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## Research article

## Measuring the benefits of using market based approaches to provide water and sanitation in humanitarian contexts

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## ABSTRACT

The use of cash transfers and market based programming (CT/MBP) to increase the efficiency and effectiveness of emergency responses is gaining prominence in the humanitarian sector. However, there is a lack of existing indicators and methodologies to monitor activities designed to strengthen water and sanitation (WaSH) markets. Gender and vulnerability markers to measure the impact of such activities on different stakeholders is also missing. This study identifies parameters to monitor, evaluate and determine the added value of utilising CT/MBP to achieve WaSH objectives in humanitarian response. The results of the work revealed that CT/MBP can be used to support household, community and market level interventions to effectively reduce transmission of faeco-oral diseases. Efficiency, effectiveness, sustainability, appropriateness and equity were identified as useful parameters which correlated to widely accepted frameworks against which to evaluate humanitarian action. The parameters were found to be directly applicable to the case of increasing demand and supply of point of use water treatment technology for a) disaster resilience activities, and b) post-crisis response. The need for peer review of the parameters and indicators and pilot measurement in humanitarian contexts was recognised.

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## 1. Introduction

Diarrhoeal diseases transmitted by the faeco-oral route are a major cause of morbidity and mortality in complex emergencies. These diseases mainly result from inadequate quality and quantity of water, substandard and insufficient sanitation facilities, overcrowding, poor hygiene, and scarcity of soap. As such, access to potable water, safe sanitation and good hygiene practices (WaSH) are critical determinants for survival in the initial stages of a disaster (Connolly et al., 2004). In response, significant research has been conducted into appropriate technologies, approaches and associated decision making criteria for emergency WaSH in the aftermath of crisis events (Steele and Clarke, 2008; Haucke and Kreutzer, 2010; Loo et al., 2012; Ray and Jain, 2014).

Traditional approaches to humanitarian WaSH programming often involve distribution of non-food items (NFIs) including buckets, point of use water treatment technologies (POU-WTT) such as Aquatabs, soap and menstrual hygiene cloth. POU-WTT is

frequently promoted by aid agencies in the aftermath of crisis events to minimise outbreaks of water borne communicable diseases (Ray and Jain, 2014; The Sphere Project, 2011; Oxfam, 2007). NFIs including POU-WTT are distributed “in-kind” - recipients receive these items without payment. Such distributions are accompanied by mass behaviour change communication to ensure people affected by the crisis have the necessary information, knowledge and understanding to prevent water and sanitation-related diseases (The Sphere Project, 2011).

However, this approach overlooks the important role that the private sector and market actors can play in the distribution of WaSH commodities and provision of WaSH services during emergency response. Parallel distribution networks with inherent inefficiencies including speed of procurement and delivery of quality WaSH commodities can be created. Inflation of prices can also occur requiring payments above the market rate for POU-WTT and other WaSH commodities and services, potentially undermining existing indigenous supply chains. This can negatively impact the recovery of local markets and may lead to prolonged dependence on external assistance by disaster affected populations (Parkinson and Ridley, 2015).

An alternative approach is to give disaster affected populations cash or vouchers to procure the WaSH commodities/services they

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need in local markets, whilst providing direct support to local market actors to meet supply and demand. The decision to utilise CT/MBP relies on a thorough assessment and mapping of local markets before the crisis event, in the immediate aftermath of the crisis and in the weeks that follow as the population begins to recover (Albu, 2010).

The success of humanitarian responses will be limited unless methodologies able to monitor, evaluate (M&E) and compare the effectiveness of different modalities of delivering humanitarian relief are developed, tested and disseminated amongst the humanitarian community. In this context, this study investigated the parameters that should be measured to determine the added value of using CT/MBP to achieve WaSH objectives in humanitarian response.

