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**TRANSFORMATION TOWARDS SUSTAINABLE  
AND RESILIENT WASH SERVICES**

**Using pre-crisis market analysis to strengthen emergency  
preparedness and resilience of WASH systems**

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*Market traders and service providers are often the principal means by which affected communities obtain the essential commodities they need during a crisis. In urban areas, these actors are part of market systems consisting of producers, wholesalers, and enterprises in the supply chain responsible for retail and service provision. This paper describes Oxfam's experiences using pre-crisis market analysis in Bangladesh, Indonesia, South Sudan and Zimbabwe in order to support market-based programming to strengthen the resilience of market systems and prepare for reoccurring emergencies. The paper also describes the organisational considerations in relation to time, resources and staff capacities to undertake market analysis and programming.*

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**Impact of crises on WASH markets**

All communities depend upon a variety of goods and services (jointly referred to as commodities) to meet their essential everyday needs. Market traders and service providers retailing commodities at the local level are the endpoint in the market system where supply meets demand; where commodities are delivered to end-users via a range of market actors – both public and private, formal and informal. The accessibility, price, and potentially the quality of commodities, may change during an emergency, but the extent to which they are affected depends upon the type and duration of the crisis. In the aftermath of large-scale natural disasters, market systems are often disrupted and affected communities depend upon humanitarian interventions from external agencies to meet their critical needs. However, in smaller emergencies or protracted crises, markets are often the principal means by which people obtain critical commodities.

In situations where WASH services are already poor, weaknesses in market systems are exacerbated by seasonal impacts such as floods and drought, which often lead to disease outbreaks. Although emergencies may be symptomatic of longer term endemic problems, humanitarian responses are frequently designed and implemented based upon a poor understanding of the specific needs of populations affected by crisis, or the market systems that provide the commodities and services to meet these needs. If the crisis is so severe that market systems break down altogether and there is no immediate means to repair them, then an in-kind response may be required. However, humanitarian and government agencies should seek to rehabilitate and support existing service providers wherever possible and only substitute them when no other options exist. Working with market actors is therefore key to emergency responses – which also provides livelihood opportunities to support income generation, in turn contributing towards the rehabilitation of the local economy (WASH TWIG, 2017).

## **Working with WASH market systems in humanitarian programming**

Working with WASH markets requires an understanding of the interrelated components of water, sanitation and hygiene (WASH) and the interactions between users and WASH actors. An awareness of market systems and understanding of the demand for WASH commodities prior to and during emergencies is important to design and implement effective humanitarian WASH programs. A key consideration is the fact that the effectiveness of humanitarian responses will depend upon whether the crisis-affected population want or perceive a need for the commodities that are provided. This will determine the end-use of any goods distributed and the demand for services provided.

An understanding of end user needs for WASH commodities, how crises affect demand and the capacity of market systems to meet their needs is fundamental to a successful emergency preparedness and response programming. If humanitarian agencies do not consider market systems, the in-kind distribution of goods can also affect demand for commodities, undermining market recovery and economic rehabilitation. It is therefore important to be market aware; considering the impact that in-kind distributions may have on existing market systems. Market awareness is one of the key ways to uphold the principle of do no harm, which encourages humanitarian agencies to avoid unintended negative consequences in any situation in which they operate. According to Minimum Economic Recovery Standards (SEEP Network 2017) market awareness is the starting point for humanitarian programme whether this be post- or pre-crisis and program design and implementation decisions should consider context, market system dynamics and communities.

## **Mapping and analysing market systems to support market-based programming**

With funding from USAID's Office of Foreign Disaster Assistance (OFDA), Oxfam set out to promote market-based responses to emergencies using pre-crisis market mapping and analysis in Bangladesh, Indonesia, South Sudan and Zimbabwe. An overview of the results of these activities were used to develop the market-based programmes as described below. Oxfam utilised the Pre-crisis Market Analysis (PCMA) toolkit, a version of the more widely recognised Emergency Market Mapping and Analysis (EMMA) (Albu, 2010), which has been adapted for use in pre-crisis contexts (Juillard 2016).

