



# **BARRIERS BETWEEN DEVELOPMENT AND EMERGENCIES IN WASH SECTOR**

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**NIYONKURU Paterne**

**Members of panel:** Mougabe KOSLENGAR

Yacouba KONATE

Moumouni DIAFAROU

Amaeh ADUGNA

Omar DEMBELE

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# **DEDICATION**

To the Almighty God

To Jesus Christ

To my beloved mother and father

To my sisters and brother

To my friends and relatives

## ACKNOWLEDGEMENT

I would like to thank God for keeping me safe and for having allowed this work to be completed.

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## ABSTRACT

Water is life and sanitation is dignity. Poor access to safe drinking water and sanitation services are major causes of illness and Poverty. Improving water supply, sanitation facilities and hygiene promotion is one of the most important priorities to achieve the Millennium Development Goals (MDG): to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation is a target of MDG 7 (WHO, 2015; WHO, et al., 2013).

The main objective of this dissertation is the contribution on further understanding of the barriers between development and emergencies in WASH sector and was achieved through the following specific objectives:

- The identification of the difference between development and emergencies contexts in WASH sector;
- The description of technical and non-technical standards and indicators in the interventions of WASH in development and emergencies;

A better understanding on development and emergencies response in WASH sector is essential to improve the efficiency and effectiveness of both responses. Development principles can be applied early in emergency situations to ensure the ground is prepared for development and development assistance can be used to support resilience, prevention and disaster risk reduction.

### Keywords:

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1. **Development**
2. **Emergency**
3. **Humanitarian**
4. **Relief**
5. **WASH**

## RESUME

L'eau c'est la vie et l'assainissement la dignité. Un faible accès à l'eau potable et aux services d'assainissement sont les principales causes de maladies et de la pauvreté. Améliorer l'approvisionnement en eau, des ouvrages d'assainissement et la promotion d'hygiène est l'une des priorités les plus importantes pour parvenir aux Objectifs de Développement du Millénaire : Réduire de moitié la proportion des populations sans accès durable à l'eau potable et à l'assainissement de base est le but de l'ODD 7 (WHO, et al., 2013; WHO, 2015).

L'objectif principal de ce document est la contribution à une compréhension plus approfondie des barrières entre le développement et les urgences dans le secteur WASH ; il a été réalisé à travers les objectifs spécifiques suivants:

- L'identification de la différence entre les contextes du développement et de l'urgence dans le secteur WASH
- La description des normes techniques et non-techniques et des indicateurs lors de l'intervention du WASH dans le développement et de l'urgence
- L'analyse et les discussions sur les barrières entre le développement et les urgences dans le secteur WASH

Une meilleure compréhension de l'intervention au développement et à l'urgence dans le secteur WASH est essentielle pour améliorer l'efficacité et l'efficacités des deux interventions. Les principes du développement peuvent être appliqués tôt dans les situations d'urgence afin d'assurer que le terrain est préparé pour le développement et l'assistance au développement pouvant être utilisé pour supporter la résilience, la prévention et la réduction du risque d'une catastrophe ;

### Mots clés:

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1. Développement
2. Urgence
3. Humanitaire
4. Secours
5. WASH

## LIST OF ABBREVIATIONS

<b>ACF</b>	Action Contre la Faim
<b>AfDB</b>	African Development Bank Group
<b>CARE</b>	Cooperative for Assistance and Relief Everywhere
<b>CERF</b>	Central Emergency Response Funds (UN)
<b>EAP</b>	Environmental Action Programme (for Central and Eastern Europe)
<b>DREF</b>	Disaster Relief Emergency Fund
<b>DRR</b>	Disaster Risk Reduction
<b>ECHO</b>	European Commission, Directorate General for Humanitarian Aid
<b>EU</b>	European Union
<b>GHA</b>	Global Humanitarian Assistance
<b>IADB</b>	Inter-America Development Bank
<b>IBRD</b>	International Bank for Reconstruction and Development
<b>ICRC</b>	International Committee of Red Cross
<b>IDA</b>	International Development Association
<b>IFC</b>	International Finance Corporation
<b>IFRC</b>	International Federation of Red Cross and Red Crescent Societies
<b>JMP</b>	Joint Monitoring Program (for Water, Sanitation and Hygiene)
<b>NGO</b>	Non-Governmental Organization
<b>LRRD</b>	Linking relief, rehabilitation and development
<b>MFA</b>	Ministry of Foreign Affairs (The Netherlands)
<b>MI</b>	Ministry of Infrastructure (Rwanda)
<b>MIGA</b>	Multilateral Investment Guarantee Agency

