonal income and no formal access to equitable credit services, signalling a **demand-side problem**. As such, in-kind provision of hygiene kits is essentially creating a parallel market consisting of free hygiene items, likely harming the existing market chain for these items. Additionally, several of the items contained in the hygiene kits are not critical items to many households, as household goods are not typically lost in the flooding.

Recommendations for the provision of WASH NFIs include the following:

1. As the barrier to target groups accessing essential WASH NFIs is a demand-side issue, and the market has the capacity to meet the demand (as per the HH gap analysis), provision of essential WASH NFIs (bathing & laundry soap, ORS, menstrual hygiene materials, and metal pitchers) should be distributed via a cash-based modality. Discussions with target groups highlighted that the preferred modality is a conditional cash voucher system, in which the voucher would be limited to the selection of pre-approved products. As nearly all households in the target population possess mobile phones with registered SIM cards, the preferred tool for the cash voucher which should be pursued is an electronic voucher, sent via the mobile network.
2. As nearly the entire population of Fazlupur and Fulchhari unions travel to the large Fulchhari Market to purchase goods during floods, the cash-based modality should be established with these market traders.
3. If chlorine tablets are to be distributed, they should be distributed to the target group in the Fulchhari Market at the same time that the conditional cash voucher is redeemed;
4. The market actors who act as wholesalers stated that they are able to invest 50,000 – 300,000 BDT ($635-$3800 USD) in the purchase of additional stock if necessary. Beyond this amount, relief actors should assess the need to provide up-front capital (in the form of advance payment, cash grant, or soft loan) to ensure sufficient stock in the marketplace.
5. Development of an essential WASH NFI 'basket', in order to determine the value of any conditional cash voucher that is developed. This should be done at the WASH Cluster level, in order to ensure agreement and adherence by all WASH stakeholders likely to be involved in future responses;
6. The distribution of bleaching powder should be discontinued, as members of the target group did not fully understand its intended purpose, nor is it considered an essential WASH commodity.

Sanitation Products

A high level of demand exists amongst the target population for individual toilets, which are readily available from nearby Sanitation Marts (SanMarts). These are sold as packages consisting of (a) concrete slabs with pan, and (b) concrete rings for pit lining. Similar to the WASH NFIs, the barrier is not a lack of availability within the market, but a lack of purchasing power at the household level and a lack of access to formal credit providers; as such, this signals a **demand-side problem**. This results in households lacking any proper sanitation facilities, and leads to purchases of cheaper, lower-quality products which easily and rapidly become damaged. The in-kind provision of toilets as a post-emergency measure, a typical activity amongst relief actors, is essentially creating a parallel market that does not address underlying issues related to inadequate sanitation coverage.

Recommendations for the provision of WASH NFIs include the following:

1. Several development actors are in the process of introducing sanitation marketing programs, with an objective of providing affordable, pro-poor financing options specifically for household toilets/latrines. These programmes will likely include char areas. Any post-emergency sanitation interventions should aim to link target beneficiaries to these programs, as opposed to providing in-kind provision of hardware.
2. There is a single toilet design available in the market, which is not completely appropriate for low-lying flood areas. Post-emergency interventions should aim to work with SanMarts in order to develop low-cost, flood-appropriate options for residents of the char areas;
3. In areas where no sanitation marketing or micro-finance options exist, relief actors should, at the very least, aim to provide sanitation materials through the local market, e.g. through a commodity voucher (partially or fully subsidized) or similar.
4. Any provision of toilets should also ensure that toilets are not constructed in areas likely to be flooded again in the near future. Several organizations implement Cash for Work (CFW) activities centred upon plinth raising for houses; this could be extended to include plinth raising for toilet construction as well, and serve as a conditionality for receiving support to access a toilet from the SanMarts.
5. The DPHE maintains responsibility for ensuring the quality of toilet components produced by SanMarts, and has provided trainings for SanMart masons in the past. Any intervention which targets sanitation should work in partnership with the DPHE to ensure that minimum quality standards are met by the SanMarts' products, and reduce the sales of cheaper, lower-quality products. This will necessitate awareness-raising with the target population about the issue of quality standards.

Market Monitoring & Updating of Results

Markets are dynamic in nature, and if the shock analyzed here does not occur immediately, it will be crucial to monitor how markets behave over time in order to keep the findings and recommendations up to date. Regular monitoring is essential, and the following monitoring plans provide suggestions as to what to monitor for critical market systems, and how to do it.

As this PCMA was a multi-agency exercise, participating agencies should coordinate to share responsibilities for data collection linked to the monitoring plans, and try as far as possible to include some of these indicators in existing monitoring efforts (e.g. PDM, any planned baseline or needs assessments, regular price monitoring), so as to optimize the use of time and resources.

The results of this PCMA should be updated in two events: when the shock occurs and when (if) the context changes significantly (outside normal patterns seen in the market monitoring plans). When the shock occurs, the scenario-affected market maps should be updated (the maps showing the situation as of May 2016 will not change). The objective is to verify the anticipated impacts of the shock on the critical markets and to update response recommendations accordingly. This can be done within 2–3 days.

The trigger for a rapid post-crisis assessment to update the shock-affected market maps will be when severe flooding starts and once it is fairly clear if households will remain in their villages or move. Ideally, this should be conducted by staffs who have taken part in this PCMA exercise.

Photo: Tom Pietrasik

SECTION 1: CONTEXT AND METHODOLOGY

1.1 Context

Gaibandha District, located in northern Bangladesh, is chronically affected by seasonal floods during the months of July to September. The population is split between two geographic zones, those who live in the mainland areas (higher-elevation areas) and those who live in the 'char' areas (low-lying riverine areas which typically flood during the months of June to September). While flooding of the riverine area is an annual event, every 3 – 4 years has traditionally seen a more severe flood where homes and farmland become inundated with water for 10 – 20 day, with the most recent severe flood occurring in September 2014. Approximately 480,000 people live in the char areas of Gaibandha District, with two of the most vulnerable areas being Fazlupur and Fulchhari Unions, which are composed almost entirely of char areas. These populations frequently experience inundation of their farmland and often their homes. These populations frequently experience inundation of their farmland and often their homes. In severe flood events (such as that of 2014) these people can be displaced from their homes for between 10 and 20 days, although this can last for up to 2 months in the most extreme cases. In extreme floods, the affected populations either move to areas of higher-elevated land or reside in shelter centres.

Preparedness planning for WASH emergency relief during flooding mostly consists of procurement of WASH-related non-food items (NFIs) from Dhaka (though in some cases from regional and district-level markets), and in-kind distribution by INGOs and government agencies. Some relief actors pre-position the NFIs in warehouses in Gaibandha town, while others procure and transport the goods only after the flooding reaches emergency levels. Multi-agency flood damage assessments tend to be generalized and, as such, do not always adequately reflect the needs of the affected population. The result is a distribution of items from a pre-defined list prepared by the national WASH Cluster (see list of recommended items in Annex 1), which is intended for disaster-affected populations across the entirety of Bangladesh, as opposed to those items of specific relevance for the target population. Feedback from stakeholders in Gaibandha has shown that the provision of WASH assistance (notably the provision of hygiene NFIs) typically arrives 2 – 3 weeks after the commencement of flooding, usually once the flood water has already receded and the affected population has already begun early recovery activities. Very little post-distribution monitoring (PDM) of relief WASH activities exists, rendering it impossible to ascertain if they are meeting critical needs of the affected population.

1.2. Rationale

PCMA is designed to help agencies to improve preparedness, feed into contingency planning efforts and contribute to the design of disaster risk reduction programmes by identifying how people currently access basic goods, services and incomes and modelling how these systems continue to serve the population in the event of a crisis.

The PCMA in Gaibandha was intended to identify whether there were alternative responses that could be built upon existing market systems and beneficiary behaviours, that could improve both response efficiency and the degree of appropriateness for the target community. A critical motivation for this work was to establish 'if we can respond better'.

By understanding and comparing how market systems operate for target populations in 'normal' and 'crisis' times, donors, governments, NGOs and relief agencies can increase the speed and appropriateness of emergency responses. Moreover, based on analysis, agencies can consider strengthening market systems ahead of emergencies that would potentially reduce the disaster impact on

lives and livelihoods, and begin to address the longer term or chronic nature of poverty and vulnerabilities.

As cash transfer programming is increasingly used in humanitarian food security and livelihoods programming in Bangladesh, there is a critical need to systematize market analysis across all relevant sectors as a crucial step in the response design phase. All humanitarian interventions have an impact on markets, and understanding market dynamics is fundamental to (1) doing no harm, (2) increasing efficiency and effectiveness and (3) strengthening both emergency response and early recovery interventions. Market analysis can be carried out at all stages of the program cycle to inform preparedness, response, monitoring, early recovery and coordination efforts.

1.3 Objectives of the PCMA

The PCMA focused specifically on the markets critical for supporting basic WASH needs during a flood disaster. The primary objective was to identify and assess the most appropriate, timely and effective options for enhancing existing preparedness and emergency response strategies.

The specific objectives of the PCMA were as follows:

1. Determine the most timely and effective modality for the provision of critical WASH goods and services;
2. Identify what humanitarian needs can be met through the local provision of goods and services;
3. Identify blockages/barriers for the target population to access critical WASH goods and services;
4. Develop efficient and timely response options through agreement with market actors, government authorities and other stakeholders.

1.4 Methodology

This PCMA used an adapted version of the Emergency Market Mapping and Analysis (EMMA) methodology. This report presents the results and recommendations of the PCMA which was carried out in Fazlupur & Fulchhari unions, Gaibandha District, from the 20th to the 29th of May 2016.

The collection and review of secondary data, selection of critical markets, and preliminary drafting of key analytical questions began in March 2016, led by the Market Focal Point.

The PCMA training and assessment was carried in two parts; in Dhaka and in Gaibandha. Please see annex 2 for a list of participants.

In Dhaka, a 3-day training workshop on the PCMA process was held on May 16 -19, 2016, facilitated by Oxfam's Senior WASH Advisor for Asia and supported by Oxfam's Regional Emergency Food Security & Vulnerable Livelihoods (EFSVL) Coordinator. The training was attended by WASH Cluster members, concerned government institutions, and academic institutions, as well as those who were taking part in the Gaibandha PCMA. As the PCMA process is still a relatively unknown concept in the Bangladesh WASH sector, the objectives were the following:

- Identify the benefits of using PCMA
- State, explain and apply PCMA
- State and use the criteria for effective critical market system selection
- Use the key tools of PCMA
- Collate and analyse data gathered through the use of PCMA toolkit, and produce suitable options for effective humanitarian response in emergency based on that data

- Explain the value of PCMA to senior decision makers
- Apply effective training skills to train essential components of the PCMA in the field.
- Demonstrate the benefits of market-based solutions in the context of Bangladesh.

Upon arrival in Gaibandha, two days were utilized to:

- define and clarify the critical markets selected for analysis;
- define and clarify the key analytical questions for each selected market;
- finalize and field-test data collection tools;
- divide PCMA participants into teams for data collection and analysis;
- create initial market maps based upon preliminary data collection and analysis;
- schedule meeting times (to the extent possible) with interviewees.

The fieldwork took place from May 22 – 28, and consisted of the following methods of data collection:

- semi-structured interviews with key informants (government authorities, national and international NGOs, private sector actors) and market actors (shop owners at Union, Upazila, District, Regional & National level; credit providers; masons and service providers; Market Traders' Associations; etc.);
- structured household interviews and focus group discussions (FGDs) (both mixed- and single-gender) with households from the target groups (flood-affected villages in char areas), inclusive of the elderly, people with disabilities, and female-headed households.

The assessment was carried out by a team of 16 staff from Oxfam GB, local partners (SKS and GUK), staff and students from the Institute of Disaster Management, and INGO participants from the Oxfam-led PCMA training who were interested in gaining hands-on field experience in the PCMA process. Oxfam's Humanitarian WASH Coordinator for Bangladesh acted as Market Focal Point, while Oxfam's Senior WASH Advisor for Asia acted as Analysis Lead for the exercise. Please see Annex 3 for the PCMA schedule.

The team represented a mix of skill sets and backgrounds, mostly comprising staff of WASH and livelihoods programs, with about half of the team members familiar with the Gaibandha context. Aside from the Analysis Lead, only one of the team members had previous experience in carrying out market analysis. The team would have benefited from the participation of members with a business support background (e.g. logistics and finance), particularly for the response analysis component of the PCMA.

Daily debriefings by team leaders enabled all teams to update their market maps, perform an ongoing preliminary market analysis, and make any necessary adjustments to their fieldwork plans.

Upon completion of the fieldwork and data collection, a 1.5-day meeting was held with the participants to consolidate all data and calculate the gap analysis and market capacity analyses, as well as perform the response analysis in order to recommend actions for future emergency responses, including preparedness, market strengthening, emergency response and early recovery activities.

All data collection tools are included in Annex 4 and an overview of the interviews is in annex 5.

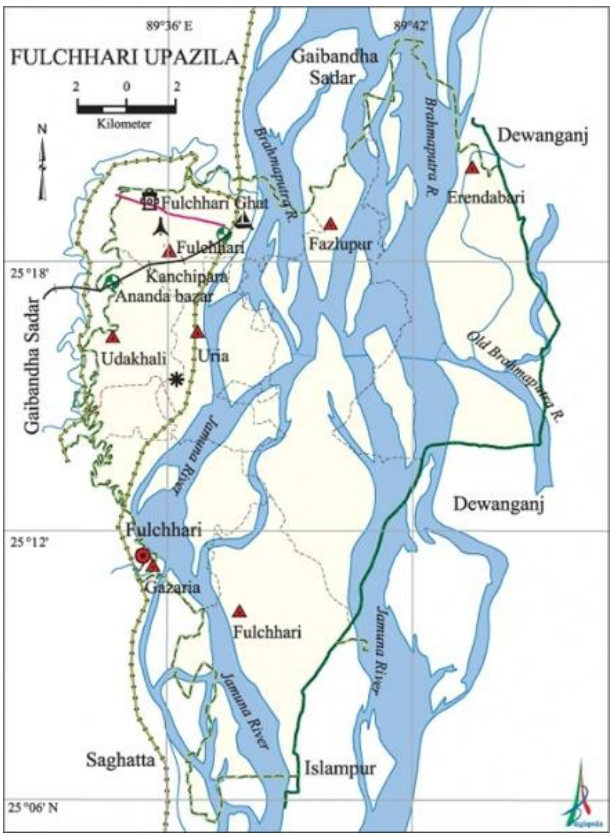
SECTION 2: SCOPE OF THE ASSESSMENT AND CRISIS SCENARIO SELECTION

2.1. Geographical Focus

This PCMA focused on two unions in Gaibandha District, Fazlupur (population: 22,578) and Fulchhari (population: 24,930). These unions were identified by Oxfam's local partners (SKS and GUK) as the most vulnerable. Nearly the entirety of the population in both unions live in char areas, experience flooding conditions on an annual basis, and are two of the most severely affected locations during bigger floods.

Moreover, these areas were chosen as Oxfam and their partners typically respond to flood emergencies in these areas, and are likely to respond again in the future.

Map 1 shows the locations of the two unions, the key markets for these populations, as well as the locations of interviews done during the PCMA.



2.2 Crisis Scenarios

In Fazlupur and Fulchhari unions, two crisis scenarios were selected for this exercise:

1. Flooding as experienced in September 2015 – this is representative of the typical flooding which Gaibandha experiences on an annual basis, when upstream rains flood the low-lying areas. During this time, the agricultural and grazing lands of the population typically become inundated, though the majority of people's physical homes in the areas are not affected;
2. Extreme flooding as experienced in September in 2014 – the government declared an emergency in 2014, as flood levels rose to inundate peoples' homes and, in some cases, displace affected people to areas of higher ground and shelter centres. Populations of the char areas in Fazlupur and Fulchhari were both affected by these floods, and Oxfam and other relief actors undertook emergency response activities in these areas as a result.

While the normal flooding which occurs annually (reference time: September 2015) is not generally considered a crisis, market functionality and access do differ significantly from the dry season. It was therefore considered important to understand how the market system reacts to both 'normal' and 'crisis' flood events.

The 2014 flooding was deemed to be typical of an emergency-level flood event in Gaibandha District. Over 1.87 million people across 9 districts of northwest Bangladesh were affected, with approximately 80,000 of them targeted for emergency relief assistance over a period of 2 months[1]. Within Gaibandha

[1] UNOCHA Strategic Response Plan, September 2014.

District, a total of 14,885 people were targeted for emergency assistance, though 113,662 people were classified as vulnerable according to UNOCHA. From September – November 2014, rising flood waters disproportionally affected vulnerable populations living in low-lying char areas, primarily in one of the following ways:

1. Houses became inundated with water, and household members remained in their homes. Household members moved essential belongings and shelter materials to their rooftops, living atop their homes until flood waters receded.
2. Houses became inundated with water to such an extent that household members moved to nearby areas of elevated ground (typically within 500 meters of their residence) with essential belongings, living here until flood waters receded.
3. Entire village areas became inundated with water to such an extent that some or all residents moved to temporary flood shelters (typically schools or public buildings) or to road embankments (where no shelters existed and people camped in makeshift tents).

In Fazlupur and Fulchhari unions, the majority of affected households remained in their flooded homes, waiting for a period of 10 – 15 days for flood waters to recede. Only in extreme situations did households move to other locations, though exact numbers of people who remained in homes versus those who were displaced are unavailable. Please see Annex 6 for an overview of past responses.

For each market system, three market maps were produced, demonstrating how the market systems function in the following three scenarios:

- Current Situation (May 2016) – this serves as the 'baseline' map, and demonstrates market functionality and market access during non-drought times;
- Normal Floods (September 2015) –demonstrates market functionality, market access, and impacts on the market system due to normal annual flooding;
- Extreme Floods (September 2014) – demonstrates market functionality, market access, and impacts on the market system due to an extreme flood (one in which the government of Bangladesh declares an emergency situation and requests support for relief assistance to flood-affected populations). The floods of September 2014 were chosen as this is the most recent extreme flood event in the target area.

The objective of the market maps is to analyze the current constraints facing market systems, and how they would be further affected by the shock (an extreme flood event). Through this process, it is possible to identify (1) if the market system has the capacity to meet the needs of the affected population, and (2) if targeted interventions are necessary to support the market system (e.g. key market actors) to expand their capacity to meet the needs of the affected population.

2.3 Target Population – Characteristics

The target population for the PCMA is those people living in char areas of Fazlupur and Fulchhari unions, which is nearly the entire population of these two unions. Wealth ranking data was gathered from secondary data collection[2] and was further adapted with information gathered in FGDs and household interviews performed in randomly selected villages in the two unions. The ranking classifies the different wealth groups based on their livelihood, land and animals owned, income, and other factors which have important relevance when analysing the impacts of flood emergencies and peoples' access to markets. See table 1 below.

Wealth Group	Ultra Poor	Poor	Middle Class	Better-Off
Percentage of Population	62%	22%	9%	7%
Domestic land (Decimals)	0	7-15	15-30	30-100+
Cultivable land (Decimal)	0	0	30-40	50-80
Livestock	5 chickens	6 chickens, 1 cow	2 cows, 8 chickens, some have goats	2+ cows, buffalo, goats
Monthly Income (BDT)	2,000 - 5,000	3,000 - 8,000	7,500 - 15,000	11,500 - 30,000
Meal In Emergency	2 times/day	2 times/day	3 times/day	3 times/day
Condition of House (materials used)	Shaddock thatch (walls and roof)	Shaddock thatch walls, old/used CGI sheets for roofing	CGI Sheet (walls & roof)	CGI Sheet (walls & roof)
Health service	none	limited access	have access	have access
Profession	Daily Labour	Agricultural Labour, small agriculture, boatman	Agriculture, small business, fishing, external job (labour)	Agriculture, small business
Saving	No saving	No saving	No saving	Some saving
Access to finance	yes (informal)	yes (informal)	yes (informal)	yes

[2] Cite the reference for the socio-economic data here

Tube well	shared	shared	private	private
Sanitary latrine	No	No or shared	yes, unsanitary	yes, unsanitary

The poor and the ultra-poor tend to live and work as 'sharecroppers' – they do not own the land they live and farm upon; this land is typically owned by the better-off wealth group, and these groups are allowed utilize the land in exchange for giving 50% of their annual harvest to the landowner.

2.4 Seasonal Calendar of the Target Population

Particulars	January	February	March	April	May	June	July	August	September	October	November	December
Planting											■	■
Harvest			■	■								
Migration for Labour						■	■	■	■			
Manual Labour			■	■								
Floods (normal)						■	■	■	■			
Floods (extreme)									■			
Flood waters recede										■		
Boat Transportation						■	■	■	■	■		
Transportation by land (walking, horse cart, van)	■	■	■	■	■						■	■
Transportation costs increase	■	■	■								■	■
Access informal credit providers						■	■	■	■	■	■	■
Regular loan payment			■	■								
Loan default							■	■	■			
Increased demand:						■	■	■	■			

Toilets												
Increased demand: Bathing soap												
Increased demand: Laundry Soap												
Increased demand: ORS												
Inundated latrine												
New latrine installation												

SECTION 3: CRITICAL MARKET SYSTEMS

3.1 Critical Market Systems Selection

The PCMA was intended to analyse markets that are critical for supporting essential WASH needs during flood emergencies, specifically those markets which supply goods and services that are typically provided via in-kind mechanisms by humanitarian actors during flood emergencies.