Market analyses are used to understand the nature of supply and demand in WASH markets and are an essential step in the design of market-based programmes, or potentially to decide that market-based programming is inappropriate in the first place. Such analyses map out the capacity of the market system to supply essential WASH goods and services and assesses the level of demand in the community (such as people's preferences and purchasing power). In Bangladesh, Oxfam used Vulnerability and Risk Assessment (VRA) to support pre-crisis market analysis in Tala to understand better the needs of marginalised populations vulnerable to environmental hazards including water logging, arsenic contamination, salinity and cyclones. A combination of PCMA with VRA was found to facilitate better contingency planning and support the preparedness for expected emergencies. Basing the VRA around WASH hazards added depth to the context and fed directly into the choice of critical WASH markets for analysis during the PCMA (Medland *et al* 2017).

Various market analysis tools are available, including household surveys, seasonal calendars and interview of market actors. These tools are used to understand and map how the market functions (prices, volumes, stocks, transport, access to finance) and to understand what people spend their money on, why and what helps or hinders a target group to buy a good or service from the market. Tools such as Mobenzi or Survey CTO are increasingly used to facilitate more rapid data collection and analysis and were used in Indonesia, South Sudan and Zimbabwe to support the market mapping and analysis.

## **Approaches towards market engagement**

At the simplest level, market-based programmes use market supply chains to provide goods and emergency services through existing market actors. This may involve using the market for supply by contracting water truckers or procuring latrine slabs locally and stimulating demand with cash grants or vouchers for desludging latrines for example. However, these actors frequently require some form of assistance to be able to function effectively and meet the needs of affected people in accordance with humanitarian standards. Thus, supporting market actors to recover from the shock of a disaster after an event, or to prepare for an emergency, is often an important programming activity. This support may include small grants to repair water supply systems, restoring a latrine slab business or subsidising the bulk purchase of sanitary

pads. The third type of market engagement, which is generally only possible in a non-crisis situation, involves strengthening or developing the market system as a whole. This is generally a longer-term approach that expands or diversifies existing markets to improve access, or introduces new commodities that provide a better-quality product or service.

Market-based programming also involves activities to promote the demand side of the market system, which in the majority of situations involves the use of some form of cash transfer programming, combined with marketing activities and hygiene promotion. Although there is increasing interest in multi-sector cash transfers, there are concerns in the WASH sector that cash will not be utilised for WASH commodities. As a result, the majority of cash programming for WASH uses vouchers which are restricted to specific commodities or groups of commodities. The sections below describe in more detail these approaches to market-based programming with specific reference to Oxfam's experience in the countries participating in its OFDA-funded programme.

### **Using existing market supply chains**

Using the market to deliver WASH commodities is feasible as part of an emergency response where the market is still functioning adequately. The most common approach involves working with local market actors to provide commodities to affected communities upon receipt of cash or, as mentioned above, a voucher in exchange for water, a hygiene non-food item (NFI) or use of a privately-operated toilet or washroom for example.

In the Gaibandha and Satkhira districts of Bangladesh, flooding and waterlogging affect vulnerable communities on an annual basis. The PCMA showed that not all of the hygiene items distributed during traditional WASH responses meet priority needs. The critical commodities identified included soap, menstrual hygiene products and containers for storing water. Oxfam Bangladesh prepared framework agreements with local market actors to supply NFIs to affected communities through a range of cash transfer modalities, with a value derived from an estimate of the cash equivalent for the traditional WASH 'basket'. These framework agreements define the payment mechanism, the location of material supplies, specific duties and responsibilities of the vendors in ensuring the quality of products sold and compliance with applicable laws, rules and regulations. These agreements were mobilised during the flood that affected Gaibandha in August 2016, when information about e-vouchers and good hygiene behaviour was disseminated to the affected community through via a local community radio. A workshop with the Upazila Disaster Management Committee (UDMC) was also held to incorporate the market based response into its contingency plan with a view towards future flood events.