<b>MLME</b>	Ministry of Lands, Mines and Energy (Liberia)
<b>MPPW</b>	Ministry of Physical Planning and Works (Nepal)
<b>NTU</b>	Nephelometric Turbidity Units
<b>OCHA</b>	Office for the Coordination of Humanitarian Affairs (UN)
<b>OECD</b>	Organization for Economic Co-operation and Development
<b>OFDA</b>	Office of Foreign Disaster Assistance (USAID)
<b>PAHO</b>	Pan American Health Organization
<b>RSA</b>	Republic of South Africa
<b>UN</b>	United Nations
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNICEF</b>	United Nations Children's Fund
<b>USA</b>	United States of America
<b>USAID</b>	United States Agency for International Development
<b>VIP</b>	Ventilated Improved Pit (latrine)
<b>VOICE</b>	Voluntary Organizations in Cooperation in Emergencies
<b>WASH</b>	Water, Sanitation and hygiene
<b>WHO</b>	World Health Organization

## GLOSSARY

**Disaster:** A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources (ACF, 2005).

**Hazard:** A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (PAHO, 2002).

**Humanitarian Crisis:** A humanitarian crisis is an event or series of events which represents a critical threat to the health, safety, security or well-being of a community or other large group of people, usually over a wide area. A humanitarian crisis can have natural or man-made causes, can have a rapid or slow onset and can be of short or protracted duration (ACF, 2005).

**Protracted Crisis:** are explained by places where a significant proportion of the population is vulnerable to death, disease or disruption of their livelihoods over a long period of time. The governance structures are usually weak, with the state unable or unwilling to adequately protect the population (Gensch, et al., 2014).

**Risk:** The combination of probability of an event and its negative consequences (PAHO, 2002).

**Sphere:** The Humanitarian Charter and Minimum Standards in Humanitarian Relief reflect the determination of agencies to improve both the effectiveness of their assistance and their accountability to their stakeholders (Sphere, 2011).

**Vulnerability:** It comprises the characteristics of population groups that make them more or less susceptible to experiencing stress, harm or damage when exposed to particular hazards (PAHO, 2002).

**WASH:** All works related to water, sanitation and hygiene, including the provision of safe and affordable access to a clean water supply and methods of disposing of waste. This involves the provision of services and training on how to manage them (UNICEF, 2006).



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## **I. GENERAL INTRODUCTION**

### **1.1. Background of WASH sector**

Water, sanitation and hygiene (WASH) sector is one of the main sectors of humanitarian operations. It is an important sector for the life of human being which covers water supply, sanitation facilities and hygiene promotion (WHO, et al., 2013).

The activities in this sector focus on the improvement of the following conditions:

**Inadequate access:** 663 million people do not have access to improved drinking water and 2.4 billion people do not have access to basic sanitation facilities with 80 % living in rural area. Of them, 946 million defecate in the open. As a consequence every year around 4 million people, the majority of who are children, die due to diseases related to water, sanitation and hygiene. These conditions became worse with the stricken of crisis (ACF, 2005; WHO, 2015).

**Achievement:** 6600 million people of the world have access to improved sources of drinking water and 2600 million people have gained access to improved drinking water source since 1900. 2100 million people have gained access to improved sanitation facility since 1900.

WASH sector needs to be improved in order to meet the needs and this will be done by good coordination which is crucial to ensure the most efficient use of the resources available (WHO, et al., 2015).