Prior to the start of the study, consultations with Oxfam staff and other WASH stakeholders led to decisions taken, based on needs during a crisis, previous WASH responses, beneficiary behaviours and the pre-existence of market systems. This meant that certain markets were discounted from the analysis. For example, although Oxfam was interested to understand the role of markets for desludging and decontamination of water point services, the lack of effective demand by the target population and in both emergencies and non-crisis periods, meant that market based solutions were deemed to be better suited to longer term development and resilience programming.

Based on these consultations, the PCMA team including the following list of critical markets for analysis:

- Bathing soap;
- Laundry soap;
- Oral Rehydration Solution (ORS);
- Menstrual Hygiene Management materials;
- Chlorine Tablets;
- Bleaching Powder;
- 20 litre metal pitcher with lid (kolshi);
- Latrine Hardware (concrete slab, plastic pour/flush pan, concrete rings).

However, after preliminary mapping of the market systems and initial data collection in the field, the following points became clear:

- There is no market for chlorine tablets in the target area. Chlorine tablets are manufactured in India and imported to Dhaka, and are only stocked by humanitarian relief actors (NGOs and UN

agencies) and the District Hospital, to be distributed during flood emergencies. As chlorine tablets are not normally used by the target population, and they are not available in any local markets, it was decided to remove this market from the analysis.

- Bathing and laundry soap are produced by the same manufacturers, follow the same distribution networks, and are stocked and sold in the same shops; purchasing patterns for both items are also similar across all wealth groups. While the two items were analyzed as separate markets, they are presented in this report as a single market, as their market chains, as well as household access to them, were nearly identical.
- As humanitarian actors typically distribute cotton cloths/saris as a component of hygiene kits for women to utilize for menstrual hygiene management (MHM), the MHM market analysis was originally limited to the cotton cloth/sari market. However, as the sanitary napkin market is fairly limited and sanitary napkins are also distributed by some humanitarian actors, they were also included in the market analysis.
- Latrine hardware refers to latrine materials produced by SanMarts (explained later in Section 9). While a complete latrine 'package' consists of several items (concrete rings; reinforced concrete slab; plastic pour/flush pan installed in the slab), each of which could conceivably undergo a market analysis, the decision was taken to group the items together into a single 'package'. This is due to the fact that (a) these items are typically sold together as pre-fabricated components, and (b) these businesses (located in areas of higher elevation than the char area) are not affected by the floods (hence their market systems are not disrupted). The intention of the PCMA was to understand any barriers (e.g. purchasing power) to the sanitation businesses themselves, and if early recovery activities can focus more on supporting peoples' access to these markets (rather than bypassing the market through in-kind distributions of latrines).

3.2 Key analytical questions

Based on the selection of the market systems for analysis, the key analytical questions were developed. The questions were generated to be able to be asked in each of the separate market analysis. While asking, for example, about ORS, the 'relevant market, goods or service' would indicate ORS. The questions were as follows:

1. What is the current demand for the (relevant good or service - for example, ORS), and how is this demand impacted during periods of flooding?
2. What is the impact of flooding on people's access to the (relevant) market system?
3. What is the capacity of the (relevant) market system to cover the needs of the target groups? How would it be affected during a flood emergency?
4. What would be the most appropriate interventions to ensure that the target groups can access a sufficient quantity and quality of the (relevant good or service) from the market system? How can this system contribute to the emergency response?

SECTION 4: EMERGING TRENDS

Before looking in more detail at the individual market systems, it is critical to point out that a number of trends that emerged very strongly across a number of the market systems. As this is the case, additional description or information is given ion cases that do not follow these overarching themes.

4.1 Market environments, inputs and infrastructures

Across the different markets analysed, two points emerged that consistently impact on the functioning of the market systems. These were:

- Seasonal migration of men for labour – as males often times migrate for part of the year to search for labour outside of the char area, women are left in charge of the household. The women do not always feel comfortable travelling to the upazila markets on a regular basis, and tend to purchase more products from local village and union markets during these periods. Moreover, some women also believe that purchasing items in the market is more of a male responsibility, limiting their participation in the purchase of essential goods.
- Seasonal flooding – flood waters bring increased levels of boat transportation, easing access to larger upazila markets and decreasing the functionality of village and union level markets.

Equally, for several of the market systems there were similarities in the way that distributors deliver products, at no additional costs, to other retailers. For the target population, similar blockages and opportunities in the inputs, infrastructure and market system services were held in common across the market systems. The constraints and bottle necks change according to the season, and include:

Blockages:

- Lack of cash/purchasing power;
- Lack of access to credit – as char residents are ineligible for micro-finance loans, they depend quite heavily upon 'informal' credit from shop owners when purchasing consumables;
- Expense of carts, trucks, vans – responsible for transport of goods during the dry season, at high costs. Become less prevalent during the seasonal floods.

Opportunities:

- Mobile Money Transfer – utilized by the target population to pay receive money from relatives living outside of the target area; utilized by shop owners to quickly pay for additional stock from suppliers.
- Waterways – as the seasonal floods arrive, waterways fill with water and boat transport becomes easier.

During periods of flooding, the target population's access to markets actually improves. The char area of Gaibandha is what scholar and risk analyst Nassim Nicholas Taleb would refer to as 'anti fragile', or a system which actually gains or increases in ability as a result of stressors, shocks or instability. As flood waters inundate the area, boat travel becomes ubiquitous throughout the remote char lands, and affordable boat travel to local markets is utilized by the majority of the target population; this is true even during times of more severe flooding, as the larger, upazila-level markets (which offer more competitive prices and greater selection than the smaller markets closer to their homes) are more easily accessible, and also serve as important social gathering places.

Flooding presents the opportunity to access alternative markets, which is seen across the majority of the markets systems analysed.

4.2 Scenario Trends

The baseline data shows that, for the bathing and laundry soap markets systems, and the ORS system, people reported no barriers to accessing market products in the dry season. All residents of char communities purchase bathing and laundry soap and ORS on a regular basis. All groups prefer to purchase soap at the upazila level retailers as the price is slightly cheaper, though access to these markets is limited in the dry season, as land transport is expensive and/or time consuming for people. During the dry season, the majority of people purchase soap at union level retailers (who they typically visit on a bi-weekly basis) or from small village shops if they are not unable or unwilling to travel to a union-level retailer.

The target groups reported no barriers to the purchase of soap or ORS during the dry season, though they did mention that market access is typically more challenging for them in the dry season, as they must either (a) walk far distances or (b) pay high transportation costs (up to 100 BDT one way) to reach the cheaper, larger upazila level retailers.

Normal Flood

For all market systems analysed, as riverine areas become inundated with water, transport becomes easier and more affordable. Commercial boat transportation covers a larger geographical area and serves the majority of the target population, with regular transport between villages and union/upazila level markets. Round-trip boat transportation costs range from 10 – 25 BDT (one way, per person), which people reported they are able to afford in this period. They typically travel to the market 1 – 2 times per week during this period. Land transportation (horse carts and vans) typically stop functioning during this time.

Target groups reported both the increase in the purchase of products from the upazila level (almost the entire population travels to the Fulchhari Upazila Market during this time for their regular purchases). People prefer shopping at this larger market for the following reasons: (1) slightly lower prices; (2) increased selection of goods; and (3) these large market areas are seen as social gathering places, and the established market days have important social importance for the target groups, as they view it as an opportunity to interact with family and friends. As a result, the upazila markets see their sales increase during this time, while union level markets and small village shops experience a reduction in sales.

Extreme floods

For many of the market systems, during an extreme flooding event, new actors enter the market chain while others exit it. Increased levels of flooding typically reduce or eliminate the operation of the small village shops, due to many of these shops become inundated with flood water and are forced to close. These shops suspend operations until flood waters recede, typically a period of 10 – 25 days.

Some union level shops may suspend operations for 7 – 15 days if they become inundated with water, though they can typically repair any damages and begin operating again within 7 days. Supplies lines are not interrupted during this time, as supply by boat transportation is not interrupted.

Upazila level shops remain largely unaffected during an extreme flood event

4.3 Responses

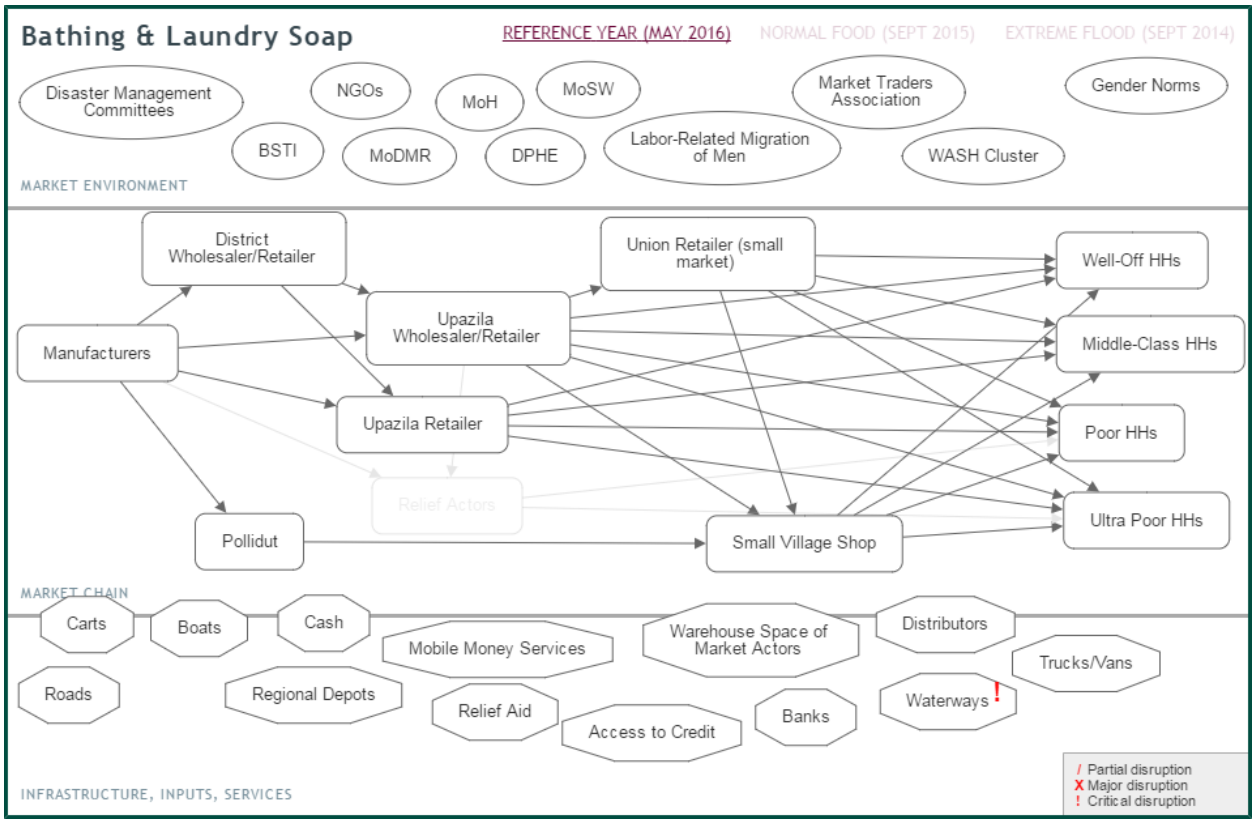
In all of the market systems analysed, it is in extreme flooding that Relief Actors (INGOs, NNGOs, and government disaster response programs) enter the market system. In all systems, bar the sanitation hardware market systems, agencies purchase emergency relief products directly from manufacturers at the central (Dhaka) level or the regional (Gaibandha) level (although smaller NNGOs sometimes also

purchase from upazila level retailers). The products are then distributed to the target groups as a free, one-off, in-kind distribution of goods (as part of a larger hygiene kit). These kits are distributed at locations of higher elevation nearby to communities, meaning the target groups must travel to these locations to receive their allocation. Distributions typically occur 10 – 20 days after the flooding emergency has begun.

SECTION 5: THE BATHING & LAUNDRY SOAP MARKET SYSTEM

51. Current market situation

The map below is a visual depiction of the market system during the dry season (non-flood periods).



Market System

There are several actors involved in the laundry and bathing soap market system:

Soap Manufacturers: There are several large manufacturers with factories in Bangladesh (the largest being Unilever, with the largest market share nationally). These manufacturers employ *distributors*, whose role is to collect regular orders of retailers and wholesalers in their working area (district, upazila and union level) and consolidate them into large orders to the regional depot. Upon delivery of goods from the regional depot to the Gaibandha warehouse, the distributor organizes delivery of the orders to the retailers and wholesalers. The distributor delivers the soap to individual shops at the District, Upazila and Union level at no additional cost (delivery done by truck). The regional distributor, located in Gaibandha, maintains a regular stock of bathing and laundry soap with a value of 7 – 12 million BDT. They regularly supply shops who are long-term, ongoing clients on credit (up to 50% of an order supplied

on credit). Retailers and wholesalers submit payment to the distributor (typically via mobile money transfer (MMT)), who consolidates payments received and sends onward to the manufacturer.

Upazila Wholesalers/Retailers: these are typically grocery shops which stock several items. They serve as both retail outlets and wholesalers for small shops located at the Union and Village level. Typically maintain stock levels of 700 – 3000 bars of bathing soap and 300 – 2000 packets of laundry soap. Price of bathing soap (100 g) = 26 BDT. Price of laundry soap (130 g) = 14 BDT.

Upazila Retailers: these are typically grocery shops which stock several items, and serve solely as retail outlets. Typically maintain stocks of 700 – 3000 bars of bathing soap and 300 – 2000 packets of laundry soap. Price of bathing soap (100 g) = 26 BDT. Price of laundry soap (200 g) = 14 BDT.

Union Wholesalers/Retailers: these are typically grocery shops which stock several items. They serve as both retail outlets and wholesalers for small shops located at the Village level. Typically maintain stock levels of 120 – 600 bars of bathing soap and 70 – 500 packets of laundry soap. Slightly more expensive prices than those found at Upazila-level shops. Price of bathing soap (100 g) = 28 BDT. Price of laundry soap (130 g) = 16 BDT.

Union Retailers: these are typically grocery shops which stock several items, and serve solely as retail outlets. Slightly more expensive prices than those found at Upazila-level shops. Typically maintain stock levels of 120 – 600 bars of bathing soap and 70 – 500 packets of laundry soap. Slightly more expensive prices than those found at Upazila-level shops. Price of bathing soap (100 g) = 28 BDT. Price of laundry soap (130 g) = 16 BDT.

Small Village Shops: very small shops, located in some (but not all) villages, maintaining very small stocks of a limited number of items; typically stock less than 20 units each of bathing soap and laundry soap. Typically maintain stock levels of 15 – 50 bars of bathing soap and 15 – 60 packets of laundry soap. Slightly more expensive prices than those found at Upazila-level shops. Price of bathing soap (100 g) = 28-29 BDT. Price of laundry soap (130 g) = 16-17 BDT.

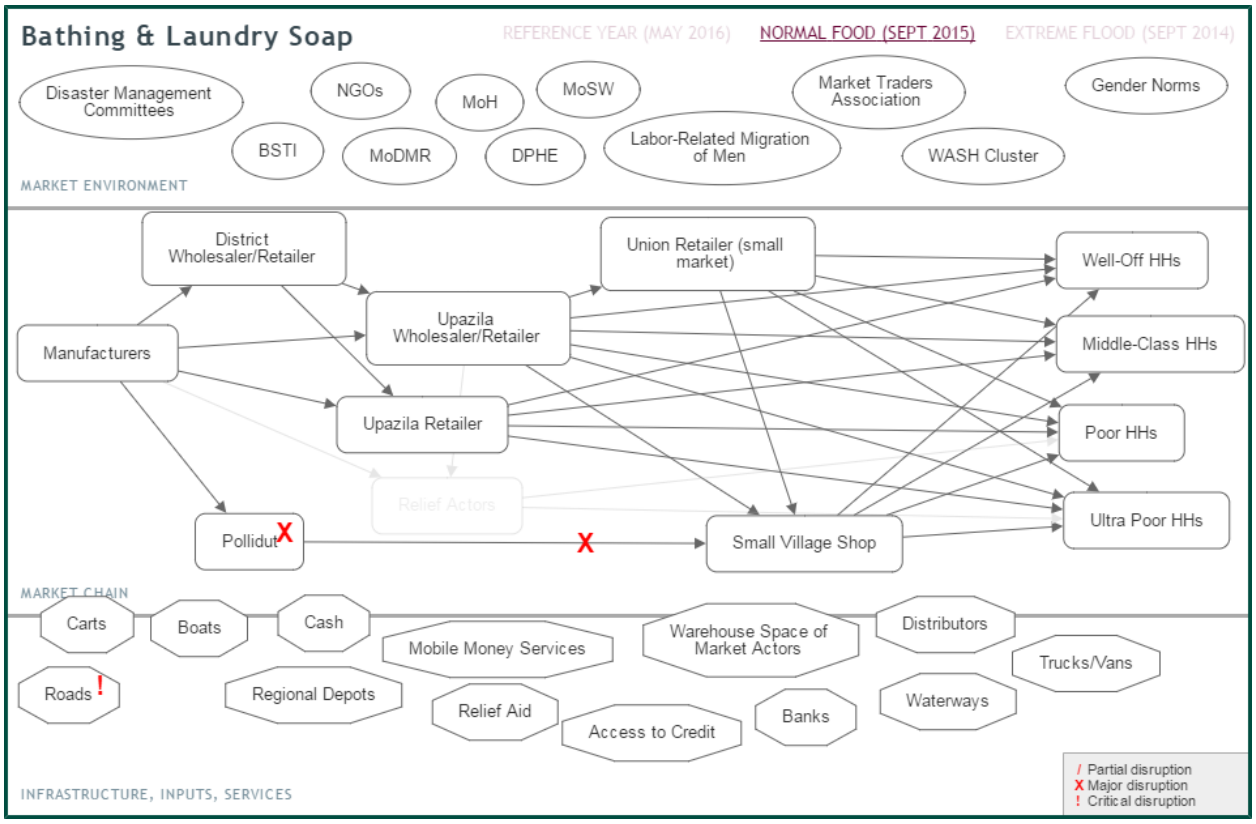
Pollidut: The soap manufacturers sell a portion of their laundry and bathing soap to a group of salesmen known as Pollidut, small businessmen who buy this soap at 2% below wholesale price, and then sell it to small shops in very remote villages (essentially acting as a wholesaler). This is part of Unilever's corporate social responsibility (CSR) program, which ensures that soap reaches even the most remote areas at equitable prices.

Target population access: All residents of char communities purchase bathing and laundry soap on a regular basis. All groups prefer to purchase soap at the upazila level retailers as the price is slightly cheaper, though access to these markets is limited in the dry season, as land transport is expensive and/or time consuming for people. During the dry season, the majority of people purchase soap at union level retailers (who they typically visit on a bi-weekly basis) or from small village shops if they are not unable or unwilling to travel to a union-level retailer.

The target groups reported no barriers to the purchase of soap during the dry season, though they did mention that market access is typically more challenging for them in the dry season, as they must either (a) walk far distances or (b) pay high transportation costs (up to 100 BDT one way) to reach the cheaper, larger upazila level retailers. Migration of men outside of the area for seasonal employment is common in this period, and women in these households reported that they did not feel comfortable traveling for to the upazila market by themselves, and they more commonly purchase soap at small village shops and/or

union level shops. Some women also believe that purchasing items in the market is more of a male responsibility, limiting their participation in the purchase of essential goods.

5.2 Crisis Situation - Normal Flood (September 2015)



During this annual period of flooding, markets continue to function as they do in the dry season, though differences begin to emerge in terms of market access and transportation.

As riverine areas become inundated with water, commercial boat transportation covers a larger geographical area and serves the majority of the target population, with regular transport between villages and union/upazila level markets. Round-trip boat transportation costs range from 10 – 25 BDT (one way) per person, which people reported they are able to afford in this period. They typically travel to the market 1 – 2 times per week during this period. Land transportation (horse carts and vans) typically stop functioning during this time.