## 2. Methods

### 2.1. Stages in the methodology

The goals of this research were to identify parameters to monitor, evaluate and determine the added value of using CT/MBP to achieve WaSH objectives in humanitarian response, and to identify indicators to measure these parameters. An indicator is a quantitative or qualitative factor that provides a simple and reliable means to measure achievement. Multiple indicators may be required to fully measure a single parameter (ALNAP, 2006). The following methodology was applied to achieve this:

Step 1: Determine how CT/MBP (i.e. which approaches and activities) could support the reduction of faeco-oral disease transmission through application of Oxfam and WFP's (2013) spectrum of market based responses to the routes of faeco-oral transmission (The F Diagram). The market based spectrum provides an overall framework of market based programming covering all types of engagement with market systems in humanitarian contexts (see [Supplementary material](#) for more information).

Step 2: Application of parameters common to three existing humanitarian frameworks to existing CT/MBP-WaSH focused literature. The three frameworks were: DFID's Value for Money (VFM), the Core Humanitarian Standard (CHS) and OECD-DEC criteria for evaluation of humanitarian response. All three frameworks are designed to assess the quality of humanitarian response. The aim of the literature review was to determine:

1. If the existing parameters have been applied to CT/MBP WaSH projects;
2. What indicators and methodologies have been used to measure these parameters;
3. How relevant these existing parameters were to monitoring, evaluating and determining the added value of using CT/MBP to achieve WaSH objectives;
4. The range of CT/MBP approaches and activities that have been used to support the achievement of WaSH objectives;
5. If other important parameters emerged from the literature.

**Table 1** Lists the parameters that are common to all three frameworks (VfM, CHS and OECD-DAC).

Step 2: Semi-structured interviews with CT/MBP, WaSH and M&E specialists with direct experience of implementing CT/MBP-WaSH projects to ascertain which parameters and associated indicators and data collection methodologies have been used to monitor and evaluate (M&E) CT/MBP programmes to date and how useful these parameters and methodologies were.

Step 3: The results of steps, 1 and 2 were analysed using thematic framework analysis to determine the most appropriate parameters to monitor, evaluation and determine the added value of using CT/MBP to achieve WaSH objectives in humanitarian response.

Step 4: The parameters determined in step 4 were applied to the case of increasing supply and demand for POU-WTT as part of disaster resilience and post-crisis response. This is relevant for many contexts where POU-WTT is being utilised e.g. cholera outbreaks. As such, the methodology and results of this study can be applied to country and context specific case studies with similar characteristics.

### 2.2. Data collection

Primary data was collected via 12 interviews with key informants from four relief agencies, identified using purposive and snowball sampling. Informants included both technical and operational support practitioners at global (67%), regional and field levels (33%).

Secondary data focusing on M&E of CT/MBP was critically reviewed utilising a configuring review approach which aimed to examine the variation and complexity of different conceptualisations (Barnett-Page and Thomas, 2009). Both published and grey literature were reviewed, the details of which can be found in [Table S1](#) in the supplementary material.

Undertaking both semi-structured interviews and a critical review ensured reliability and validity in the research process by providing sufficient quantity of data covering target points including negative or deviant cases to test emerging interpretations. This approach also enabled triangulation of data in order to verify or contradict emerging interpretations; thus reducing possibility of bias towards particular approaches during data analysis.

### 2.3. Data analysis

Causal chain analysis facilitated the identification of CT/MBP inputs that could support interventions aimed to reduce of faeco-oral disease transmission. Thematic Framework Analysis (TFA) provided systematic and visible stages to the analysis process, creating transparency for obtained data (Lacey and Luff, 2007). Logic model theory aided identification of the inputs, processes, outcomes and impact of utilising CT/MBP to support increasing the supply and demand of POU-WTT.

## 3. Results and discussion

### 3.1. How CT/MBP could support the reduction of faeco-oral disease transmission

Application of Oxfam and WFP's (2013) spectrum of market based responses to the routes of faeco-oral transmission (The F Diagram) enabled the determination of CT/MBP inputs that could support reduction of faeco-oral disease transmission at household, camp/community and market levels including:

- Cash transfers, vouchers for households to purchase essential WaSH commodities
- WaSH focused social marketing
- Supporting local engineers to design contextually and culturally appropriate WaSH technology and infrastructure
- Employment creation for skilled WaSH labour
- Increasing supply and demand for essential WaSH commodities

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