Water is essential in terms of its quantity and quality to sustain life and promote health. It is often used to support basic food needs and livelihoods functions. Sanitation refers to excreta disposal, vector control, solid waste disposal and drainage. Combined with adequate hygiene behavior and management are essential conditions to create a safe environment which reduces the risk of WASH related diseases (UNICEF, 2006).

WASH sector humanitarian interventions are done in different phases including emergencies, rehabilitation and development phase. Emergency phase is the period immediately following the occurrence of a disaster, where exceptional measures have to be taken to search for and rescue the survivors as well as meet their basic needs. Rehabilitation phase is concerned by

planned operations and decisions taken with a view to facilitating more structural adjustments to the impacts caused by the disaster. Development phase refers to the actions taken to restore affected area to the former living conditions including the activities for a long-term development (Jan , et al., 2002).

## **1.2. Crisis and WASH sector**

The types of crisis that require emergency response are: disasters, conflicts, protracted crisis and chronicle disaster (Gensch, et al., 2014).

**Disasters** are caused by natural hazards including earthquakes, volcanic eruptions, landslides, floods, storms, droughts. They particularly affect WASH by destroying infrastructure such as water supply and sanitation facilities which cause the inaccessibility to clean water and sanitation and the practice of relevant hygiene behavior like hand washing is no longer easy and can increase WASH related diseases (ACF, 2005).

**Conflicts** cause the displacement of the population creating refugees or IDPs. Where camps are created and access to clean water, adequate sanitation and hygiene items need to be guaranteed rapidly and often have to be maintained over longer periods. The response for displaced population is difficult because of their movement and the location can also lack WASH facilities accessibility (ACF, 2005).

**Protracted crisis** situations are characterized by recurrent disasters or prolonged conflicts, the governments of these countries are usually weak, with the state having a limited capacity to respond to the crisis and to provide adequate levels of services to the population. The provision of basic water and sanitation services is sometimes neglected in these countries with authoritarian or corrupt governments (Gensch, et al., 2014).

**Chronicle disasters** are determined by the vulnerability of the society and impacts of climate change both on occasional extreme events such as heavy rains causing floods or landslides. The impact on the WASH sector includes the unsafe and hard to forecast water availability as well as the competition for the available water: for WASH purposes or agricultural water demand (Gensch, et al., 2014).

### 1.3. Principles of humanitarian action

The basic principles of humanitarian action are: humanity, impartiality, neutrality and independence. They act as conditions for access to relief under International humanitarian law (Victoria, et al., 2011).

**Humanity** principle is based on the provision of humanitarian assistance wherever it is needed and in a manner that respects and protects the dignity and rights of the individuals. The purpose of humanitarian action is to protect life and health and ensure respect for human beings.

This explains the motivation needed for offering assistance. An essential feature of truly humanitarian aid is that is given without discrimination of any kind.

**Impartiality** concerns the provision of humanitarian assistance without discrimination among recipients: any adverse distinction founded on race, color, religion, sex or any other criteria. The assistance must be guided solely by needs, with priority given to the most urgent cases of distress.

**Neutrality** principle refers to the delivery of humanitarian assistance without engaging in hostilities or taking sides in controversies of a political, racial, religious or ideological nature. It is designed to ensure that relief does not advantage one party, which might otherwise indirectly involve the relief providers in the conflict.

**Operational independence** states the provision of humanitarian assistance in a manner that is autonomous from the political, economic, military or other objectives of any actor engaged in the areas where humanitarian action is being implemented.

### 1.4. Emergency and Development responses

#### 1.4.1. Emergency responses

The main objective of emergency intervention is to guarantee the survival of the population affected by the crisis, meeting basic needs. The response must be rapid and effective, focusing in short-term vulnerability reduction. Emergency responses are mainly appropriate in cases of open conflicts and natural disasters. It is a short-term measure; aiming to save

lives and to alleviate suffering, respecting the humanitarian principles of humanity, impartiality, neutrality and independence, and does not address the root causes of the crisis at hand (House, 2007).