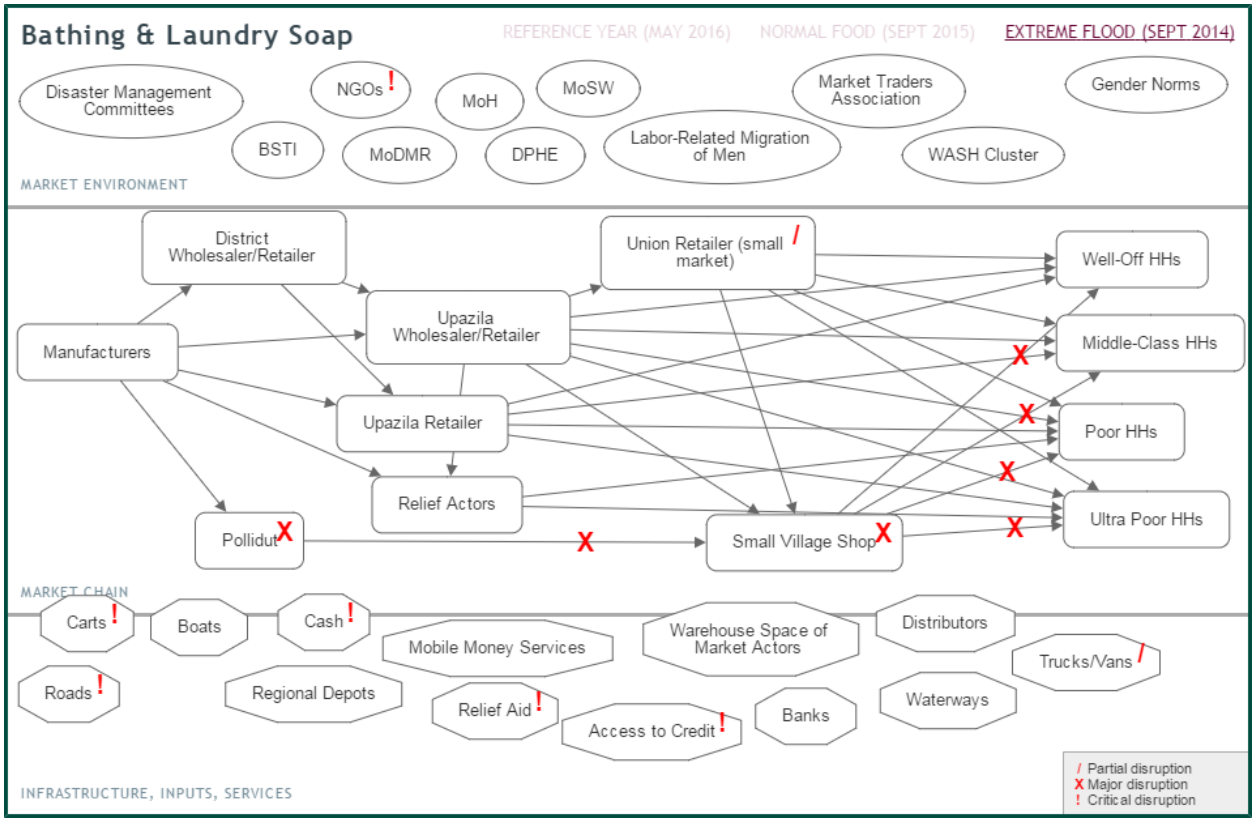
During this period, the target groups purchase a much greater percentage of their soap from the upazila level market (almost the entire population travels to the Fulchhari Upazila Market during this time for their regular purchases, including bathing and laundry soap). People prefer shopping at this larger market for the following reasons: (1) slightly lower prices; (2) increased selection of goods; and (3) these large market areas are seen as social gathering places, and the established market days have important social importance for the target groups, as they view it as an opportunity to interact with family and friends.

Demand for both forms of soap increases during this time, as the target groups are working to harvest their crops and report that they use more bathing soap due to the fact that they are working in sandy water on their agricultural plots, and must bathe more frequently to avoid skin irritations. Laundry soap is

in greater demand as women report that it becomes easier to wash clothes, due to the increased presence of surface water.

The upazila markets see their sales increase during this time, while union level markets and small village shops experience a reduction in sales. Deliveries are still made by the regional soap distributor to all upazila-level markets, though some deliveries are now made by boat as this form of transportation is sometimes more cost effective.

5.3 Crisis situation - Extreme Flood (September 2014)



During an extreme flooding event, new actors enter the market chain while others exit it.

Increased levels of flooding typically reduce or eliminate the operation of the small village shops, due to one or both of the following factors: (1) many of these shops become inundated with flood water and are forced to close; (b) the pollidut temporarily suspend their supply of soap to these small shops. These shops suspend operations until flood waters recede, typically a period of 10 – 25 days.

Some union level shops may suspend operations for 7 – 15 days if they become inundated with water, though they can typically repair any damages and begin operating again within 7 days. Supplies from wholesalers and soap distributors are not interrupted during this time, as supply by boat transportation is not interrupted, though deliveries are only made to upazila level markets, and not smaller union-level markets.

Upazila level shops remain largely unaffected during an extreme flood event; the Fulchhari market experienced a small level of flooding in September 2014 and some shops received minor damage, but

reported that repairs made within 2 – 3 days and they did not lose functionality. Supply lines remained uninterrupted.

The regional depots of the soap manufacturers continue to supply soap to wholesalers and retailers at upazila and union level, though boats typically replace trucks as the means of transportation during this period.

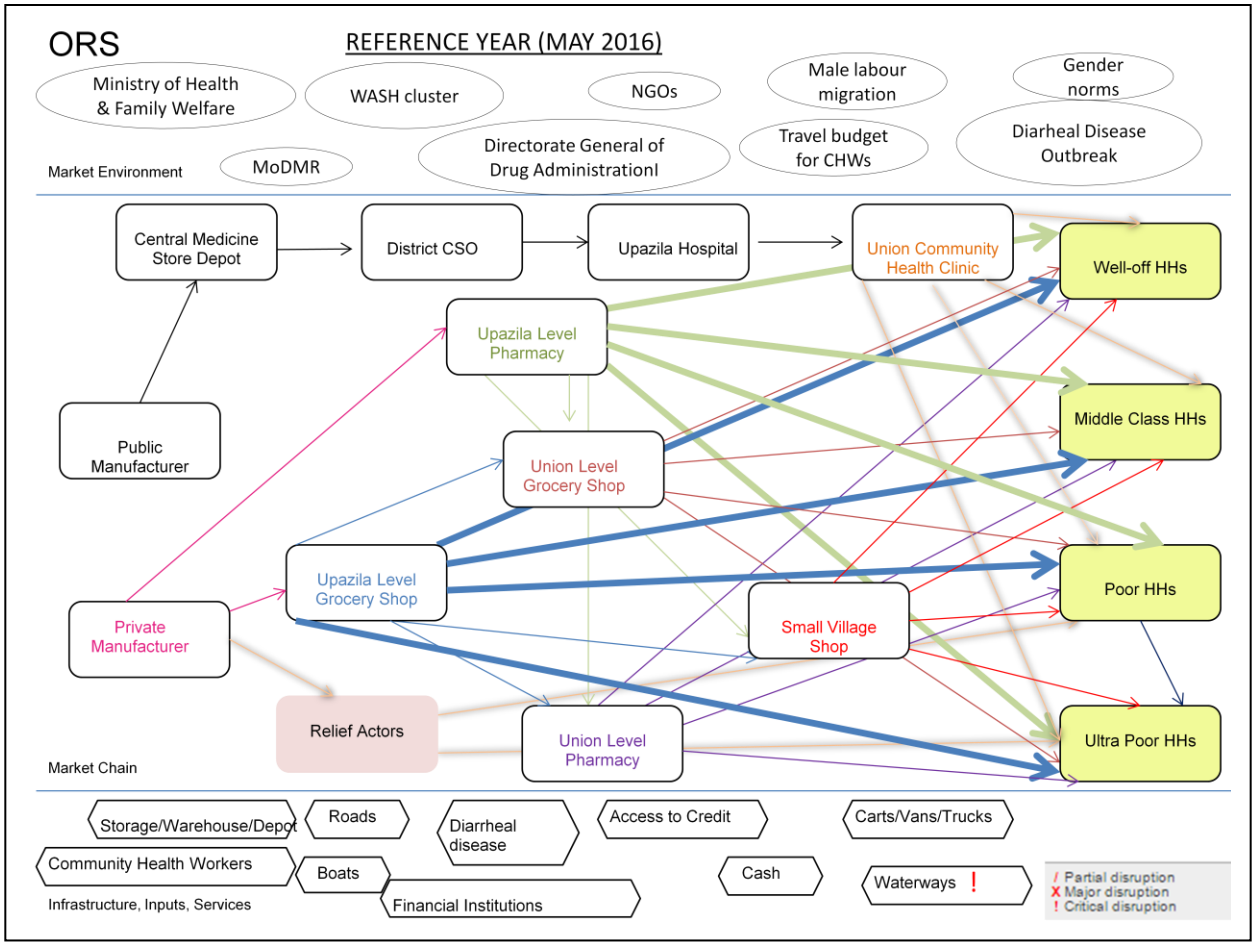
During this period, Relief Actors (INGOs, NNGOs, and government disaster response programs) enter the market system. They purchase bathing and laundry soap directly from manufacturers at the central (Dhaka) level or the regional (Gaibandha) level, or sometimes from upazila level retailers (small NNGOs tend to do this). In some cases they are warehoused in small contingency stocks in Gaibandha town; in other cases they are procured during the emergency period. These are then distributed to the target groups as a free, one-time, in-kind distribution of goods (part of a larger hygiene kit). These kits are distributed at locations of higher elevation nearby to communities – the target groups must travel to these locations to receive their allocation. Distributions typically occur 10 – 20 days after the flooding emergency has begun. These relief actors typically distribute 100g of bathing soap person per month, and 50 g of laundry soap per person per month[3]. While relief actors almost uniformly distribute laundry soap in the form of a solid bar, the target groups in this PCMA unanimously preferred a powder form of laundry soap, as they find it easier to use and ration.

[3] Bangladesh WASH Cluster, *WASH NFI Information*, 2016.

SECTION 6: THE ORAL REHYDRATION SOLUTION (ORS) MARKET SYSTEM

6.1 The current market situation

The map below is a visual depiction of the market system during the dry season (non-flood periods).



Market System

There are several actors involved in ORS market system:

Public ORS Manufacturers: there is one public (government-owned) manufacturer that produces ORS exclusively for the Ministry of Health of Family Welfare (ORS is stored in the Central Medicine Store Depot Present production of ORS by public manufacturer is around 65 million sachets[4] per annum considering one shift duty.

[4] Source Link: www.edcl.gov.bd/production-capacity

Private ORS Manufacturers: There are over 36 registered private manufacturers of ORS in Bangladesh[5], most based in or around Dhaka. The most popular and well-known brand is OR-Saline, which is manufactured by Social Marketing Company (SMC), though a number of other brands are present in the market. SMC produces around 320 million sachets[6] which is around 60% of national market share and others produce around 210 million sachets. Directorate General of Drug Administration (DGDA) is the government organization entrusted with the responsibility of ensuring the quality, efficacy and safety of pharmaceutical products including ORS through the implementation of relevant legislation.

Private manufacturers are required by law to give 5% of their annual supply to the government's Central Medicine Store Depot.

Most of the private manufacturers directly distribute by their own distribution channel at different level. Some companies have warehouse at regional level, and manage all sales to pharmacies and grocery shops at the District, Upazila, and Union level. Companies deliver the ORS to individual shops at the District, Upazila and Union level at no additional cost (delivery done by truck). The manufacturers immediately process orders upon receipt of payment from retailers and wholesalers, typically done via mobile money transfer (MMT).

Upazila Pharmacy: these are shops which stock a wide variety of pharmaceutical products. They serve as both retail outlets and wholesalers for grocery shops and pharmacies located at the Union and Village level. Typically maintain stock levels of 300 – 2000 sachets. Price: 5 BDT per sachet.

Upazila Grocery Shops: these are typically grocery shops which stock several items, and serve mostly as retail outlets, though they sometimes act as a wholesaler and sell ORS to small grocery shops at the union and village level. While grocery shops are not legally allowed to see ORS (as it is a pharmaceutical product), most of them nonetheless maintain a stock. Typically maintain stock levels of 100 – 800 sachets. Price: 5 BDT per sachet.

Union Pharmacy: similar to upazila pharmacies, though smaller in size. Typically maintain stock levels of 50 – 800 sachets. Slightly more expensive prices than those found at Upazila-level shops. Price: 5 BDT per sachet.

Union Grocery Shops: these are typically grocery shops which stock several items. Typically maintain stock levels of 20 – 750 sachets. Slightly more expensive prices than those found at Upazila-level shops. Price: 5 BDT per sachet.

Small Village Shops: very small shops, located in some (but not all) villages, maintaining very small stocks of a limited number of items; typically stock less than 10 – 40 sachets of ORS. Price: 6 BDT per sachet.

Ministry of Health and Family Welfare: maintains production capacity for ORS in order to ensure a reliable stock for patients at government hospitals at the District, Upazila and Union levels.

District CSO: maintains stocks of ORS at District Level. Responsible for planning of contingency stocks and distribution of stocks to hospitals at Upazila and Union level. Typically maintains stocks of 10,000 sachets of ORS.

[5] Directorate General of Drug Administration, personal communication, July 15 2016.
[6] Bangladesh ORS Case study, by Emily Mosites, Rob Hackleman, Kristoffer L.M. Weum, Jillian Pintye, Lisa E. Manhart, And Stephen E. Hawes, November 2012

Upazila Hospital: hospital which distributes ORS to patients whom require it. Typically maintains a stock of 2,000 sachets of ORS.

Union Community Health Clinic: small clinics which distribute ORS to patients whom require it. They also employ two Community Health Workers (CHWs) per union, who work at the village level on medical outreach and education. Typically maintains a stock of 200 sachets of ORS.

Target Population Access: All residents of char communities purchase ORS on a regular basis. All groups prefer to purchase ORS at the upazila level retailers as the price is slightly cheaper, though access to these markets is limited in the dry season, as land transport is expensive and/or time consuming for people. During the dry season, the majority of people purchase larger quantities of ORS (they prefer to purchase a box of 20 packets, as the ORS at this quantity is purchased at a unit of price of 4 taka, as opposed to a unit price of 5 taka when purchased individually) at upazila retailers (who they typically visit on a bi-weekly basis) or from union retailers or small village shops if they are not unable or unwilling to travel to a upazila-level retailer.

ORS is primarily used as a treatment for diarrhoea, though it is also used for general rehydration when people are performing manual labour during the dry season. Pharmacies and grocery shops also sell a product commonly referred to as Tasty Saline, which is similar to ORS though has a lower concentration of sodium chloride and a higher concentration of glucose; it is commonly used by people as an 'energy drink' when they wish to stay hydrated, and is sometimes perceived as equal to ORS. It is not recognized by the District CSO as a pharmaceutical product for the treatment of diarrhoea.

As with the soap market, the target population mentioned that while there are no barriers to the purchase of ORS during the dry season, market access is typically more challenging for them in the dry season, because of the (a) far distances to walk, (b) the high transportation costs and (c) the reluctance of women to travel to upazila markets alone, as men have migrated for work.

Market Environment

An additional and important factor in the market environment which affects the ORS market is the presence of unregulated products – as some ORS products on the market are not licensed by the DGDA, these unlicensed products can be found in some shops. The quality of these products is unknown.

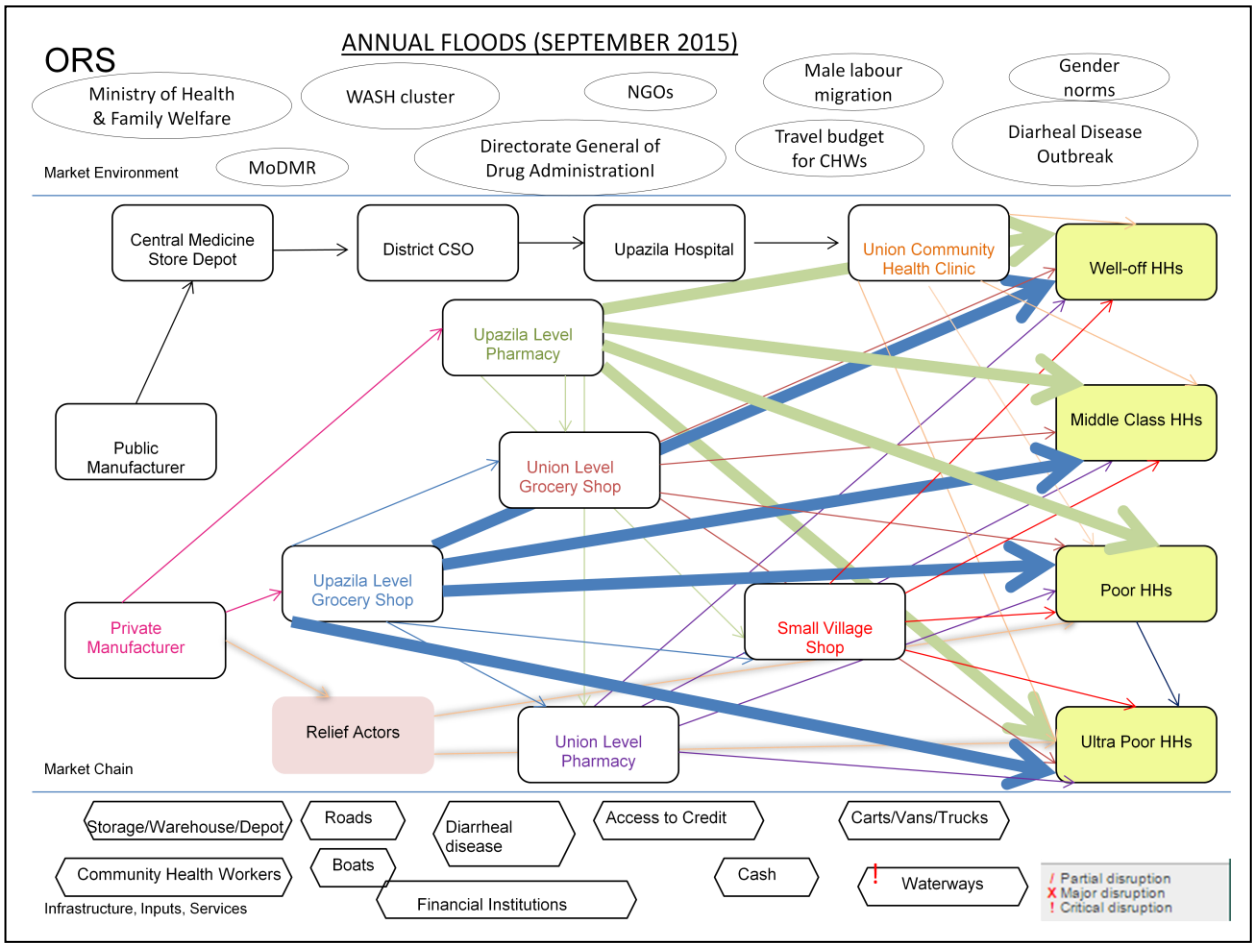
Inputs, Infrastructure & Services

An additional consideration for the inputs, infrastructure and services which affect the ORS market include:

- Transportation – CHWs are limited in their distribution of ORS due to a lack of funds for transportation between villages.

6.2 Crisis Situation - Normal Flood (September 2015)

During this annual period of flooding, markets continue to function as they do in the dry season, though differences begin to emerge in terms of market access and transportation.