### **Supporting market actors**

As mentioned above, markets systems often require additional support in order to effectively provide essential supplies or services during a crisis. Market support actions can help suppliers increase resilience and preparedness for future crises. One example of pre-crisis market strengthening was implemented in Indonesia to meet the WASH needs of flood-affected populations. During large-scale flood events in Jakarta, the poorest and most vulnerable families are temporarily relocated to centres for shelter and safety. Framework agreements were signed with market actors requiring them to maintain the functionality of the public toilet/shower facilities during flooding. The private sector WASH providers were offered grants to upgrade their facilities and, through agreement, mandated to provide access to IDPs upon receipt of a voucher through an e-payment system to enable them to use the public toilets /showers during floods, reducing the risk of disease outbreaks. The activity was undertaken under close cooperation with the Local Disaster Management Agency to ensure that all activities fell in line with the governments approaches towards disaster preparedness and response (OXFAM Indonesia, 2016).

Another example of a market support action implemented under the OFDA-funded programme is from Juba, where Oxfam provided support to the community-managed water supply system in Gumbo to enable the operator to understand market demands, function more commercially and be better equipped to deal with a crisis. The aim was to supply potable water from the small water treatment system to households via bicycle vendors, and also to sell water to water tankers. Oxfam carried out market research to understand users' socio-economic backgrounds, consumption patterns, service expectations and willingness and ability to pay for improved water services. Oxfam provided institutional support to ensure that the management of the system was commercially viable, with separate roles and responsibilities between the operator (i.e. the entity with direct responsibility for the day-to-day operation of the system and sales of water) and the water

management committee responsible for oversight and accountability. Oxfam has achieved some of this through a partnership with a community run water treatment plant in Juba that is using market based approaches to provide water through a business and implementation plan (Matoso, 2018).

**Developing market systems**

Market development to promote market system change is a longer-term approach designed for pre- or post-crisis situations. It helps markets diversify products or services, expand existing businesses and access new markets. The supply side of the market may be strengthened through training and the development of public-private partnerships. Demand for new products or services may be stimulated through promotional campaigns, as described below from the example from Harare. Oxfam worked with MSF Belgium to map market systems in Harare using GIS, to prioritise areas for intervention and map WASH facilities, market actors and service providers. Oxfam’s market analysis found that the majority of households could afford to purchase water purification chemicals, but chose not to because of their taste and smell, and the fact that they would be provided free of charge during an outbreak. Consequently, only a few market traders stock these items, and those who did reported little change in demand during an outbreak. As an alternative to traditional emergency responses to outbreaks of waterborne disease involving the in-kind distribution of household water treatment chemicals, Oxfam’s market development programme focused on promoting a locally manufactured water treatment product (Waterguard) using conditional vouchers in tandem with water quality monitoring and hygiene promotion. Demand was stimulated using a targeted ‘buy one get one free’ promotion. Increased sales have enabled market traders to develop and expand their business, which was an additional benefit of the programme (OXFAM Zimbabwe, 2016). Table 1 below give examples market based approaches in the WASH sector and if they use, support or develop the market.