#### **1.4.2. Development responses**

The main objective of development intervention is to improve the living conditions of the communities in the sustainable way and respect of their rights. The approach is based on the participation of the communities and the policy of the country. Those objectives include poverty reduction, promoting adherence to human rights, increasing human security, or even democratization. In addition, development assistance is more long-term oriented and tends to cooperate closely with the government or civil society (Banzet, et al., 2007).

#### **1.4.3. Actors in development and emergency responses**

The main actors in development and emergency responses are (Jan , et al., 2002):

**Intergovernmental organizations:** The most important actor in the provision of humanitarian aid and development assistance is the United Nations and its various agencies, funded by member states. They operate with the objectives of providing aid for humanitarian relief and for rehabilitation; protecting and supporting those affected by crisis. The World Bank and regional development banks also fund development projects.

**Independent support:** As well as multilateral assistance, many countries also direct aid unilaterally through their own foreign-aid and development agencies. In addition to a sense of moral obligation, aid can be part of foreign policy.

**Non-Governmental Organizations (NGOs):** They work independently of individual governments and vary in size, expertise and findings, ranging from large international organizations such as CARE and Save the Children through small, indigenous community-based groups. They increasingly play an important role in providing humanitarian aid and development assistance, both directly and as partners to UN agencies. They often have advantages over Intergovernmental Organizations or foreign governments. For example, they are less limited by political constraints and their diversity and independence allows them to work in very difficult places.

**The Red Cross and Red Crescent Movement:** It has two component bodies: International Committee of Red Cross (ICRC) which works to protect and assist victims of armed conflict and civil strife, including prisoners of war and political detainees. Consequently ICRC works in conflict zones; and International Federation of Red Cross and Red Crescent Societies (IFRC) which support the national societies, provides and coordinates assistance at international level to victims of natural disasters or epidemics. Its particular responsibility is to assist refugees outside conflict areas.

**The Military:** They act primarily to ensure a secure environment in which relief agencies can operate. In some circumstances, the military may also provide aid directly, usually when Intergovernmental Organizations and Non-Governmental Organizations find themselves overstretched or unable to deal with security problems. The military can be used to manage and coordinate the overall humanitarian response and to deal with technically and physically demanding needs, such as restoring communications and supply routes.

### **1.5. Linking relief, rehabilitation and development (LRRD) concept**

Humanitarian actors always look on how to ameliorate the provided assistance to the affected population especially in protracted crises. This improvement can be reached by creating a more acceptable link between short-term life-saving interventions and long-term efforts to reduce chronic poverty and vulnerability.

From that, the idea of joining upon a common understanding of the activities of relief, rehabilitation and development has developed through the LRRD concept. Its main goal is coherence and complementarity between emergency and development responses. It is possible to face both development and emergencies needs and the complementarity can solve the problem.

The idea concerns the growing in number and intensity of emergencies which absorb rapidly growing portion of aid resources and can be perceived as shifting development. More clarity on barriers and areas for potential integration would help promote LRRD.

The problem became big with protracted crisis where there is a need to sustain the population in the environments where the normal parameters for development do not apply. These are explained by funding gaps when the emergency response exits and there is a time delay



before the development assistance starts. In addition, there is strong evidence that fragile states or states in protracted crises do not receive sufficient development support (Mosel, et al., 2014).

So, the idea is to move from continuum model to contiguuum model of response. Continuum model is explained by a linear way of transition from emergencies phase which is followed by rehabilitation and then development.

On the other hand, contiguuum model is described by the development responses which are in some secured parts of the country and the other parts in crisis receive the emergencies responses for the country facing both the development and emergency needs.

There is an argument made to explain the role of rehabilitation aid: Better development can reduce the need for emergency relief, better relief can contribute to development and better rehabilitation can ease the transition between the two.

For the essential life-saving following a disaster, speed of response is very important. Needs assessments, more timely and appropriate responses, better coordination, and more efficiently and effectively to help those in need. After the emergencies, the population needs also to rebuild their lives through a better transition (Buckanan, et al., 2005).