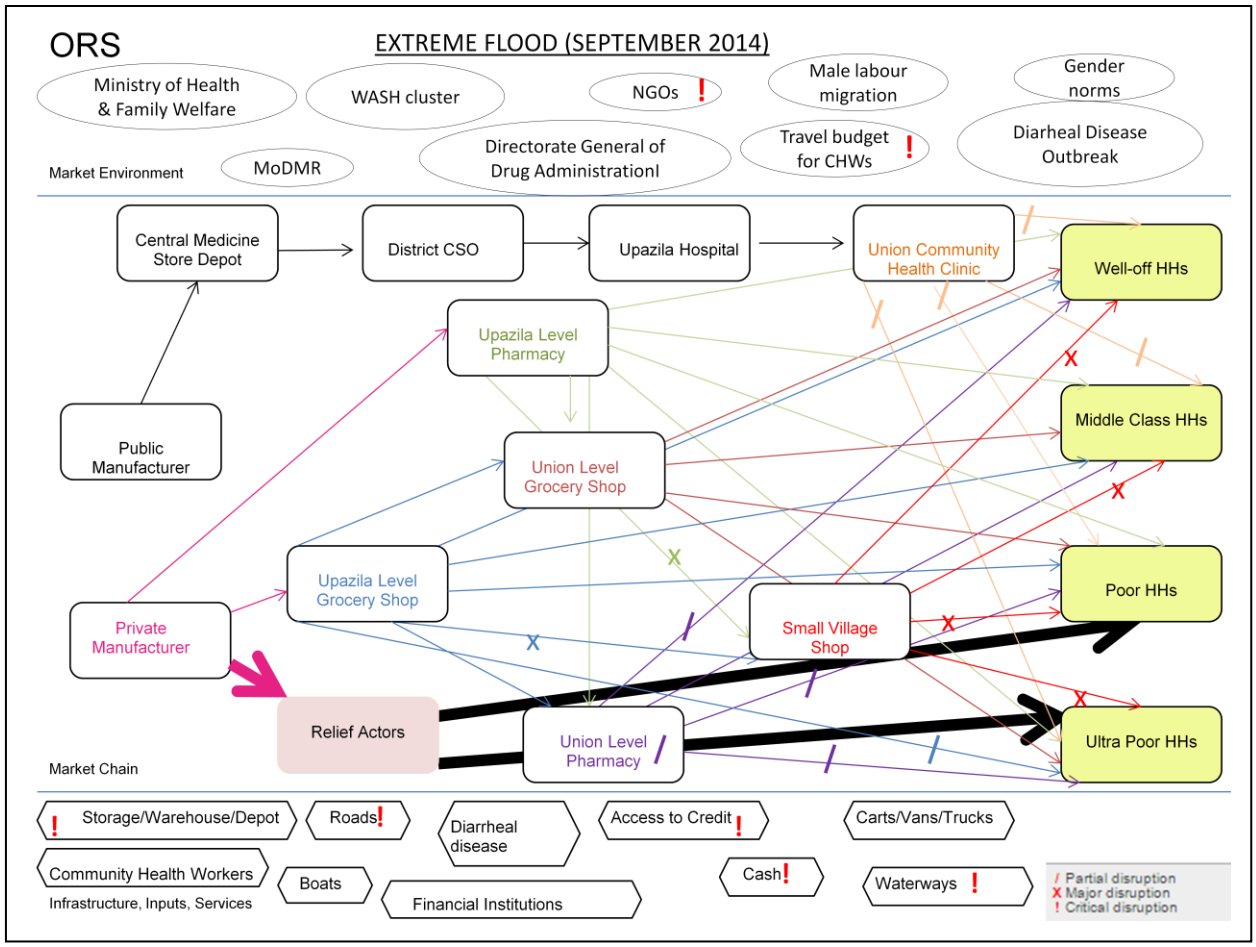


As with the bathing and soap markets, increased water means that commercial boat transport is readily available for the target population with routine services between villages and union/upazila level markets. As previously stated; boat transportation costs range from 10 – 25 BDT (one way, per person), which people reported they are able to afford in this period. People typically travel to the market 1 – 2 times per week during this period. Land transportation (horse carts and vans) typically stop functioning during this time.

Due to the: (1) slightly lower prices; (2) increased selection of goods; and (3) social functions that larger markets play, the majority of the population travels to the upazila market, at the expense of the smaller village shops.

Demand for ORS increases during this time, as the target groups report that diarrhoea rates increase at this time. However, this demand is primarily felt at the upazila level, with union level markets and small village shops experience a reduction in sales. Deliveries are still made by the regional ORS distributors to all shops/markets, though some deliveries are now made by boat as this form of transportation is sometimes more cost effective.

6.3 Crisis situation - Extreme Flood (September 2014)



During an extreme flooding event, new actors enter the market chain while others exit it.

As with the soap markets, the main impact of the extreme floods is felt at the small village shop level. Flooding often affects the ability of these shops to function, as they are often overrun with flood waters. These shops suspend operations until flood waters recede, typically a period of 10 – 25 days.

Although less affected than the small village shops, some union level shops may also have to close, if they experience flooding. It has been reported that these shops can typically repair any damages and begin operating again within 7 days. The supply lines to these union shops are not affected.

Upazila level shops remain largely unaffected during an extreme flood event; the Fulchhari market experienced a small level of flooding in September 2014 and some shops received minor damage, but reported that repairs made within 2 – 3 days and they did not lose functionality. Supply lines remained uninterrupted.

The regional depots of the ORS manufacturers continue to supply ORS to wholesalers and retailers at upazila and union level, though boats typically replace trucks as the means of transportation during this period.

Upazila health clinics receive an additional stock of 10 – 20,000 sachets of ORS from the CSO, which are distributed to Community Health Clinics for distribution at the village level through Community Health Workers (CHWs). The CHWs distribute ORS, free of charge, to households which are suffering from diarrhoea (5 sachets per HH). This is typically limited in scope, however, as the CHWs do not possess a

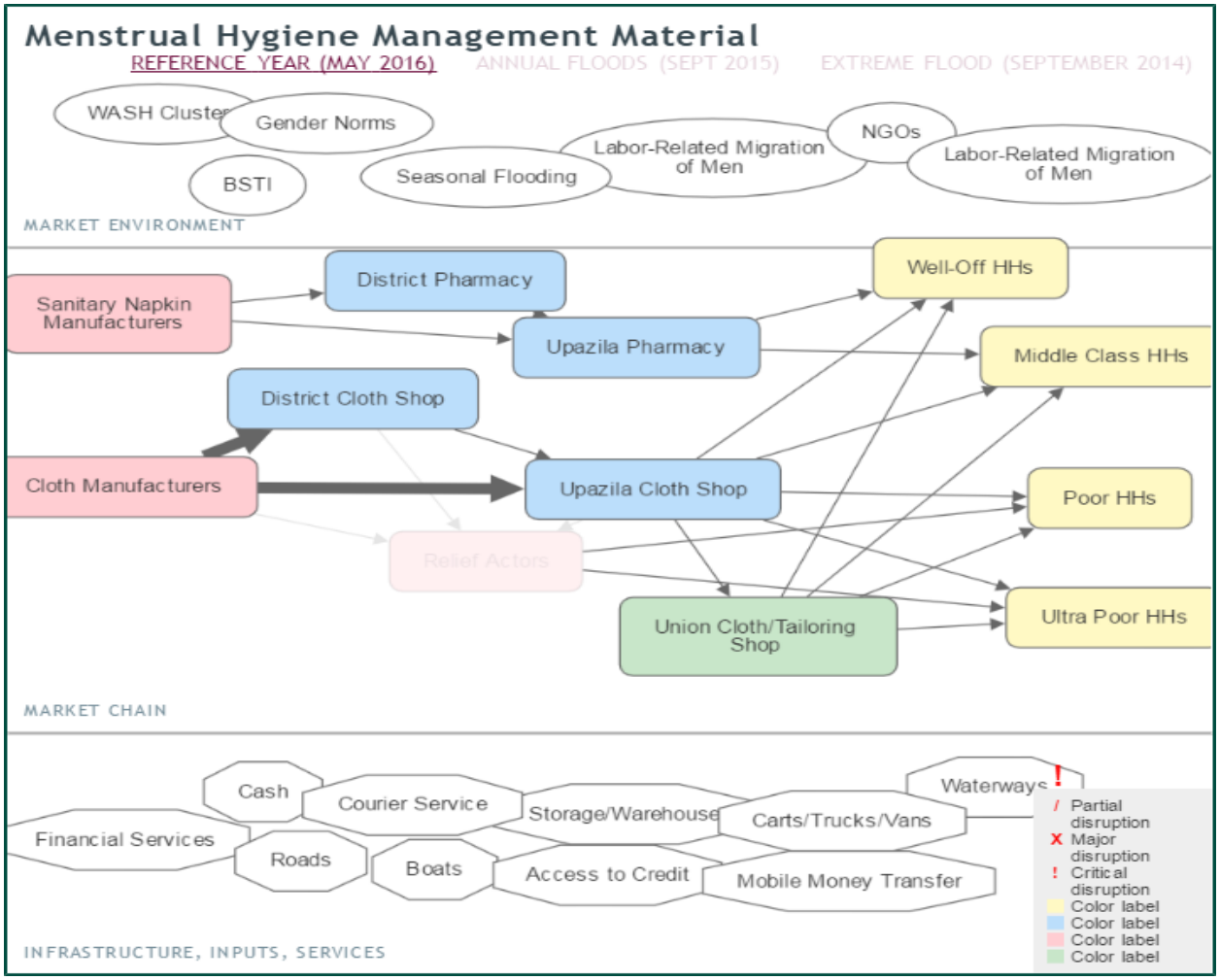
budget for transportation, and hence are limited in their ability to distribute ORS beyond the borders of their own villages; this is a significant barrier to the Community Health Clinics distributing ORS.

Response:
As with the soap market systems, relief actors begin to distribute one off, in kind products, as part of a NFI kit. These kits are distributed some in areas where the land is higher and begin to be delivered 10-20 days following the inundation. The relief actors typically 5 sachets of ORS per person[7]. In some cases, when the affected population does not have access to ORS during floods, households prepare it manually (sugar-salt solution, as training on this is part of ongoing outreach by CHWs.

SECTION 7: THE MENSTRUAL HYGIENE MANAGEMENT (MHM) MATERIAL MARKET

7.1. Current market situation

The map below is a visual depiction of the market system during the dry season (non-flood periods).



[7] Bangladesh WASH Cluster, *WASH NFI Information*, 2016.

Market System

There are several actors involved in MHM market system:

Sanitary Napkin Manufacturers: there are several manufacturers, most located in or around Dhaka. Private manufacturers employ 'distributors' on a regional level, whose role is to oversee stocks of soap in regional depots (warehouses) and manage all sales to pharmacies and grocery shops at the District, Upazila, and Union level. The distributor delivers the ORS to individual shops at the District, Upazila and Union level at no additional cost (delivery done by truck). The manufacturers immediately process orders upon receipt of payment from retailers and wholesalers, typically done via mobile money transfer (MMT).

Cloth Manufacturers: numerous manufacturers exist in country. Sell their products to wholesalers and retailers across the country, mostly at District and Upazila level. Cloth is sold by area (typically square meter), at a varying price based upon quality, colour, etc.

District Pharmacy: these are shops which stock a wide variety of pharmaceutical products. They serve as both retail outlets and wholesalers for grocery shops and pharmacies located at the Union and Village level. Typically maintain stock levels of 500 packets (8 – 12 pads per packet). Price = 70 BDT per pack.

Upazila Pharmacy: these are shops which stock a wide variety of pharmaceutical products. They serve as both retail outlets and wholesalers for grocery shops and pharmacies located at the Union and Village level. They typically maintain small stock levels of 20 packets (8 – 12 pads per packet), as there is little demand for sanitary napkins at this level. Price = 80 BDT per pack.

District Cloth Shops: these are shops which stock a large variety of cloths/saris. They act as both a retailer and wholesaler for smaller upazila and union level cloth shops. Cloth is sold by area (typically square meter), at a varying price based upon quality, colour, etc.

Upazila Cloth Shops: these are shops which stock a large variety of cloths/saris. They act primarily as a retailer. Cloth is sold by area (typically square meter), at a varying price based upon quality, colour, etc.

Union Cloth Shops: these are small shops which stock a variety of cloths/saris. They act strictly as a retailer. Cloth is sold by area (typically square meter), at a varying price based upon quality, colour, etc.

Target Population Access: Very few women in the char area purchase sanitary napkins; none of the women interviewed during the PCMA purchased sanitary napkins, and stated that only better-off HHs purchased these items.

The majority of women interviewed in the PCMA stated that they use old cloths/saris for menstrual hygiene management, and also stated that they were satisfied with this option. They do not purchase new cloth for this purpose, and when they receive new cloth from relief actors as part of a hygiene kit distribution, they typically use this cloth to make new clothes for members of their household, not to avail older saris for use as MHM material.

A small number stated that they purchase reusable cloth panties with an absorbent fabric sewn into them, though no women were able to say from whom they purchased these or where they are sold; there were also not found in any of the retail markets.

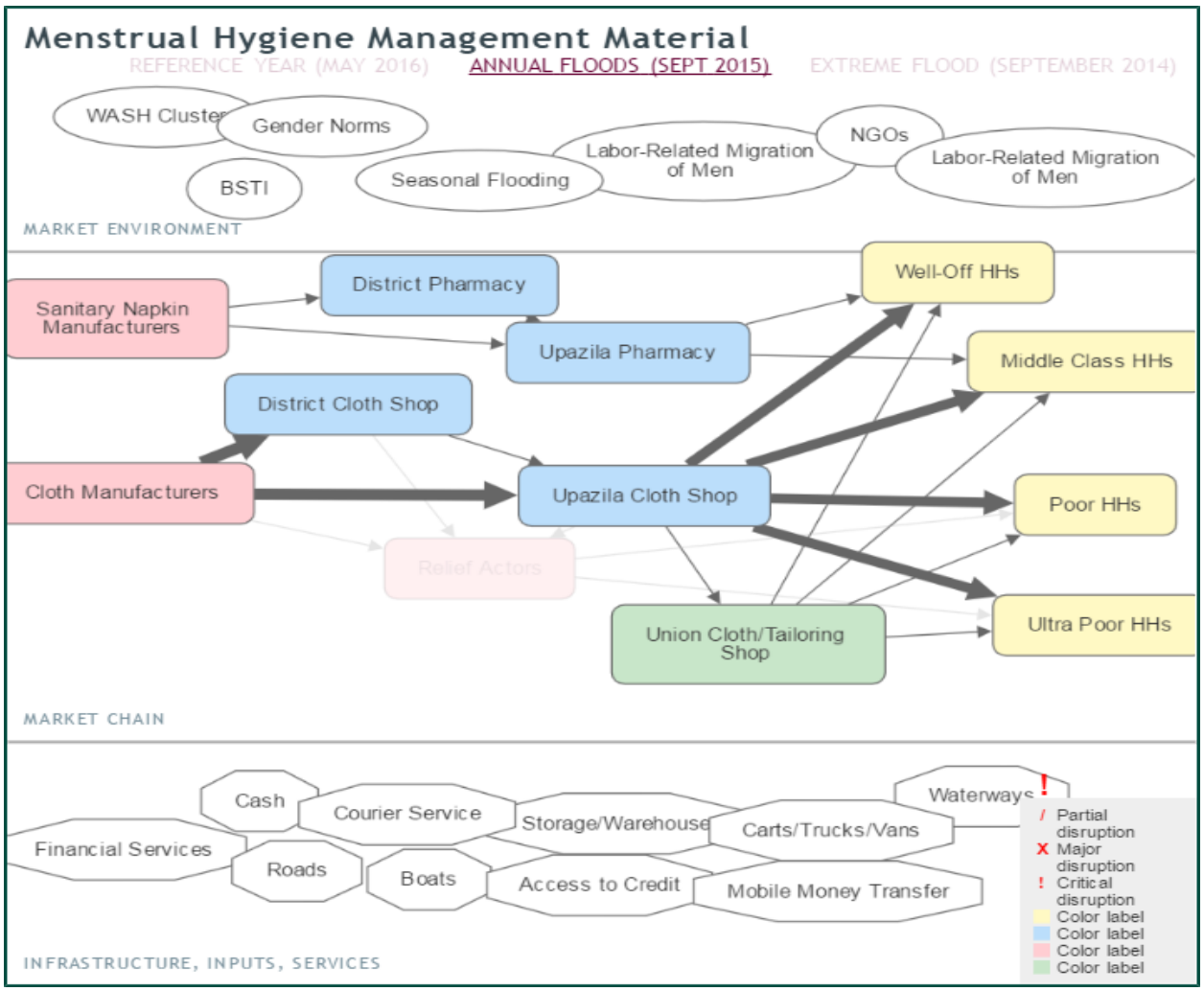
While women are not opposed to using sanitary napkins, they stated that cost is a barrier; the use of old cloths/saris is free, and the reusable panties are also more cost-effective than purchasing consumable items. Women in the FGDs and HH interviews stated that the use of sanitary napkins would necessitate the purchase of one packet of napkins per month, at a cost of 100 taka per packet.

Market Environment

Unique factors in the market environment which affect the MHM market include:

- Preference – the preference among older women is to use old cloth/saris for MHM; among younger adolescent girls, there is increasing preference for sanitary napkins.

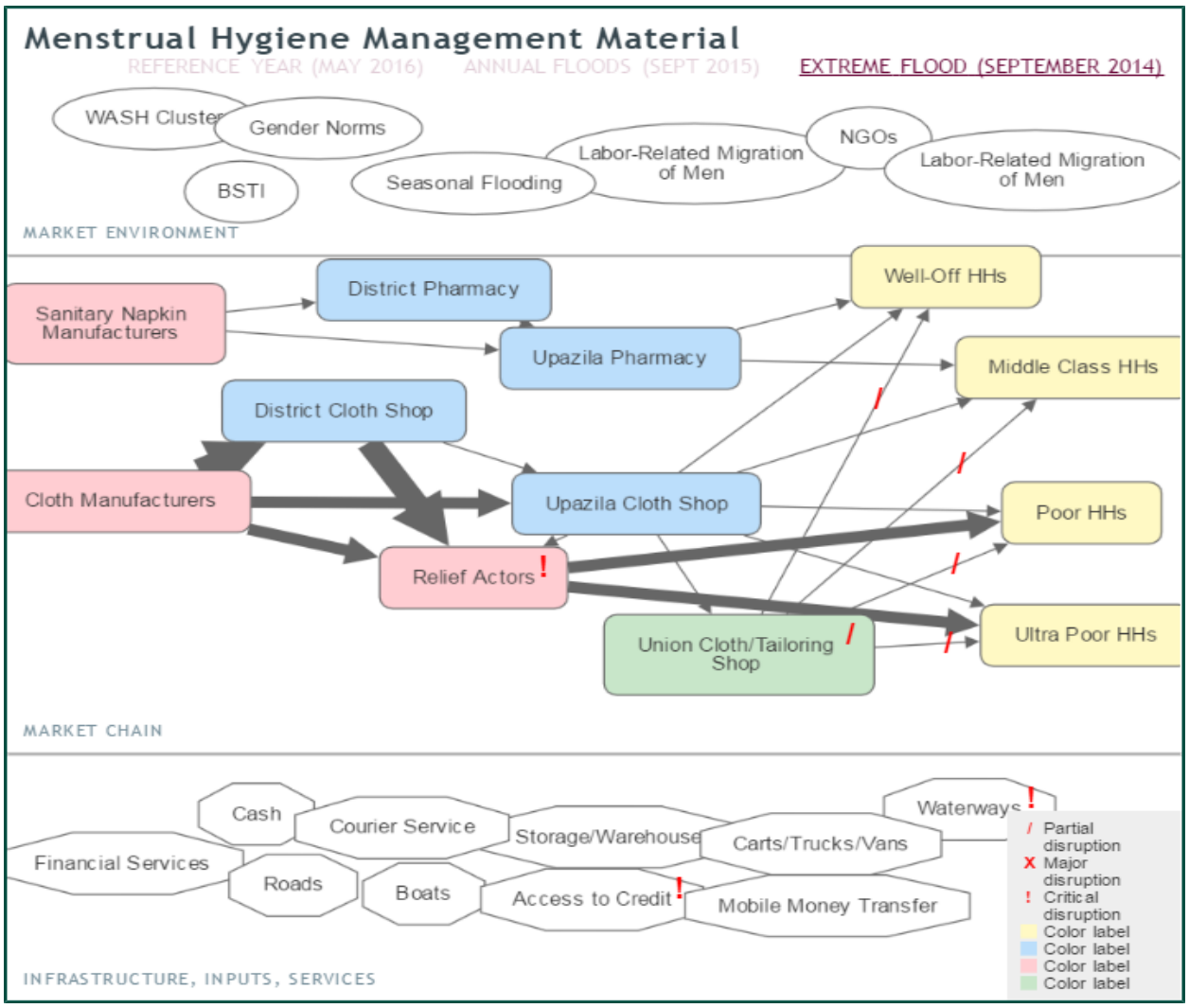
7.2 Crisis situation - Normal Flood (September 2015)



During this annual period of flooding, the market continues to function as in the dry season.

Women state that it becomes easier to use their reusable sanitary cloths, as the abundance of surface water means that washing the cloths becomes easier.

7.3 Crisis situation - Extreme Flood (September 2014)



During an extreme flooding event, new actors enter the market chain. As with the soap and ORS market systems, upazila level shops remain largely unaffected during an extreme flood event (despite a few temporary closures in 2015). Some union level shops may suspend operations for 7 – 15 days if they become inundated with water.

The regional depots of the sanitary napkin continue to supply sanitary napkins to wholesalers and retailers at District and Upazila level, though boats typically replace trucks as the means of transportation during this period.

Response:
As in the above cases, relief actors tend to access their stock at either the central (Dhaka) level or the regional (Gaibandha) level, or in some cases they are warehoused in small contingency stocks in Gaibandha town; in other cases they are procured during the emergency period. The relief actors typically provide one cotton sari per household, as part of a larger hygiene kit (together with soap, ORS,

and a metal pitcher), with the intention that women can use to replace an old sari which can then be used for making new cloths for menstrual hygiene[8].