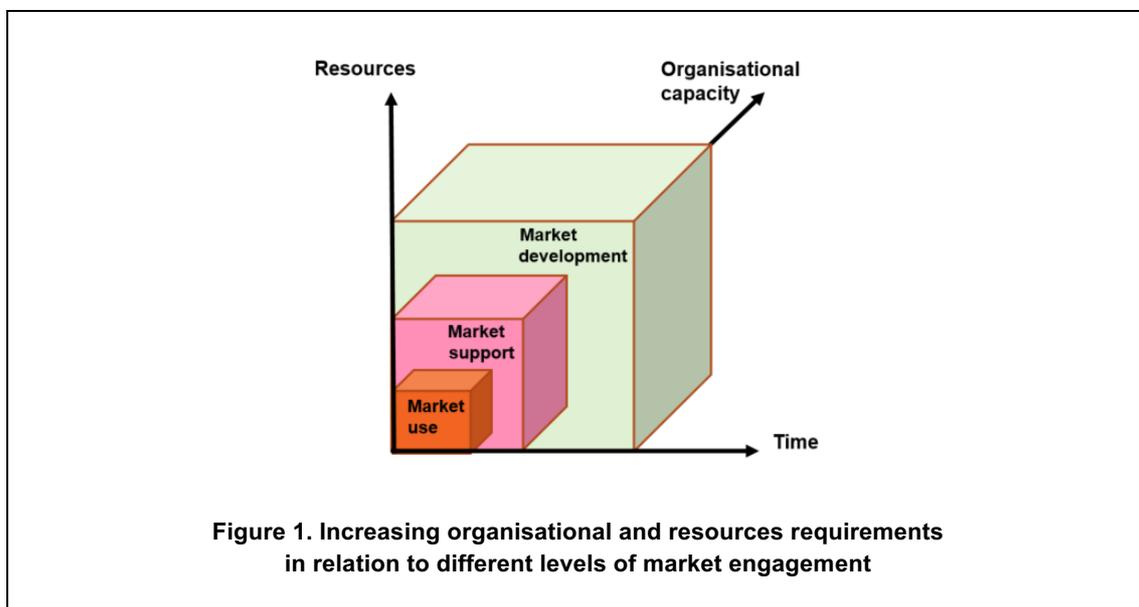
<b>Table 1. Examples of market based approaches in the WASH sector</b>				
		<b>USE</b>	<b>SUPPORT</b>	<b>DEVELOP</b>
<b>Water</b>	<b>Supply</b>	Contract water trucker to distribute water to crisis affected community	Small grants to repair water pumping / piping equipment	Install small-scale water treatment plants and train operators
	<b>Demand</b>	Cash grants to increase purchasing power for water and other commodities	Awareness-raising about importance of water quality to generate demand for water treatment	Marketing to promote new point-of-use water treatment products
<b>Sanitation</b>	<b>Supply</b>	Procure latrine slabs from local supplier	Provide support to manufacturers of slabs to improve quality	Provide new equipment for desludging pits
	<b>Demand</b>	Vouchers for desludging of pit latrines	Micro-grants for households to purchase sanitation components	Sanitation marketing to generate demand for improved latrines
<b>Hygiene</b>	<b>Supply</b>	Procure NFIs and/or hygiene services from local markets	Subsidise wholesale price of NFIs to enable bulk purchase of sanitary pads	Support women’s groups establish enterprises to manufacture and sell soap
	<b>Demand</b>	Commodity vouchers to enable purchase of hygiene commodities	Hire NGO to promote improve hygiene behaviour and use of hygiene commodities	Undertake market survey to understand customer preferences for hygiene commodities

**Organisational considerations for market-based programming**

Market analysis that prioritises working with market actors through ‘market use’ or ‘market support’ can be implemented relatively quickly and efficiently by humanitarian agencies with the right expertise. Pre-crisis

market analysis on the other hand often leads to recommendations for resilience building as well as emergency preparedness actions. A longer-term commitment is therefore required which bridges the gap between humanitarian and development programming incorporating resilience building, strengthening the capacities of local organisations, and preparedness planning. Programmes involving market development invariably require greater expertise, time and resources than those related to market use. Figure 1 illustrates how the amount of time, resources and level of organisational capacity required for market analysis and programming depend upon both the depth of analysis and the level of market engagement. In general, PCMA and market assessments in protracted crises require a more in-depth and analytical approach than a more rapid EMMA in an acute crisis.

A key consideration is the amount of time that is required for the market-based programming. Market analysis should only take a few weeks, but this does not include the time required for the other steps in the process. The overall duration will vary upon the context and the depth of market engagement. During emergencies, the time required to develop and initiate market use or strengthening actions may only be one month, whereas for resilience building actions, the time to implement market support actions will take significantly a lot longer as they need to be integrated within longer-term development programming.