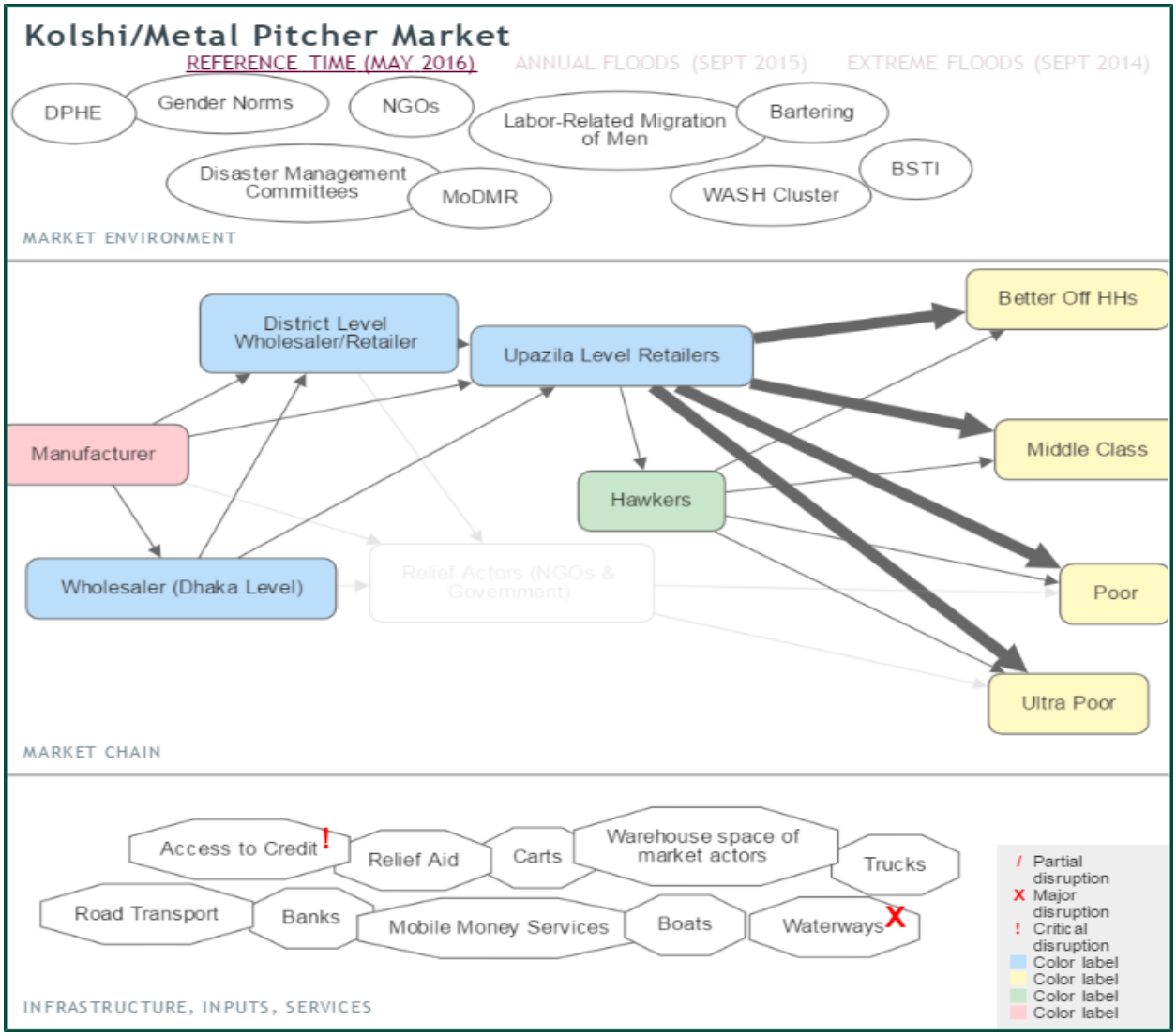
In FGDs and household interviews, women reported that menstrual hygiene materials were typically not a priority for them during flood emergencies, as they did not lose their reusable cloths during previous flood events.

SECTION 8: THE METAL PITCHER (KOLSHI) MARKET

A metal pitcher, or kolshi, is a 20-liter aluminium container which is commonly used by the target population, and typically distributed by relief actors in times of emergency.

8.1 The current market situation

The map below is a visual depiction of the market system during the dry season (non-flood periods).



[8] Bangladesh WASH Cluster, *WASH NFI Information*, 2016.

Market System

There are several actors involved in sanitary napkin market system:

Metal Pitcher Manufacturers: there are several manufacturers, most located in or around Dhaka. Manufacturers have 'showrooms' which sell pitchers directly to shops at the District level. They also sell their products to wholesalers, who in turn sell them onwards to shops at the Upazila level. The manufacturers immediately process orders upon receipt of payment from retailers and wholesalers, typically done via mobile money transfer (MMT).

Wholesalers: Sell large quantities of metal pitchers to Upazila level retailers.

District Shops: these are shops which stock a wide variety of metal and plastic products, mostly kitchen utensils (pots, pans, cutlery, pitchers, jugs) and buckets. They serve as both retail outlets and wholesalers for metal/plastic shops located at the Upazila level (though only as a last resort when upazila shops cannot obtain pitchers from Dhaka-level wholesalers). Typically maintain stock levels of 500 pieces.

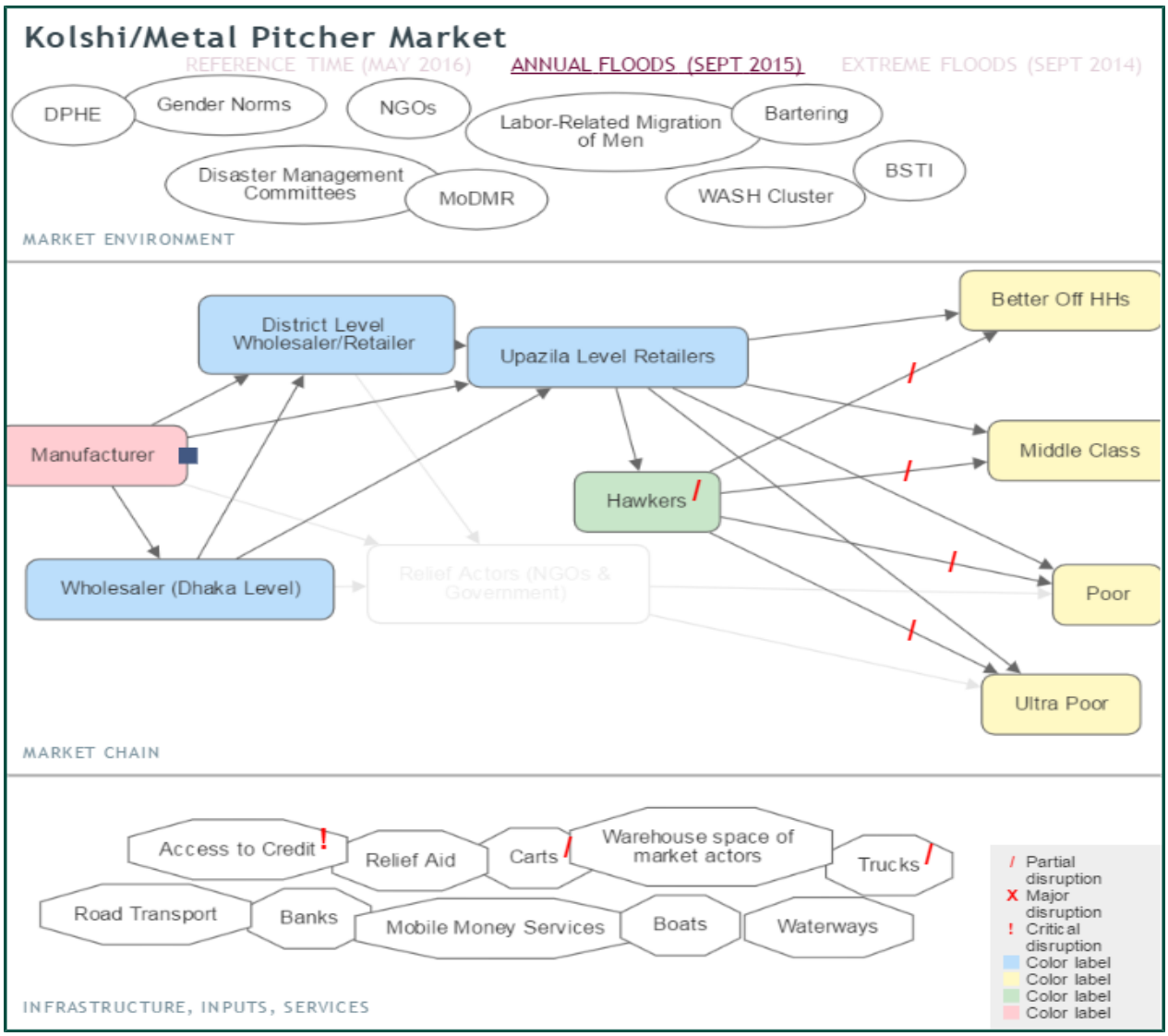
Upazila Retailers: : these are shops which stock a wide variety of metal and plastic products, mostly kitchen utensils (pots, pans, cutlery, pitchers, jugs) and buckets, and serve strictly as retailers (both to the target group and hawkers). They typically maintain small stock levels of 50 – 100 pitchers per shop, as metal pitchers are only purchased by households every 2 – 4 years.

Hawkers: businesspeople who travel to small villages during the dry season, selling a multitude of items (including metal pitchers) door to door, using small cart. Typically carry only a small number (5 – 10) of metal pitchers. Do not sell during the rainy season.

Metal pitchers are typically priced at 300 taka per piece at the District and Upazila levels, though price varies somewhat as they are sold by weight, not per unit. Hawkers sell metal pitchers at a fixed rate, typically 350 – 400 taka per piece.

Target Population Access: Metal pitchers are not a fast-moving consumable, as households typically use them for 2 – 3 years (or longer) before replacing them. Households sometimes trade harvested crops to hawkers for a metal pitcher; they also sometimes trade in an older metal pitcher in order to obtain a discounted price for a new pitcher.

8.1. Crisis Situation - Normal Flood (September 2015)

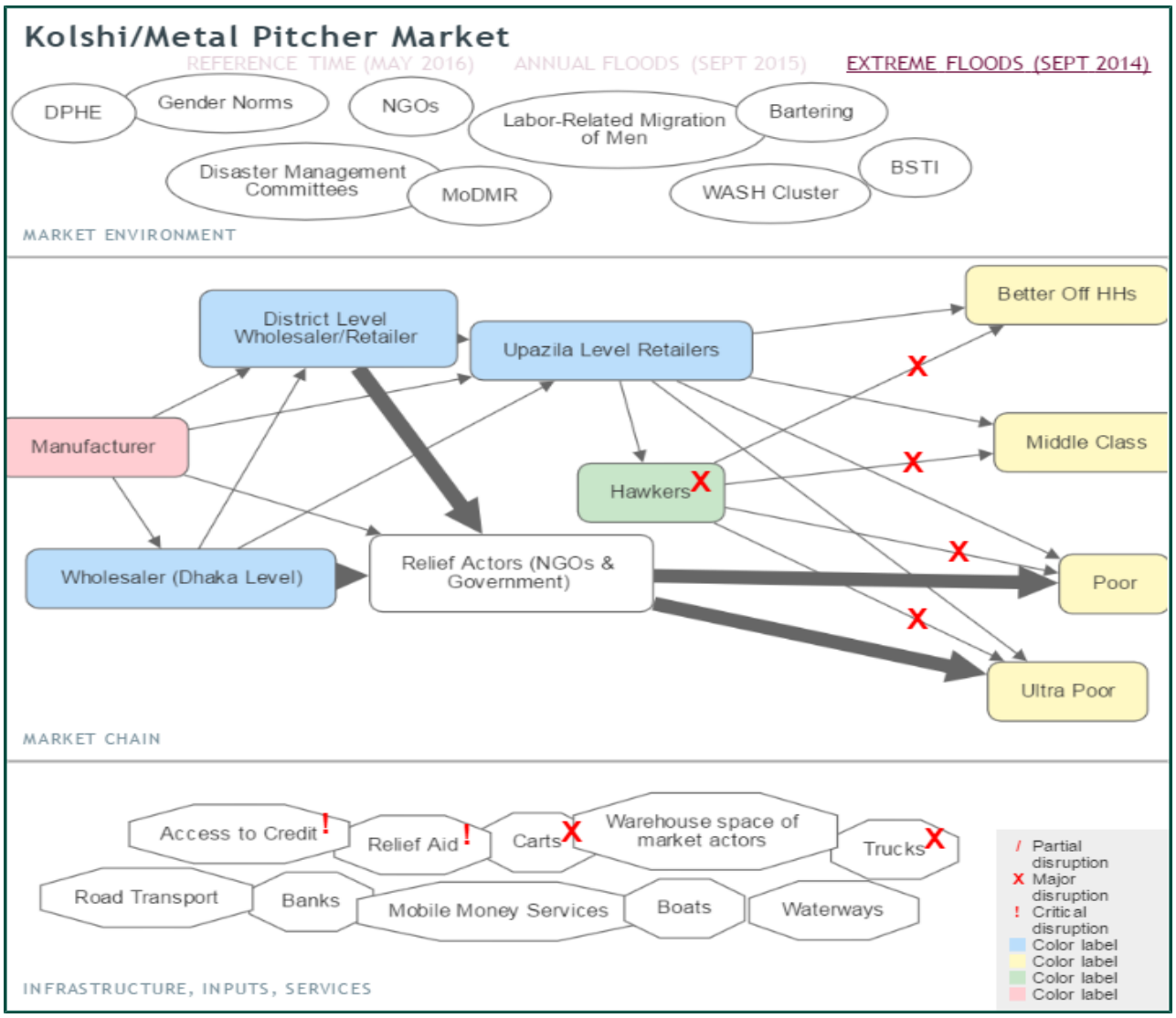


During this annual period of flooding, the market system changes somewhat.

Hawkers stop selling in the villages, as (a) flood water makes it more difficult for them to transport goods to villages with their carts, and (b) the cheaper boat transportation which becomes available during the normal floods makes it easier for the target population to access cheaper priced metal pitchers at Upazila level markets.

Upazila and District level shops are unaffected by the normal floods, though their sales increase due to peoples' increased access to these markets.

8.3 Crisis Situation - Extreme Flood (September 2014)



During an extreme flooding event, new actors enter the market chain. Upazila level shops remain largely unaffected during an extreme flood event; the Fulchhari market experienced a small level of flooding in September 2014 and some shops received minor damage, but reported that repairs made within 2 – 3 days and they did not lose functionality. Supply lines remained uninterrupted.

Response:

As part of a distribution of a larger hygiene kit, agencies responding to the floods have tended to purchase their pitchers at the central or regional level. The relief actors typically provide one metal pitcher per household[9].

In FGDs and household interviews, women reported that metal pitchers were typically not a priority for them during flood emergencies, as they typically do not lose their pitchers during floods, especially as most households remain in their homes when floods occur. Even when households are displaced, they typically take essential items with them, including metal pitchers and water containers. Many people

[9] Bangladesh WASH Cluster, *WASH NFI Information*, 2016.

stated that the priority need during flood events is a smaller water pitcher, approximately 5 litres in size that is easier to carry and fill at elevated hand pumps near their homes that remain above the water level.

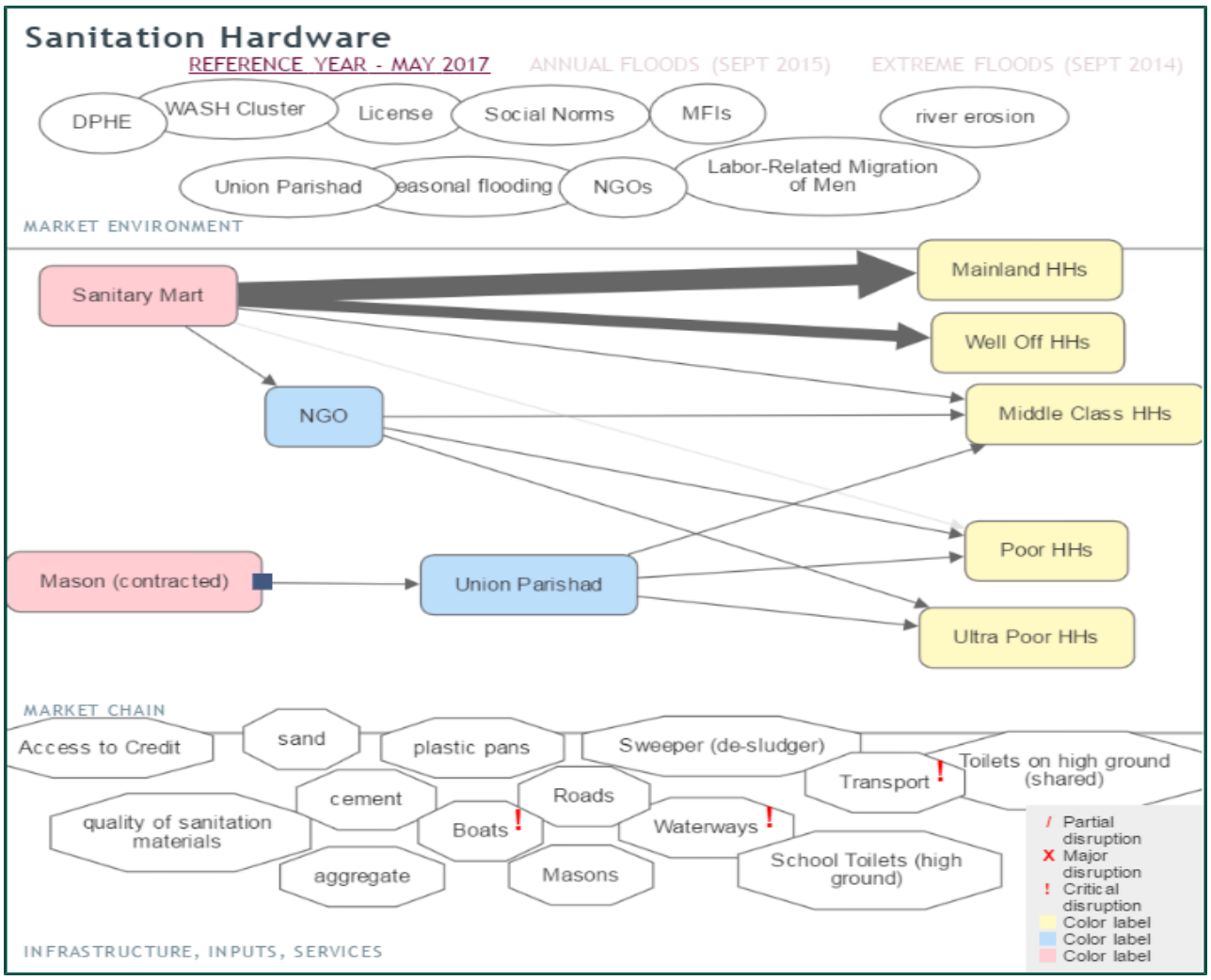
Some relief actors also distribute plastic buckets, either in place or together with the metal pitcher. Open buckets are not recommended during times of elevated public health risk, as studies have shown that open containers (without a narrow neck) are significantly more likely to become contaminated than a narrow neck container (such as a metal pitcher)[10].

SECTION 9: THE SANITARY LATRINE MARKET

A sanitary latrine here is referred to as two fundamental pre-fabricated components: (1) a concrete slab with embedded pour/flush pan, and (2) concrete rings (for the pit lining).

9.1 Current market situation

The map below is a visual depiction of the market system during the dry season (non-flood periods).



[10] L. Roberts, et al. "Keeping Water Clean in a Malawi Refugee Camp: a randomized intervention trial". *Bulletin of the World Health Organization*. 2001.

Market System

There are several actors involved in sanitary latrine market system:

Sanitary Marts: typically referred to as "SanMarts", these are small businesses staffed by concrete masons that produce and retail the slabs and rings. There are six SanMarts located in Fulchhari and Fazlupur, each with a production capacity of approximately 400 concrete slabs (with pans) and 1,600 concrete rings every two weeks. All SanMarts are located in mainland areas (none exist in the char areas). SanMarts tend to sell to mainland residents during the dry season and char residents in the rainy season.

Contracted Masons: Independent concrete masons who are contracted by Union Parishads or independent people to construct items on-site.

Union Parishad: a committee which exists at the union level, representing the interests of union residents and managing a small annual budget for union-level social projects. Sometimes implement sanitation projects at the union level, benefitting the target groups, as each union parishad possesses a target of 100% sanitation coverage. They typically employ contracted independent masons to construct toilets on-site.

NGOs: One of the largest clients of SanMarts, NGOs commonly procure materials for in-kind distribution to the target population, both during times of crisis and non-crisis. Some NGOs also hire contracted masons (similar to Union Parishads) to produce products on-site when the intervention area is remote and transportation of the sanitation components is perceived as a challenge.

Target Population Access: Approximately 50% of households in the char areas possess a latrine.

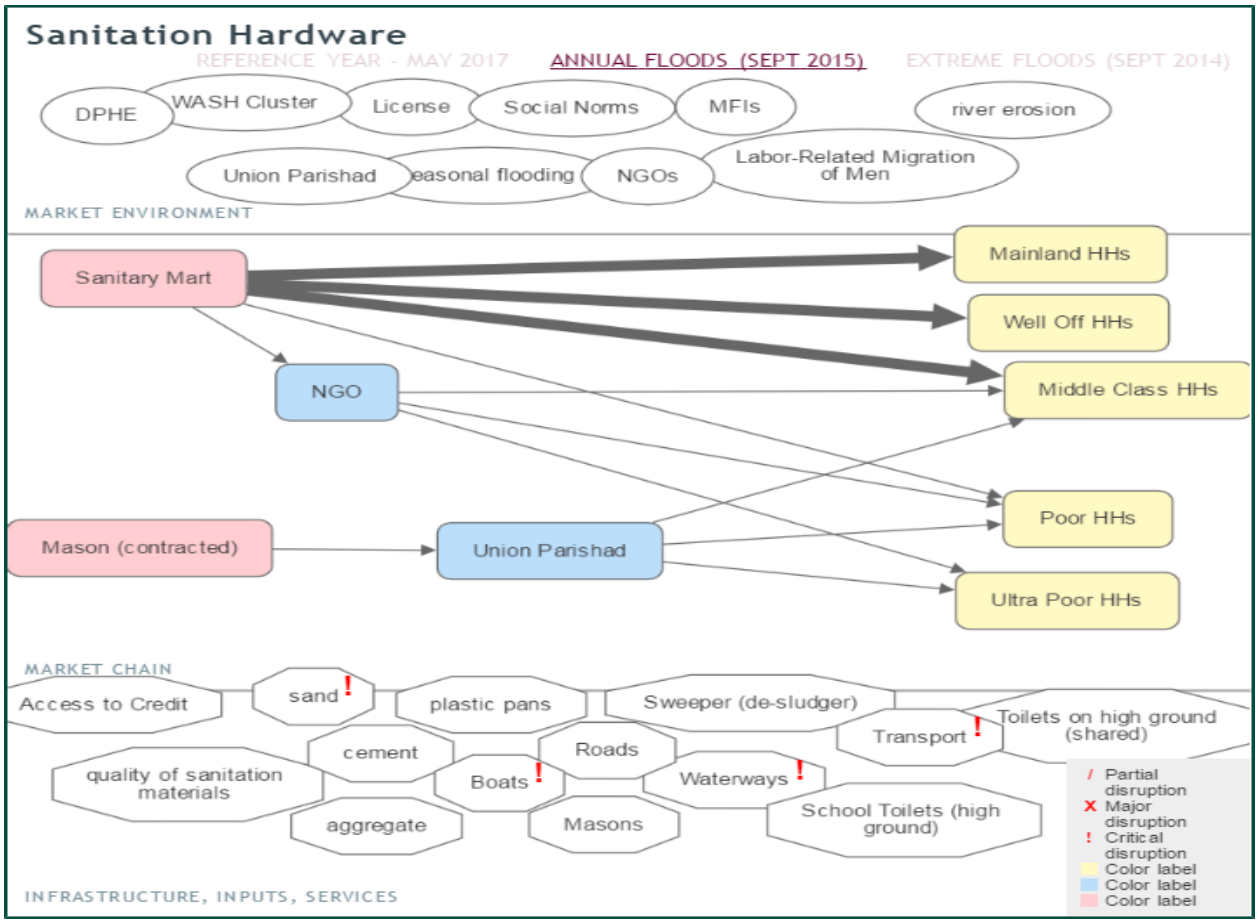
When purchasing a sanitary latrine, the typically 'package' consists of one slab and three concrete rings, which retails for approximately 1,500 taka. The price varies, however, based upon the quality of the components; for example, an unreinforced concrete slab costs 250 taka, while a higher quality reinforced slab costs 400 – 500 taka. Poorer HHs, however, will often times purchase an unreinforced slab with only one concrete ring (total cost of 400 – 500 taka); they use the concrete ring to line the upper portion of the pit (just below the slab), and use woven bamboo mats to create makeshift rings below the concrete ring. The result of this, however, is an unstable latrine structure, which easily becomes damaged and requires replacement on an annual basis.

During the dry season, the primary clients of Sanitary Marts are residents of the main land areas, as well as a smaller number of better-off households in the char areas. Very few members of the target groups purchase latrine materials in the dry season, as the transportation (which involves a combination of boat and horse cart) is prohibitively expensive (700 – 800 taka).

Union Parishad sanitation projects are typically completed in the dry season. The quality of these latrines is typically poor, as the quality of construction is not typically monitored.

When latrine pits become full, households typically construct a new pit and transfer their slab, as the few desludging services which exist in the area charge approximately 1000 BDT to empty a pit.

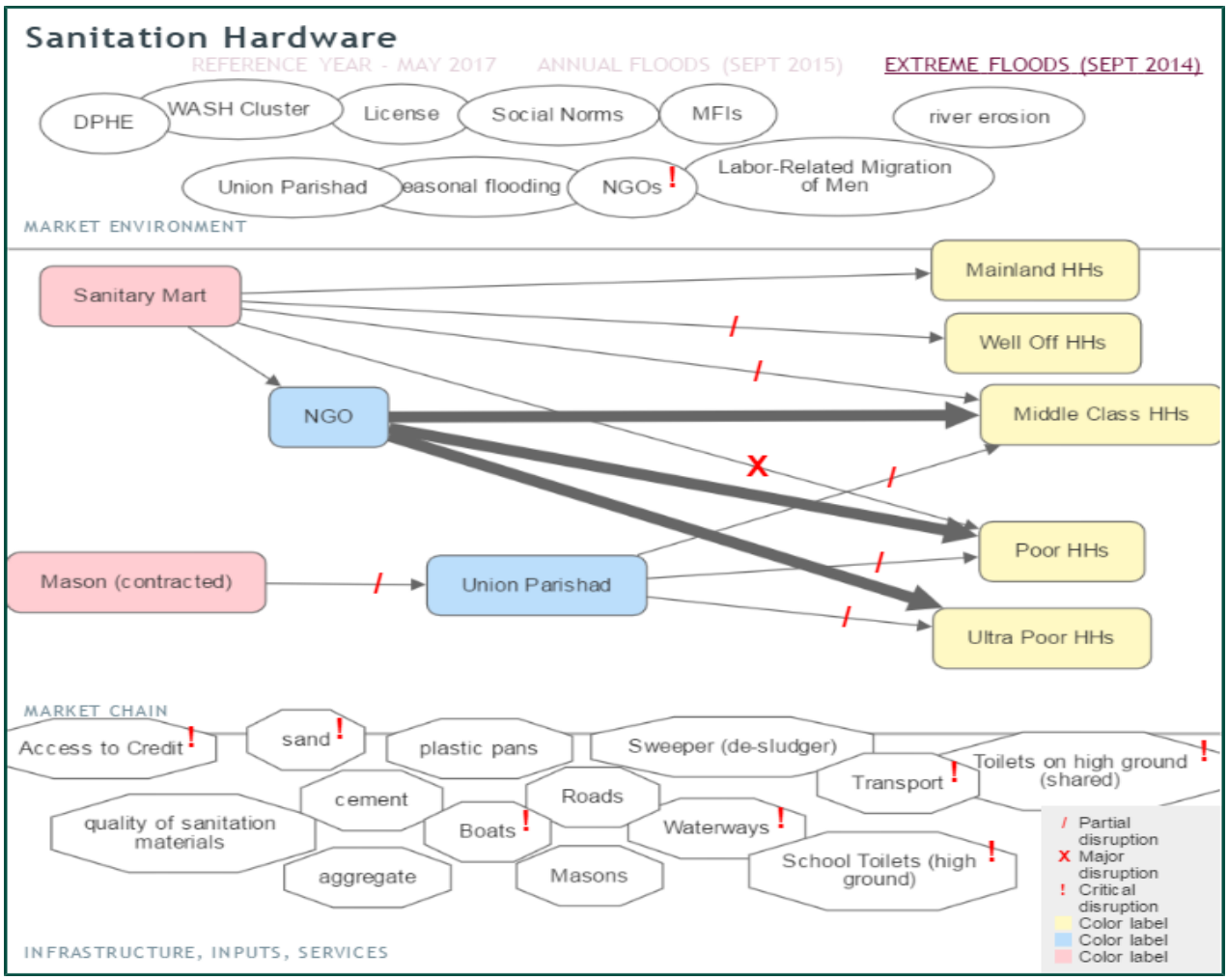
9.1 Crisis situation - Normal Flood (September 2015)



During the normal flooding period, demand for latrines increases substantially in the char areas. This is due to two reasons: (1) target households in the char areas harvest their crops and sell them in April/May, providing them with disposal income which they can spend on latrines; (2) boat transport makes it possible to transport latrine materials for approximately 100 taka, significantly cheaper than the cost during the dry season. Although it's difficult to install the latrines during this time (possible inundation), it is the only time when it is feasible for households to purchase them.

SanMarts continue to function as in the dry season, as they are unaffected by the normal floods. Peak sales to char households occur in June and July, typically.

9.2 Crisis situation - Extreme Flood (September 2014)



During an extreme flooding event, char residents in the target groups overwhelmingly identified sanitation as a priority need, particularly women. Many latrines become inundated with flood water and become unusable, many of them permanently damaged, either due to their poor quality or their poor location.

Households who do not own a latrine, or whose latrine becomes inundated and unusable, either share a latrine which is located on high ground, or (more commonly) resort to open defecation. This is often times done on makeshift rafts constructed from the trunks of banana trees; a makeshift privacy curtain is constructed such that a user can defecate off the side of the raft into the flood water. This is mostly an option for men, however, as women only use this option at night, and often times reduce their food intake in order to reduce the need to defecate. Women overwhelmingly identified the need for safe latrines as the top priority in times of flood.

SanMarts, located in the mainland area, are unaffected by the floods and continue their business uninterrupted. Though demand from char residents decreases during this time, this lost business is more than compensated for by the increased business from NGOs and other relief actors.

During this period, Relief Actors (INGOs, NNGOs, and government disaster response programs) enter the market system. Typically, emergency sanitation facilities are only provided to displaced populations

staying in established displacement locations; however, substantial support is often given post-flood, in the form of in-kind provision of latrine materials - one concrete slab (with pan) and three concrete rings (for lining of the pit) purchased from SanMarts in the area and distributed to target beneficiaries without latrines. Target groups reported that these latrines were sometimes of poor quality, and/or were installed in low-lying areas, making them susceptible to future floods. Targeting of households for provision of latrines is inconsistent, as some actors target households whose latrines were damaged during the flood, while others target households who did not possess latrines prior to the flood.

SECTION 10: WASH NFIS: ANALYSIS AND RECOMMENDATIONS

10.1 Gap Analysis

All of the hygiene NFIs included in the PCMA (bathing soap, laundry soap, sanitary napkins, metal pitchers, and ORS) have been combined into a single gap analysis, as they are all included in typical hygiene kits.

Target Group	Population (persons)	Item	HH Need (per person)	HH Shortfall	Total Gap	Duration	Modality Preferred
Ultra Poor	29,455	Bathing Soap (100g bar)	100g (1 bar)	100g (1 bar)	29455 (100g bars)	2 weeks	cash or commodity voucher
		Laundry Soap (50 g bag)	50g bag	50g bag	7363 (200g bags)	2 weeks	cash or commodity voucher
		Kolshi with lid	1 pitcher	1 pitcher	5891	2 weeks	cash or commodity voucher
		Sanitary Napkin (1 packet)	1 packet	1 packet	5891	2 weeks	cash or commodity voucher
		Bleaching Powder	100g	100g	2946 kg	2 weeks	cash or commodity voucher
		ORS	5 sachets	5 sachets	147275 sachets	2 weeks	cash or commodity voucher
Poor	10,450	Bathing Soap (100g bar)	100g (1 bar)	100g (1 bar)	10450 bars (100g bars)	2 weeks	cash or commodity voucher
		Laundry Soap (50 g bag)	50g bag	50g bag	2613 (200g bags)	2 weeks	cash or commodity voucher
		Kolshi with lid	1 pitcher	1 pitcher	2090	2 weeks	cash or commodity voucher
		Sanitary Napkin (1 packet)	1 packet	1 packet	2090	2 weeks	cash or commodity voucher
		Bleaching Powder	100g	100g	1045 kg	2 weeks	cash or commodity voucher

		ORS	5 sachets	5 sachets	52,250 sachets	2 weeks	cash or commodity voucher

In Bangladesh, the WASH Cluster has set minimum requirements in terms of hygiene items to be provided to target beneficiaries during a humanitarian crisis; these minimum requirements were used in the numerical calculation of the gap analysis. The population used in the calculation of the gap analysis represents the entire population in the two unions which is categorized as poor and ultra poor (approximately 84% of the population).

10.2 Market Capacity Analysis

The market capacity analysis was estimated using (a) the number of shops selling the critical market items, (b) the average stock of items held by market actors, and (c) stocks held in regional depots/warehouses.

Item	HH Gap	Market Volume (normal time)		Market Volume (normal flood)		Market Volume (expandability)	
		Upazila	District	Upazila	District	Upazila	District
ORS (sachets)	199,525	16,620	350,000	20,500	600,000	128,000	10,000,000
Bathing Soap (100g bar)	39,905	55,600	170,000	55,600	170,000	120,000	500,000
Laundry Soap (200g bag)	9,976	50,000	177,000	50,000	177,000	100,000	500,000
Sanitary Napkins (packet)	7,981	100	34,600	100	34,600	2,000	94,500
Metal Pitcher (Kolshi)	7981	400	1,800	600	1,800	3,200	25,000
Chlorine Tablets		0	0	0	0	0	0
Bleaching Powder (kg)	3,991	0	500	0	1,500	0	4,500

10.3 Response Recommendations

The gap and market capacity analyses demonstrate a demand-side problem; the market can meet the demand for the five WASH NFIs (ORS, bathing soap, laundry soap, sanitary napkins, and metal pitcher), the barrier is the demand side, namely purchasing power during an extreme flood event. As extended floods reduce the available labour employment opportunities, purchasing power is reduced during these periods.

The key recommendations for the provision of WASH NFIs during future flood emergencies are:

7. As the barrier to target groups accessing essential WASH NFIs is a demand-side issue, and the market has the capacity to meet the demand (as per the HH gap analysis), provision of essential WASH NFIs (bathing & laundry soap, ORS, menstrual hygiene materials, and metal pitchers) should be distributed via a cash-based modality). Discussions with target groups highlighted that the preferred modality is a cash voucher system, in which the voucher would be limited to the selection of pre-approved products;
8. As nearly the entire population of Fazlupur and Fulchhari unions travel to the large Fulchhari Market to purchase goods during floods, the cash-based modality should be established with these market traders.

9. If chlorine tablets are to be distributed, they should be distributed to the target group in the Fulchhari Market at the same time that the cash voucher is redeemed;
10. The market actors who act as wholesalers stated that they are able to invest 50,000 – 300,000 BDT in the purchase of additional stock if necessary. Beyond this amount, relief actors should assess the need to provide up-front capital (in the form of advance payment, cash grant, or soft loan) to ensure sufficient stock in the marketplace.
11. Development of an essential WASH NFI 'basket', in order to determine the value of any cash voucher that is developed. This should be done at the WASH Cluster level, in order to ensure agreement and adherence by all WASH stakeholders likely to be involved in future responses;
12. The distribution of bleaching powder should be discontinued, as members of the target group did not fully understand its intended purpose, nor is it considered an essential WASH commodity.

Response Activities	Risks & Assumptions	Likely Effect on Beneficiaries & Market	Timing	Implementation
Development of an essential WASH NFI' basket' with monetary value (to establish value of cash voucher)	-Active collaboration among aid agencies -Practical discussion involving national and local stakeholders		Preparedness phase (ASAP)	-Agree upon essential NFI 'basket' with WASH Cluster -establish monetary value of basket
Development of electronic cash voucher (e-voucher)	-pre-registration of potential beneficiaries	-more timely access to essential WASH NFIs -local markets experience increased sales during flood emergency	-Preparedness phase (ASAP)	-agree upon service provider for e-voucher (telecom company, Red Rose, etc.) -develop and pre-test e-voucher -develop system for e-voucher redemption at Fulchhari Market
Pre-registration of target groups	-populations are geographically stable -government and private sector cooperation		-Preparedness phase (ASAP)	-pre-registration of beneficiaries' (national ID, SIM card, etc.)
Development of framework agreements with Fulchhari Market actors to supply WASH NFI basket during emergency through e-voucher	-agreement on contract with market actors -quality of NFIs can be ensured	-sufficient minimum stocks held at Fulchhari Market level -Fulchhari Market actors to supply all WASH NFIs in flood emergency	-Preparedness phase (ASAP)	-agree upon minimum stock levels to maintain -agree upon NFI minimum specifications -agree with Market Association that all products would be grouped together in single shops (such that voucher can be redeemed at a single shop) -sign agreement

Provide essential WASH NFIs through e-voucher system	-target groups remain in their home or close to home -access to transportation is uninterrupted	-Facilitates access to hygiene NFI traders for beneficiaries with limited purchasing power -Meets immediate HH emergency needs in first phase of emergency	Emergency Phase	-introduce point-of-payment technology/system for traders -Sensitize target groups on redemption system
Advocacy with NGOs, UN agencies, donors and government to ensure consistency in modality of NFI provision	-WASH stakeholders are amenable to, and capable of, providing WASH NFIs through a consistent modality	-target groups shall be benefited in the same manner, avoiding inequalities in terms of emergency support provided	Preparedness & Emergency phases	- WASH Cluster to lead, in coordination with UNICEF Chief of WASH, DPHE, DMM, Cash Working Group
Support market actors to re-establish businesses in the event of flood damage	-businesses do not have equitable access to finance	-Ensures essential WASH NFIs are available in the market	Emergency phase	-agree upon size of grant/loan for trader

10.4 Choice of Cash Transfer Modality

The choice of modality for provision of NFI items (in-kind, cash grant, cash voucher, and commodity voucher) was discussed with the target group during FGDs and HH interviews, in order to gauge the preferred modality, as well as potential barriers and constraints to each. Members of the target groups overwhelming voiced their desire for a voucher-based modality for the provision of WASH NFIs, for the following reasons:

1. In-kind distribution of hygiene kits does not address the needs of individual households in their entirety;
2. While men voiced their preference for a cash grant to purchase hygiene items, women overwhelmingly stated that they prefer a voucher-based modality over unconditional cash grants. Women feared that men would use the cash on non-WASH items, but felt confident that a cash voucher would provide them essential WASH items while also providing the adequate choice to meet their household's individual needs;

FGDs and interviews confirmed that nearly the entire population possesses a mobile phone with a registered SIM card, and the majority of people have experience in using mobile money transfer (MMT) services. The previous Oxfam emergency response in this area in 2014 distributed cash grants via MMT services and post-distribution monitoring demonstrated that there were no significant barriers to beneficiaries (a) accessing the cash grant via MMT or (b) physically accessing the market place. For these reasons, it is recommended that any voucher-based modality utilize an electronic voucher (e-voucher), distributed via the mobile network. The use of an e-voucher is recommended for the following reasons:

1. The majority of relief actors are addressing food security gaps in flood emergencies through the use of unconditional cash grants, provided through MMT; the same SIM card registration done for MMT can be utilized to set up the e-voucher system;

2. Distribution of paper vouchers would require the same logistical work as the distribution of in-kind distribution of hygiene kits (travel to each village to physically distribute vouchers), and likely prove to be nearly as time-consuming;
3. An e-voucher designed and tested in the preparedness phase, can be sent to the entire target population at one time, with minimal delay.

SECTION 11: SANITARY LATRINE MARKET SYSTEM: ANALYSIS AND RECOMMENDATIONS

11.1 Gap Analysis

While the immediate need during a flood emergency is temporary, rapidly-deployable sanitation facilities, most NGO interventions tend to focus on post-emergency, early recovery sanitation options, as described previously.

While sanitation service providers (SanMarts) do not possess the capacity to respond to urgent humanitarian needs, they do possess the capacity to meet post-emergency recover needs as demonstrated by the gap and market capacity analysis.

Item	HH Gap	Market Volume (normal time)	Market Volume (normal flood)	Market Volume (expandability)
		Upazila	Upazila	Upazila
concrete slab with pan	7,891	2,600	3,500	9,000
concrete ring	23,673	10,000	15,000	35,000

The six SanMarts located within Fulchhari upazila possess the capacity to produce sufficient sanitation products for the entire proportion of the target population identified as ‘poor’ and ‘ultra poor’. This demonstrates that this is a demand-side problem, as the primary barrier to the target group accessing sanitation products is a lack of purchasing power. This results in poor households either (a) practicing open defecation, as a latrine is beyond their purchasing power, or (b) purchasing cheaper, lower-quality sanitation products that are easily damaged and have a short life span (often times less than one year). Households residing in char areas are also ineligible for micro-finance loans from banks (anyone residing within a 10 km radius of the char is ineligible), further limiting their ability to make capital purchases. Char residents wishing to access credit must do so from ‘informal’ credit providers, who charge upwards of 120% per annum interest rates.