Before embarking upon a market analysis, organisations should consider the availability of staff with the right skills / expertise. Requirements depend upon the depth of market engagement, but a frequent challenge facing market assessments is that there is need for expertise from outside of the WASH sector. Ideally a market assessment team requires a composition of staff who understand humanitarian WASH, market systems, cash transfer programming and consumer demand and behaviours. In addition to interactions between development and humanitarian practitioners, there is a need for inputs from logistics, procurement, finance and monitoring and evaluation teams. This helps to understand how market systems operate in non-crisis situations and the approaches adopted during longer-term development programming. However, it may prove difficult to identify the personnel with the necessary expertise for the market assessment, especially at short notice.

To promote organizational buy-in, there is a need for better understanding across the organisation about the value of market analyses to support humanitarian programming – both for emergency preparedness and response. Delivering these programmes requires expertise in market development and a good understanding of development programming, as much as it does experience working in emergencies. There is a need for a concerted capacity-building effort in the sector, and a commitment from agencies to support this activity over a sustained period. This does not mean that everyone needs to be an expert in market analysis but staff from country programmes need to understand the basis for market analysis and programming. Ensuring inputs from development staff is essential to understand the nature and cause of the problems that are being

faced, particularly where these relate to chronic development issues and how these compound upon affected problems during a crisis.

### Key learnings

Understanding how WASH systems function and how the end-users interact with these systems during periods of normality or crisis is critical to tailoring interventions to meet end-user needs. This understanding is important for non-WASH sector specialists as well as WASH sector specialists, when working together during multi-sector needs assessments and humanitarian responses. Key learnings from Oxfam's experiences with market mapping and analysis to support market-based programming are summarised below:

- All populations depend upon markets systems and supply chains – both formal and informal – to meet their everyday needs. An awareness of these supply chains and the demand for essential goods and services is necessary for all humanitarian programming.
- Working with market actors can be an effective means to meet the needs of affected populations, improve the efficiency of programme delivery, and contribute towards market rehabilitation and economic recovery.
- Working with market systems requires supporting market actors to overcome longer term stresses related to socio-economic aspects and poor management as well as shorter term environmental or conflict related shocks, which result in supply chain failure.

The challenge for humanitarian agencies is to work out how to best support existing market systems, which necessitates changing roles from implementers to facilitators. Solutions to WASH problems invariably need to deal with longer term endemic issues, but the distinction between crisis and non-crisis situation can become blurred. It is therefore important to differentiate between those aspects relating to the economy and inadequate public service and those related to emergencies, such as natural disaster or conflict.

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### References

- Matoso, M (2018) *Pathways to Professionalised Community Water Services in Protracted Crisis – a case from Juba*. 41<sup>st</sup> WEDC International Conference, Nakuru, Kenya, 2018
- Medland, L, Fullwood-Thomas, J and Brady C. (2017) *Understanding vulnerabilities and risk in the development of market based approaches*. 40th WEDC International Conference, Loughborough, UK, 2017
- OXFAM Indonesia (2016) *PCMA of Domestic Water and Latrine Market Systems in the Context of Flooding in Jakarta* [online] [viewed 17 February 2018] Available from <http://www.emma-toolkit.org/report/pcma-domestic-water-and-latrine-market-systems-context-flooding-jakarta>
- OXFAM Zimbabwe (2016) *PCMA Report - Domestic water supply, sanitation and hygiene products in Harare, Zimbabwe* [online] [viewed 17 February 2018] Available from <http://www.emma-toolkit.org/report/pcma-report-domestic-water-supply-sanitation-and-hygiene-products-harare-zimbabwe-0>
- Oxfam (2017) *Monitoring and Evaluation of WASH Market Systems*. Guidance and IT tools. Download from [www.emma-toolkit.org](http://www.emma-toolkit.org)
- WASH TWIG (2017). *Cash and Markets in the WASH Sector*. WASH Cluster Technical Working Group Available from [www.cashlearning.org](http://www.cashlearning.org)

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