11.2 Post-Response Recommendations

As the problem of insufficient sanitation is a *demand-side* issue, any post-emergency interventions should approach it as such. Interventions should aim to support the target population’s access to existing sanitation markets, as opposed to establishing a parallel market system through in-kind provision of sanitation materials. This can be done through one or a combination of several potential modalities:

6. Several development actors are in the process of introducing sanitation marketing programs, with an objective of providing affordable, pro-poor financing options specifically for household toilets/latrines; this shall likely include char areas. Any post-emergency sanitation interventions

should aim to link target beneficiaries to these programs, as opposed to providing in-kind provision of hardware.

7. There is a single toilet design available in the market, which is not completely appropriate for low-lying flood areas. Post-emergency interventions should aim to work with SanMarts in order to develop low-cost, flood-appropriate options for residents of the char areas;
8. In areas where no sanitation marketing or micro-finance options exist, relief actors should, at the very least, aim to provide sanitation materials through the local market, e.g. through a commodity voucher (partially or fully subsidized) or similar.
9. Any provision of toilets should also ensure that toilets are not constructed in areas likely to be flooded again in the near future. Several organizations implement Cash for Work (CFW) activities centered upon plinth raising for houses; this could be extended to include plinth raising for toilet construction as well, and serve as a conditionality for receiving support to access a toilet from the SanMarts.
10. The DPHE maintains responsibility for ensuring the quality of toilet components produced by SanMarts, and has provided trainings for SanMart masons in the past. Any intervention which targets sanitation should work in partnership with the DPHE to ensure that minimum quality standards are met by the SanMarts' products, and reduce the sales of cheaper, lower-quality products. This will necessitate awareness-raising of quality aspects with the target population as well.

11.3 Response Recommendations

Emergency sanitation during floods was cited as the priority need across the entire char area, particularly by women, who have no options for safe and private defecation during times of flooding. While Oxfam has prototyped and piloted (in a non-emergency setting) a floating toilet, it has never been utilized for times of flood. Oxfam should discuss the possibility of prototyping a pre-fabricated version of this toilet (private sector manufacturers such as RFL Plastics frequently partner with the NGO sector to prototype WASH products), for pre-positioning in areas of frequent flooding.

SECTION 12: MONITORING & UPDATING THE RESULTS

Monitoring the critical market systems studied in this PCMA and updating its results are key to ensuring that the present findings and recommendations remain relevant, as well as to make sure that they are adjusted if the situation evolves. Key recommendations on these activities are explained below.

12.1 Market Monitoring

Ongoing monitoring of the critical market systems aims to identify any major changes in how the market functions which might have implications for programming. Markets are dynamic in nature, and if the shock analyzed here does not occur immediately, it will be crucial to monitor how markets behave over time in order to keep the findings and recommendations up to date. Regular monitoring is essential, and the following monitoring plans provide suggestions as to what to monitor and how to do it, for each critical market system.

Local leaders/government and local NGOs should be involved to the greatest extent possible. As the PCMA team collected the phone contact details of market actors, phone calls can be arranged to collect data in order to optimize time and resources (but in-person visits should take place again after a few months to maintain rapport).

A small technical working group can be established for participating agencies to follow up monthly on the ongoing monitoring results and to discuss needs for adjustments to findings and recommendations. A dedicated person should be appointed to oversee data compilation and analysis.

Type of Indicator	Indicator	When	Who to Talk To	Method of Data Collection
HH Level	Income	Every 3 months	HH members	HH visits; FGDs, phone calls
	Expenditure			
	Market Access			
	Access to essential WASH NFIs			
	Changes in Preference of WASH NFIs			
Market System Level	Access to transportation	Monthly	Market Actors	Phone calls
	Flood/water level in char		DMC	
Market Place Level	Prices of WASH NFIs	Monthly	Market Actors	Phone calls
	Availability of WASH NFIs		Market Actors & DPHE	
	Stock levels (up to depot level)		Market Actors	
	Hospital Stock Levels of ORS		Civil Surgeon	
	Sales/demand at markets for WASH NFIs		Market Actors	

12.2 Comparative Analysis: In-Kind vs. Cash-Transfer Programming

Ultimately, the choice of modality for the provision of essential WASH goods and services should be based upon which modality is most timely and effective in meeting the intervention's intended public health outcomes (the reduction of morbidity/mortality due to diarrheal disease). In order to determine

which modality is more effective in responding to the target group's needs, a monitoring framework must be established to perform a comparative analysis between various modalities. This analysis should include factors related to: cost effectiveness, timeliness, and quality.

In order to determine cost effectiveness across modalities, implementer's should establish a monitoring system which allows them to calculate the cost to the implementing agency to deliver a fixed value of aid (e.g. 100 USD) to beneficiaries using different modalities. This builds upon the approach utilized by Catholic Relief Services (CRS) in their post-Typhoon Yolanda recovery projects in Philippines[11] which compared the provision of shelter through different modalities (and consequently demonstrated that cash-based modalities were significantly more cost-effective than in-kind provision).

In order to compare cost-effectiveness across differing modalities, the following information should be collected for each modality:

In Kind Response Modality	
Indicator	**Unit**
Time spent on framework agreements with suppliers at Dhaka level	man-days
Time spent on procurement of items	days
Cost of procurement	BDT
Time spent on transportation of items	days
Cost of transportation of items	BDT
Time spent to package goods and dispatch to destination	days
Time spent by Logistics/Finance staff on procurement, transportation, and distribution of goods	man-days
Time spent by program staff on beneficiary registration	man-days
Time spent by program staff on the distribution of items	man-days

Cash Based	
Indicator	**Unit**
Time spent on establishment of framework agreements at Gaibandha level	man-days
Time spent by program staff on beneficiary registration	man-days
Time spent on sending of voucher to beneficiaries	man-days
Cost of WASH items (value of voucher + transaction costs)	BDT

Additional quantitative and qualitative information is required to compare timeliness and quality of service provision across the differing modalities, including the following:

1. Time from the onset of the crisis to the delivery of items to the target population;
2. Quality of the items received;
3. Ease of receiving the items (e.g. were there any barriers or obstacles to redeeming vouchers; were beneficiaries required to travel a long distance to receive in-kind distributions of hygiene kits; etc.);

[11] Pintakaski. 2016. A Review of Shelter/WASH Delivery Methods in Post -Disaster Recovery Interventions.

4. Appropriateness of the items received (e.g. were the items received in hygiene kits appropriate to meet essential WASH needs of beneficiaries; were beneficiaries able to meet their essential WASH needs with items obtained in the market through the cash voucher; etc.);
5. Effect on market actors (e.g. how were market actors affected by in-kind distribution of goods or the use of a cash voucher system);
6. Beneficiaries' satisfaction/preferences with regards to the differing modalities.

SECTION 13: ANNEXES

Annex 1 - WASH Cluster List of Recommended Items (needed)

Water NFI	Sanitation NFI	Health & Hygiene NFI	Community Clean- UP NFIs
Plastic Jerry cans	Plastic badna/ flushing pot	Soap For hand/body washing, laundry and dishwashing	Big metal shovels, picks
Metal pitchers with lid		No disposable sanitary cloths	Boots, gloves and overalls
Plastic Bucket with lid	Brush for latrine cleaning	Sanitary napkins	
Water Container (inside the latrines)	Bleaching Powder / latrine cleansing detergents	Mosquito net	
Water Purifying sachets or tablets (WPS/T)	Small shovel	Gamsa/ Towel	
Alum/fitkiri	Plastic potty for children	Toothpaste/ Tooth power + Tooth brush	
Liquid bleach	Non-disposable nappies	Bathing soap + Hairbrush/ comb	
Oral Rehydration Salt sachets	Sandals to enter latrines	Nail cutter	
Plastic jugs with lid / Mugs	Hand washing device	Metal cooking pans with lid	
		Plastic containers with covers	
		Plastic plates with covers/ dakna	
		Metal cooking spoons	

1.2: WaSH NFI technical standard information

Sl #	Item Name	Technical Standards
Water Storage		
1	Plastic Jerry cans	• Capacity: 10 -12 litres Material: PVC, or equivalent plastic material; UV resistant; withstand temperatures of 0°C to +50°C; suitable for storing drinking water (food grade). If possible collapsible • Colour: Colourless, transparent, or white • Fitted with: Carrying handle, sealer and a screw cap. • Drop test: When filled with water at 20°C, container must withstand a 1.8 meter drop on a hard surface (successful if no leakage occurs) Height of the drop is from ground level to bottom of container Weight-650gm
2	Metal pitchers with lid (Aluminium Kolsi)	• Capacity: 10 litres minimum, 16 litres maximum • Material: non-corrosive metal; possible aluminium, stainless steel • Fitted with: narrow neck, lid (attached to neck if Possible) Weight -800 gm
3	Plastic Bucket with lid	• Capacity: 10 litres minimum, 16 litres maximum • Material: PVC, or equivalent plastic material; UV resistant; withstand temperatures of 0°C to +50°C; suitable for storing drinking water (food grade) • Colour: transparent, white, or light colour • Fitted with: electroplated handle, plastic tight lid, plastic tap (ideally)

4	Water Container (inside the latrines)	• Capacity: 10 litres minimum, 16 litres maximum • Material: PVC, or equivalent plastic material; UV resistant; withstand temperatures of 0°C to +50°C; suitable for storing drinking water (food grade) • Colour: transparent, white, or light colour • Fitted with: electroplated handle, plastic tight lid, plastic tap (ideally)
5	Plastic jugs with lid	• Material: PVC or equivalent (food grade) • Capacity: 1 litre for jugs/0.25 or 0.5 litre mugs • Quantity: 1 jug, ideally 1 mug per household or at least 3 per household • Fitted with: lid for the jugs, handles for all
6	Hand washing device	• Designed Bowl 10 L – Green Colour with Oxfam logo • High Stool – Green Colour with Oxfam logo • Bucket with Lid 20L (Green Colour with Oxfam logo –light transparent - with Tap Fitting) - with Hygiene Message • Soap case - Green Colour with Oxfam logo
7	Plastic badna/flushing pot	• Material: PVC or equivalent plastic material • Capacity: 1 to 2 litres • Colour: if possible white or light colour • Fitted with: plastic lid (If possible)
8	Plastic Water Tank (1500,3000,5000,7500 L)	• Thread type lid. • 100% food grade. • Anti bacterial additive. • Double layer. • U.V. Stabilized
Water Purification		
9	Water Purifying sachets or tablets (WPS/T)	• Quality: Sachet or tablets to treat non-drinking water into safe water • Quantity: at least 2 weeks supply (2.5 litres/ person/day) • Easy to use (instruction to be followed as per manufacturer) • For turbid water, distribute tablets with alum (alum removes turbidity, tablets disinfect water). Sachets would be easier to use. • Must ALWAYS be distributed with appropriate, visual user guidelines and demonstration
10	Water purifying (chlorine) Liquid bleach	• Quantity: 250-500 millilitres bottle • Quality: 3 to 6% solution (depends on brand)(99% Sodium Hypochlorite) • Must ALWAYS be distributed with appropriate, visual user guidelines, training/demonstration, and explanations of potential risks
11	Alum/fitkiri	• Quality: crystal alum (household use, more familiar); aluminium sulphate (industrial use) • Quantity: 200 gram pouches • Must ALWAYS be distributed with appropriate, visual user guidelines and training/ demonstration • Alum only removes turbidity; after using alum, water must be disinfected with water purifying tablets, bleach (to be distributed with alum) or by boiling; sachets are easier to use
Health & Hygiene NFI		
12	Non-disposable nappies (for children)	• Material: dark cotton cloth/katha • Quantity and size: at least 4 pieces of 0.25 m2 each.
13	Sandals to enter latrines	• Material: soft plastic sandals • Quantity and size: 2 pairs per household (1 for adults, 1 for children); OR provide cash so that people can buy their size
14	Soap For hand/body washing (Bathing soap bars)	• Bathing and laundry soap should be distributed§ Dishwashing soap can also be distributed if available§ Quality (bathing soap): contain antiseptic agent§ Quantity: in disasters, at least 100 g bathing soap and 50 g laundry soap/person/month (at least during 2 first months); in conflict, refugees/IDPs should receive at least 250 g bathing soap and 200 g laundry soap/person/month (first few months)
15	Soap for laundry	200g laundry soap
16	No disposable sanitary cloths	• Each woman and adolescent girl should receive appropriate means to absorb and dispose menstrual blood, through distribution of: - 1 new cotton sari - or at least 3 pieces (1 m2 each) of highly absorbent, dark cotton fabric (to be used as non disposable sanitary cloth) - or panties and disposable pads for at least 2 menstruations (urban context only, if appropriate) • Saris and cotton cloths must ALWAYS be distributed with appropriate hygiene promotion on safe washing and drying

17	Mosquito net	• Material and quality: cloth or plastic mosquito nets, pre-impregnated with insecticide and distributed with a spare insecticide re-impregnation kit (must ALWAYS be distributed with appropriate, visual user guidelines, training/ demonstration, and explanation of potential risks) • Quantity and size: ideally (if appropriate) 2 double mosquito bed nets should be distributed (1 for parents, 1 for children) • Fitted with: hooks or any other hanging/attaching devices
18	Gamsa/Towel	• Material and size: highly water absorbent cloth of at least 0.5 m2 • Colour: light colour if possible • Quantity: at least 2 pieces/household (1 piece/ family member ideal)
19	Toothpaste/Tooth powder	• Material: standard toothpaste/powder and tooth brushes • Quantity: ideally one toothbrush/family member, in case of non availability people should be advised to use clean finger or “Datan”(thin branches of NIM tree) and 75ml/100g toothpaste/person/month
20	Hair Hygiene (Shampoo)	• 250ml shampoo
21	Bathing soap	• Material: standard bathing soap • 100 g bathing soap
22	Nail cutter	• Material: standard nail cutter(without knife) • Quantity: 1 piece/household
Latrine Materials & Community Clean-up NFIs		
23	RCC Ring for Latrine	RCC ring 30" dia x 12" ht x 1.5" thickness (3pcs of circular 10 no GI wire) [1:2:4 ratio with 12mm downgraded brick chips, sand having F.M at least 1.8].
24	RCC Slab with Pan and Foot raise	RCC slab dia 32" and 2" thickness attached with best quality plastic pan and water seal (re-enforcement: total 17pcs; 10 no GI/MS wire) [1:2:4 ratio with 12mm downgraded brick chips, sand having F.M at least 1.8].
25	Brush for latrine cleaning	• Traditional brush: made of strong vegetal fibres Or • Plastic brush: long PVC handle, plastic hair, plastic container to hold brush
26	Bleaching Powder / latrine cleansing detergents	• Bleaching powder: minimum 25% strength at the time of delivery, distributed in 250 to 500 g air tight sealed packs Or • Toilet detergent: containing bleach, chlorine or other disinfectant; liquid (distribute 0.25 to 0.5 litre bottles) or solid (distribute 250 to 500 grams) • Must ALWAYS be distributed with appropriate, visual user guidelines and training/demonstration, and explanation of potential risks
27	Small shovel	• Material: PVC or metal that can be washed easily (steel, aluminium, painted metal) • Fitted with: short handle (10 to 15 cm) • Must be distributed with appropriate hygiene promotion to mothers
28	Plastic potty for children	• Material: PVC or any other plastic that can be washed easily • Colour: if possible white or light colour • Must be distributed with appropriate hygiene promotion to mothers
Water		
29	Bottled mineral water	1.5 Litres
30	Jar mineral water	20 Litre , 25 Litre
31	Tubewell Head	Supplying, fitting and fixing of #6 hand pump head with 5 feet 38 mm both side threaded GI pipe all complete as per specification and direction of Engineer-in-Charge (RFL-Samrat-Medium).
32	Pipe	Supplying of 38 mm dia PVC pipe-class-D (RFL/National Polymer/Aziz)
33	Tool Box	Supplying of necessary tools and bag e.g. slide wrench-2, Screw driver-1, 1-bucket, 1-check valve, 4-nuts & bolts and 1-bag.
Food Hygiene		
34	Metal cooking pans with lids	• Material: solid/thick aluminium or other noncorrosive metal; withstand cooking temperature (>100°C) • Capacity: 3 to 5 L (enough to cook for one household) • Quantity: ideally 2/household (1 big, 1 medium size) • Fitted with: handles, metal lids

35	Plastic containers with covers	• Material: solid/thick PVC or other plastic (food grade); withstand relatively high temperatures (100°C) • Capacity: 1 to 2 L (enough to store leftovers and fresh food) • Quantity: ideally 2/household (one big, one medium size) • Fitted with: tight plastic lids (for safe food storage)
36	Plastic plates with covers/ dhakna	• Material: solid/thick PVC or other plastic (food grade); withstand relatively high temperatures (100°C) • Quantity: ideally 1/family member or 5/household • Fitted with: plastic covers (for safe food storage)
37	Cutlery set of metal spoons	• Material: standard cooking spoons and knives; stainless steel or non-corrosive metal; withstand cooking temperature (>100°C) • Quantity: ideally 2 cooking spoons /household
Others		
38	Oral Rehydration Salt sachets	• Quality: WHO formula, sachets to be diluted in 1 or 0.5 litre of water • Quantity: enough to make 5 litres of ORS solution per person • Must ALWAYS be distributed with appropriate, visual user guidelines and training/ demonstration. Emergency coordination with health cluster / medical team must be done

Annex 2 - PCMA participants: Dhaka and Gaibandha

2.1 Dhaka

	Full Name	Organization Name	Designation
Academic Institutions	Md. Abul Kalam Azad	Institute of Disaster Management and Vulnerability Studies, University of Dhaka	Assistant Professor
	Md. Juel Mia	Institute of Disaster Management and Vulnerability Studies, University of Dhaka	Lecturer
	MD. AZIZUR RAHMAN	ITN-BUET	RESEARCH OFFICER
INGO/LNGO	Afsari Begum	Practical Action	Programme Manager
	Tanoy Dewan	International Federation of Red Cross and Red Crescent	Senior Officer-Watsan and Shelter
	Md. Amirul Hasan	Water & Sanitation for the Urban Poor (WSUP)	Business Development Officer
	Sukleash George Costa	Caritas Bangladesh	Manager (Programs)
	ATM Ridwanul Haque	BRAC	Senior Sector Specialist
	Md. Sharif Ullah Bhuiyan	Dhaka Ahsania Mission	Coordinator Social Mobilization
	Md. Shah Jalal	Gana Unnayan Kendra (GUK)	Project Coordinator
	Marjana Chowdhury	Oxfam	Project Manager
	Sharmin Sultana	Network for Information, Response And Preparedness Activities on Disaster (NIRAPAD)	Program Officer
	Mizanur Rahman	Ashroy Foundation	Program Manager
	Muhammad Mamtaz Uddin	German Red Cross Bangladesh	Senior Project Officer
	Khandoker Zahid Shorwar	SKS Foundation	Coordinator - Field Operations
	Babul Bala	Concern Worldwide	Technical Expert-WASH
	Md. Maksudul Amin	Action Contre La Faim (ACF)	Deputy Head of Department - WASH

	A.T.M.Moniruzzaman	Islamic Relief Bangladesh	Technical Coordinator
	Anya Briggs	iDE	Technical Specialist-Partnerships
	Atwar Rahman	Oxfam	EFSVL Coordinator
	Fadrick Suvro Nath	Oxfam	Senior Programme Officer-Cash Transfer
	Sharif Mos. Ferdausy	Oxfam	Sr. Public Health Engineer
	Kazi Monir Mosharof	NGO Forum for Public Health	Disaster Manager

DPHE	Md Fayazul Islam Soman	DPHE, Central Dhaka	Dept. Project Director
	Md. Rezwan Hossain	DPHE, Central Dhaka	Asst. Engr.
	Khairul Hassan	Shatkira	Asst. Engr.
	Mahamudul Humayun	DPHE, Central Dhaka	Management Officer

	MD. Wali Uddin	Department of Disaster Management	District Relief & Rehabilitation Officer
	MD. Laltu Mia	Department of Disaster Management	Project Implementation Officer
	Mithun Kundu	Department of Disaster Management	PIO - Fulchari

DWASA	Mir Mahadi Hossain	Dhaka WASA	Senior Community Officer
	Most. Afrin Aktar	Dhaka WASA	Community Organizer

Volunteer	Nujhat Marzia	IDMVS, DU	MDM student
	Zannatul Ferdows	IDMVS, DU	MDM student

Organizer - Oxfam	Mohammad Ali	Oxfam	Public Health Engineer Coordinator
	Pulak Chakma	Oxfam	Senior Programme Officer-WASH & Market
	Kazi Enayet Hossain	Oxfam	Sr. Research Associate-WASH & Market
	A.K.M. Robiul Alam	Oxfam	Sr. Research Associate - WASH & Market
	Mushfiqua Mosharref	Oxfam	Senior Programme Officer-PHP
	NIAZ NAZIM CHOWDHURY	Oxfam	Senior Humanitarian Logistics Officer
	Ranajit Das	Oxfam	Public Health Promoter - Coordinator

2.2 Gaibandha

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Annex 3 - PCMA Schedule

Upazila & Union markets

Upazila	Union	Village / Market Name	Number of Interviews				
			Pharmacy	Cloth	Grocery	SanMart	Hardware/ Pitcher
Fulchari	Fulchari	Fulchari Bazar	2	2	3	0	2
Saghata	Varatkhali	Uttar Ullahbazar (Close to Fulchari Bazar)	0	0	0	3	0
Fulchari	Fazlupur	Taltola Bazar	1	3	2	0	0
Fulchari	Fazlupur	West Khatiamari Bazar	1	1	2	0	0
Fulchari	Fulchari	Jamuna Bazar	2	0	2	0	0
Fulchari	Fulchari	Shapla bazar	1	1	1	0	0
Fulchari	Fulchari	Bazefulchari Bazar	1	1	2	0	0
Fulchari	Fulchari	Tengrakandi Bazar	2	1	2	0	1
Fulchari	Fulchari	Kanchipara Bazar	0	0	2	1	0
Total			**10**	**9**	**16**	**4**	**3**

District market

Pharmacy	Distributor of ORS	Distributor of soap (Unilever, Keya Cosmetics, Kohinoor Chemicals, Square Toiletries)	Distributor of sanitary napkin (Square)	Hardware/kolsi wholesaler	Bleaching powder supplier	Cloth
3	1	4	1	2	2	1

Annex 4

4.1HH Questionnaire

Household Survey Questionnaire

1| Name of the household head: Age:

2| Total family members: Female: Male:

3| Occupation of household head: Mobile number:

4| Wellbeing status: Well-off/Middle Class/Poor/Ultra-poor

5| Sources of income:

Agriculture	Day Labour	Service	Rickshaw puller	Livestock	Boat man	Business	Others

6 | Does your income remain same round the year? Yes/No. If no, why?

Difference of income / expenditure	Name of month	Source
Income increase		
Income decrease		
Expenditure increase		
Expenditure decrease		

7| Areas of expenditure:

Food	Cloth	Health	Education	Loan repayment	Agriculture	House repairing	Others

8| What are your source of drinking water? Normal time---------- Disaster time----------

9| Do you disinfect your drinking water? If yes, how?

Normal time---------- Flood time ----------

10| Do you have latrine in your house? Yes/No. If yes, what type of latrine do you use?

11| Does your latrine is inundated during flood? Yes/No.

12| where do you defecate when your latrine is inundated during flood?

13| when did you purchase your latrine hardware?

14| Are latrine hardware available round the year in local level?

15| When latrine hardware are not available in local level?

16. How do you carry your latrine material?

A) Normal time- B) Disaster time-

17| Do you face any problem in purchasing latrine materials? Yes/No. If yes ,what type of problem?

18| How many soaps do you need for your family per month?

19| Which soap do you prefer for bathing?

20 | Usages of soap:

Soap	Normal time	Disaster time	Reason of difference of usage
Bathing soap			
Washing soap			

21| If you don't have access soap during flood -What do you do ?

22| Does your family members suffer from diarrhoea? Yes/No. If yes, when?

23| Do you take ORS when suffer from diarrhoea ? Yes/No

If yes, what types of ORS? A) Homemade ORS B) Purchase from shop

24| What type of material do you use during menstrual period?

	Materials	Availability as needed
Normal time		
Disaster time		

25| From where do you purchase WASH NFI items?

Materials	Normal time	Disaster time	Difference of price(If yes, what are the causes)
Latrine materials (Ring, Slab, Pan)			
Tube well			
Bleaching powder			
Water purifying tablet			
ORS			
Bathing soap			
Washing soap			
Sanitary Pad			
Cotton cloth			
Metal pitcher			

26| Do you face any problem to access WASH NFI during flood? If yes what types of problem? How do you overcome/manage?

27| What is your preferred option to receive WASH NFI items? A) In-kind
B) Cash C) Cash voucher D) Commodity voucher

28| Select and rank the WASH NFI items as per your priority need:

Particulars of Material	Normal time	Disaster time
Latrine materials (Ring, Slab, Pan)		
Tube well		
Bleaching powder		
Water purifying tablet		

ORS		
Bathing soap		
Washing soap		
Sanitary Pad		
Cotton cloth		
Metal pitcher		

4.2 FGD Questionnaire

FGD Questionnaire

1. Welcome and greetings session.
2. Do you all are engaged in same occupation or profession?
3. Are your income and financial status are similar? (Average highest and lowest monthly income at household level)
4. Classify the participants into different wealth group.
5. How many of you are using personal mobile phone? How is the mobile phone network in your area? Which operator's network is stronger?
6. Do you have access MMT in your area? (Bkash/DBBL & other services)
7. What is the average family member per household? What are the average family members of different wealth groups?
8. What type of disaster do you face in your area? When these disasters are happened?
9. What affects most during flood? (Livestock, House, Road, Toilet, Crops, Tube well)
10. What is the distance between your village and nearest market?
11. Do you have access all of your essentials (Especially WASH NFI) in the local market round the year? Are these products are available round the year?
12. How is the price of WASH NFI changes round the year?
13. How do you get affected by normal and severe flood?
14. What types of livestock are you rearing? Are livestock affected by flood?
15. What are the main problems (WASH related) do you face during & post disaster?
16. Do you have access to loan? If yes, from where do you get it?
17. Do you face any problem for loan repayment during disaster? If yes, what types of problem?
18. How do you go to the market (Transpiration system) during normal and flood time?
19. Is there any WASH related project or activities implemented by Govt. and NGOs during disaster? What are those activities?
20. How your latrine and tube is well get affected by flood? What are the measures do you take if latrine and tube well get inundated?
21. What are the sources of drinking water for the household? What is the average distance of different water sources from households (normal and flood time)?
22. Do you face any problem for collecting Safe drinking water in disaster time?
24. What is the preferred option to receive WASH NFI items?
    A) In-kind
    B) Cash
    C) Cash voucher
    D) Commodity voucher

4.3 NFI-market actors-retailers & wholesalers questionnaire

WASH NFIs-Retailers/Wholesalers (Village Shops/Pharmacy/Grocery)

Location:

Name of Interviewee:

Contact No: **Date:**

1. How many shops sell NFI (bathing soap, laundry soap, ORS, bleaching powder, chlorine tablets, sanitary napkins, pitcher, and cotton cloth)? (This question can be asked, but we should also investigate through other means).

NFIs	Number of shops	Types of business (retail/wholesale)
bathing soap and laundry soap		
ORS		
bleaching powder		
chlorine tablets		
sanitary napkins		
pitcher		
cotton cloth		

2. Price of NFIs in the shop. Is there any variation throughout the year, or during floods?

NFIs	Varieties (different brands)	Price of different brand's products
bathing soap		
laundry soap		
ORS		
bleaching powder		
chlorine tablets		
sanitary napkins		
pitcher		
cotton cloth		

3. What is your current stock of NFIs?

NFIs	Stock of different branded products
bathing soap	
laundry soap	
ORS	
bleaching powder	
chlorine tablets	
sanitary napkins	
pitcher	
cotton cloth	

4. Who do you sell NFIs to and how does this change over the year?

NFIs	Customers	Where they from (areas)	Changes over the year (seasonal variation)
bathing soap			
laundry soap			

ORS			
bleaching powder			
chlorine tablets			
sanitary napkins			
pitcher			
cotton cloth			

5. How do you buy NFIs from suppliers? What is your supply line? How many suppliers?

NFIs	No. of suppliers	Suppliers Name	Location and contact no. of suppliers
bathing soap			
laundry soap			
ORS			
bleaching powder			
chlorine tablets			
sanitary napkins			
pitcher			
cotton cloth			

6. How many brands do you sell? Which do people buy and why? Does this change over the year?

NFIs	Varieties (different brands)	Preferred brands	Why	Seasonal variation
bathing soap				
laundry soap				
ORS				
bleaching powder				
chlorine tablets				
sanitary napkins				
pitcher				
cotton cloth				

7. What is the seasonal variation in quantity and price sold – normal times (now), annual floods (June – Sept 2015), bad floods (June/July 2014)?

NFIs	Seasonal variation			
	Normal time (Now)	Annual flood (June-Sept 2015)	Bad Flood (June/July 2016)	Why
bathing soap				
laundry soap				
ORS				
bleaching powder				
chlorine tablets				
sanitary napkins				
pitcher				
cotton cloth				

8. Do you face any challenges in terms of your supply line? What are the main blockages?

NFIs	Challenges of supply line (Main blockages)
bathing soap	
laundry soap	
ORS	
Bleaching powder	
chlorine tablets	
sanitary napkins	
pitcher	
cotton cloth	

9. Could you increase the quantity of NFIs that you stock? If yes- What quantity could you increase to? What would be your main challenges to increasing stock?

NFIs	Total quantity increase to	Challenges to increasing stock
bathing soap		
laundry soap		
ORS		
Bleaching powder		
chlorine tablets		
sanitary napkins		
pitcher		
cotton cloth		

10. Do you receive credit for your business?

11. Do you give credit to customers? What are the terms?

12. Would you be interested in a voucher system for this product? What issues can you foresee? **Need to explain what is a voucher system and how it would work – people would exchange a voucher for ORS, and then Oxfam would repay the shop based on the number of vouchers collected.**

13. Comments from Interviewees:

4.4 NFI Distributor & Manufacturer questionnaire

Manufacturers:

1. Production capacity:
    a. -Changes/Causes
    b. -Expandability?
2. Who are your customers?
3. What is your distribution system? How do you maintain supply chain of your product?
4. What is the lead time to distribute your products at different levels?
5. How demand varies round the year (average/Peaks)? What happened in 2014?
6. What are your challenges/ opportunities?
7. Business plans/ expanding production?
8. How many numbers of producers presently manufacturing soap/ORS/sanitary napkin/etc. in Bangladesh? Are they all BSTI certificated?
9. Would you be interested in a framework agreement? How it can be? What are the possible terms and conditions?

Company Dealer/Agent:

1. How do you get supply from company? Frequency in a week? Where the company depots are located?
2. What is your distribution system? Do you use local agents? Are they paid? Independent? How many of each? Pricing structure?
3. Where do you distribute (area)? Who is your customer at different level? How much at each level?
4. What is the lead time to get supply from company depot and distribute to the wholesalers/retailers at different level?
5. What is your average stock level round the year? Scope of expandability?
6. Is there a seasonal variation in the volume distributed? Any new customers? Volume + Price to new customers (Suppliers + NGOs) and for how long?
7. Where are the demand peaks? -What happened in 2014?
8. Challenges/ Opportunities/ Business plan
9. Who are the other suppliers/distributor of soap/ORS/sanitary napkin/etc. of different brand?
10. Would you be interested in a framework agreement? How it can be? What are the possible terms and conditions?

4.5 Sanitary Hardware-NGO-Questionnaire

Name of the NGO:

Address: **Date:**

Name of Interviewee:

Contact No:

1. Year of establishment.
2. How long have you been working in this area?
3. Did or Do you have WaSH project in this area? What types of support did you provide under this project?
4. Who are other organizations working on WaSH in this area? What are they doing?
5. Did you provide any hardware materials to your targeted people? How many? How did you provide (in kind, cash, and voucher)? Any challenges?
6. Who were your suppliers? Where are they located? How did they supply?
7. Could you procure timely? If not why?
8. How did you ensure quality of the hardware materials?
9. What is your evaluation regarding the capacity of local suppliers in terms of timely delivery, quality, production and financial capacity?
10. Did you implement WaSH project in emergency? If yes, what types of support did you provided? How did you manage? Experience? Challenges?
11. What are other projects (micro finance??) have you been implementing beside WaSH in this area?

4.6 Sanitary Hardware – Manufacturer Questionnaire

Hardware (ring-slab) Manufacturers:

Location: **Date:**

Name of Interviewee:

Contact No:

1. How long have you been involved in this business?
2. How many numbers of producers' presently are manufacturing sanitary hardware (ring and slabs) in this area?

Name of the producers	Address and contact no.

3. Production capacity-
    a. Average monthly production?
    b. How it is changes considering seasonality? Any causes?

Season	Average monthly production (Unit)	Causes of production variation	Average monthly Sales (Unit)
Summer			
Monsoon			
Winter			

4. What is your scope of expandability?

Items	Monthly expandability
Rings	
Slabs	

5. What are different types and quality of rings and slabs do you produce? What are the prices of these products?

Ring		Slabs	
Type/Size	Price	Types /size	Price

Do you face any challenges in production during flood time? How do you overcome?

6. Who are your customers at different level (org., rich, middle class, poor)? Which is your target market (area)? What is the percentage of different customers?

7. How demand and price varies round the year?

Season	Average monthly demand	Price (Tk.)	Causes of variation
Summer			
Monsoon			
Winter			

8. What are the activities do you have for marketing of your products?

9. What are your challenges/opportunities (in terms of inputs-raw materials, production-technical skill, marketing, finance, and demand-supply)?

Particulars	Challenges	Opportunities
Raw materials		
Technical skill		
marketing		

Finance		
Demand		
Supply		

10. What happened in 2014 severe flood in Gaibandha in terms of production and supply? Did you able to meet demand? What challenges did you face? How did you overcome?
11. Do you have access to loan for your business? Where do you get it from?
12. Do you give credit to customers? What are the terms?
13. Do you have any plan to expanding production? If yes/no- why?
14. What are the other products do you produce apart from ring and slabs?
15. Would you be interested in a **voucher system** for this product? What issues can you foresee? (Framework Agreement)
16. **Any comments :**

Annex 5 - Interview data

Focus Group Discussion (FGD) and Household (HH) interview Data

SL No.	Union Name	Village Name	Number of HH interview conducted	Number of FGD conducted
1	Fazlupur	Tanaghat-Manikore	3	2
2	Fazlupur			
3	Fazlupur	Purbo Khatamari	3	2
4	Fazlupur			
5	Fulchhari	Parul village	2	1
6	Fulchhari	Bajefulchuri	2	1
7	Fazlupur	Kawabadha	1	1
8	Fulchhari	Bagbari	2	1
9	Fulchhari	Tengrakandi	2	1
10	Fulchhari	North pipulia	1	1
11	Fulchhari	Khanchipara	1	1
12	Fazlupur	Chandansar	2	1
Total			**19**	**12**

Market Interview Data

Upazila & Union markets

Upazila	Union	Village / Market Name	Number of Interviews				
			Pharmacy	Cloth	Grocery	SanMart	Hardware/ Pitcher

Fulchari	Fulchari	Fulchari Bazar	2	2	3	0	2
Saghata	Varatkhali	Uttar Ullahbazar (Close to Fulchari Bazar)	0	0	0	3	0
Fulchari	Fazlupur	Taltola Bazar	1	3	2	0	0
Fulchari	Fazlupur	West Khatiamari Bazar	1	1	2	0	0
Fulchari	Fulchari	Jamuna Bazar	2	0	2	0	0
Fulchari	Fulchari	Shapla bazar	1	1	1	0	0
Fulchari	Fulchari	Bazefulchari Bazar	1	1	2	0	0
Fulchari	Fulchari	Tengrakandi Bazar	2	1	2	0	1
Fulchari	Fulchari	Kanchipara Bazar	0	0	2	1	0
Total			**10**	**9**	**16**	**4**	**3**

District market

Pharmacy	**Distributor of ORS**	**Distributor of soap (Unilever, Keya Cosmetics, Kohinoor Chemicals, Square Toiletries)**	**Distributor of sanitary napkin (Square)**	**Hardware/kolsi wholesaler**	**Bleaching powder supplier**	**Cloth**
3	1	4	1	2	2	1

Annex 6 - SKS Foundation Overview of past responses in Gaibandha

Activities	Name/type of disaster	Name of donor	Covered no. of beneficiary	Amount of fund-BDT	Supported Pakej Item
Emergency Response to Flood affected vulnerable Communities in Northwest Bangladesh in 2014 in Kurigram	Flood	CARE Bangladesh	1000	2,122,666	Wheat, Vegetable Oil, Peas. Water purified Sachet.
Emergency Response (Flood 2014) in Northwest in Gaibandha	Flood	CARE Bangladesh	900	90,900	Dry food. (Chira) Sugar, Salt, ORS, Water purified Sachet, Plastic Jerkin.
Flood Resilient Recovery Project in Sariakandi, Bogra in 2014	Flood	UNDP	200	23,000,000	Shelter house, Cash for livelihood option, Blanket,
Emergency Response, Flood in 2014 in Gaibandha and Bogra	Flood	SDC	1000	535,326	Dry food (Chira & Gour), Candle, Water Jerkin, Life boy shop
Emergency Response, Flood 2014	Flood	Action Aid Bangladesh	2500	1,717,500	Cash, Rice, Dal, Suji, Soyabeen Oil, Sugar, Salt
Bangladesh Flood Response 2014	Flood	OXFAM	1500	4,650,100	Sanitary napkin, Life boy shop, Wheel washing shop, Water purified tab, ORS, Blessing powder, Aluminium Water Jerk, Tub-well, Latrine
UN Joint Response for North West Flood in 2016 in Gaibandha Sadar	Flood	UNDP	2011	21,014,950	Cash
Assistance to Flood Affected People in North-West Bangladesh at Giabandha Sadar in 2016	Flood	World Food Programme	1113	6,678,000	Cash

Annex 7 GPS Fieldwork Locations in Gaibandha District

	Upazila	Union	Village / Market Name	GPS Reading
1	Fulchari	Fulchari	Fulchari Bazar	N 25˚11'32 .805 ˝ E 089˚**35**΄**28**.320˝
2	Saghata	Varatkhali	Varatkhali (Uttar Ullah, Close to Fulchari Bazar)	N 25˚11'21 .700 ˝ E 089˚**34**΄**57**.215˝
3	Fulchari	Fazlupur	South Khatiamari Taltola Bazar(School)	N 25˚12'00 .229 ˝ E 089˚**40**΄**37**.262˝
4	Fulchari	Fazlupur	West Khatiamari Bazar	N 25˚12'41 .140 ˝ E 089˚**39**΄**54**.965˝
5	Fulchari	Fulchari	Jamuna Bazar	N 25˚06'48 .430 ˝ E 089˚**36**΄**46**.522˝
6	Fulchari	Fulchari	Kanchipara bazar	N 25˚08'27 .855 ˝ E 089˚**37**΄**58**.137˝
7	Fulchari	Fulchari	Bazefulchari Bazar	N 25˚11'10 .180 ˝ E 089˚**38**΄**02**.135˝
8	Fulchari	Fazlupur	Chandanshar village	N 25˚13'37 .939 ˝ E 089˚**39**΄**09**.921˝
9	Fulchari	Fazlupur	Tanaghat-Manikore village	N 25˚16'14 .474 ˝ E 089˚**39**΄**24**.269˝
10	Fulchari	Fazlupur	Purbo Khatiamari Village	N 25˚13'55 .043 ˝ E 089˚**40**΄**00**.568˝
11	Fulchari	Fulchari	Parul village	N 25˚10'51 .105 ˝ E 089˚**37**΄**59**.107˝
12	Fulchari	Fulchari	Kanchipara village	N 25˚08'25 .805 ˝ E 089˚**37**΄**56**.087˝
13	Fulchari	Fazlupur	Kawabadha village	N 25˚18'07 .145 ˝ E 089˚**40**΄**08**.203˝
14	Fulchari	Fulchari	Bazefulchari village	N 25˚11'10 .580 ˝ E 089˚**38**΄**02**.535˝
15	Fulchari		Gaibandha district market	N 25˚19'46 .276 ˝ E 089˚**32**΄**34**.715˝
16	Fulchari	Fulchari	Tengrakandi bazar	N 25˚10' 25 .424˝ E 089˚**37**΄**58**.180˝
17	Fulchari	Fulchari	Tengrakandi	N 25˚10' 26 .250˝ E 089˚**37**΄**59**.006˝
18	Fulchari	Fulchari	Baghbari	N 25˚08' 04 .923˝ E 089˚**37**΄**10**.142˝
19	Fulchari	Fulchari	Sapla bazar	N 25˚ 08΄ 908˝ E 89˚38΄ 443˝
20	Fulchari	Fulchari	North pipulia	N 25˚10'34 .158 ˝ E 089˚**37**΄**18**.959˝
21	Fulchari	Fulchari	Jamira	N 25˚06' 31 .244˝ E 089˚**37**΄**05**.855˝
22	Fulchari	Fulchari	Gabgachi	N 25˚08' 62 .580˝ E 089˚**37**΄**33**.062˝
23	Fulchari	Fazlupur	Manikore	N 25˚16' 51 .738˝ E 089˚**39**΄**13**.409˝
24	Fulchari	Fazlupur	Balashi Ghat	N 25˚18' 52 .107˝ E 089˚**36**΄**59**.046˝