## **1.6. Disaster Risk Reduction (DRR) concept**

DRR is the concept and practice of reducing disaster risks through systematic efforts to analyze and reduce the causal factors of disasters. Reducing exposure to hazards, reducing vulnerability of people and property, wise management of land and the environment, and improving preparedness and early warning for adverse events are all examples of disaster risk reduction (House, 2007).

It is therefore necessary to consider disaster risk when setting up or developing WASH services, whether in emergency response, early recovery or the development phase: this is all about increasing resilience of WASH services to natural disasters by knowing the risks and managing them to the extent possible.

Inadequate WASH services can cause disasters, while disasters can further degrade WASH services, both resulting in increased risk. Hence, the best implementation of DRR principles

in the WASH sector strengthens resilience to natural disasters.

DRR concept in WASH sector is based on the following principles (House, 2007):

- Identify the risks threatening the WASH services and avoid them;
- Reduce the potential impact of hazard events on WASH services (example the mitigation done through the implementation of complete water and sanitation safety plans;
- Safeguard a rapid service level and structural recovery of WASH services after hazard events
- Ensure that the design of the systems addresses earlier vulnerabilities resulting in more resilient WASH services;
- Guarantee that improved WASH services don't introduce new or reinforce existing vulnerabilities or hazards.

## **II. OBJECTIVES, SCOPE AND STRUCTURE**

### **2.1. General objective**

General objective of this dissertation is to contribute to better understanding on the barriers between development and emergencies in WASH sector with a view to discuss various intervention categories and their differences.

### **2.2. Specific objectives**

- To identify the difference between development and emergencies contexts in WASH sector
- To describe standards and indicators in the interventions of WASH in development and emergencies

### **2.3. Scope of the dissertation**

This dissertation is not an exhaustive review of the entire issues relevant to barriers between emergencies and development in WASH sector, but it does aim to give a selected overview of the key literature and to discuss on the main barriers between development and emergencies in WASH sector.

Firstly, this dissertation begins by the reviews of the WASH sector situation, development and emergency contexts. Secondly, the key technical and non-technical standards and indicators related to development and emergency contexts are reviewed. Thirdly, barriers between development and emergencies in WASH sector are discussed. Finally, the conclusion and recommendation from the whole dissertation are provided.

### **2.4. Structure of the dissertation**

The dissertation is made of five chapters. The first chapter contains the background of WASH sector, reviews on crisis, categories of responses, as well as the concepts of LRRD and DRR.

The second chapter focuses on the objectives, scope and the structure of the dissertation. The third chapter deals with the methodology and different aspects related to technical and non-technical standards and guiding indicators of WASH in development and emergency. The

fourth chapter discusses on the barriers between development and emergencies in WASH sector. Finally, conclusion and recommendations are given.

### **III. METHODOLOGY AND GENERALITY**

#### **3.1. Methodology**

The methodology used to conduct this dissertation for most of the part involved the reviews of relevant literature and analysis of information from written documents. This was done by collecting essential information focusing on various types of documentation.

- To identify the difference between development and emergencies contexts in WASH sector, general documents describing both interventions especially for WASH activities were consulted;
- To describe standards and indicators in the interventions of WASH in development and emergencies, existing books on humanitarian interventions, guiding policy of different countries were used;
- To discuss on barriers between development and emergencies in general and particularly in WASH sector; the analysis of the parts was done.

#### **3.2. The difference between development and emergencies contexts in**

##### **WASH sector**

It is crucial to understand the difference between the categories of ways by which the help is delivered to the people in need. The main categories of WASH sector interventions are development and emergencies (Jan , et al., 2002).

##### **3.2.1. WASH in development context**

Safe water, sanitation and hygiene are basic human needs, and are indispensable for the healthy development of individuals as well as for the sustainable development of societies. WASH in development context relates to the individual and collective capacity strengthening to design and coordinate more timely the sustainable water supply, sanitation and hygiene facilities and services.

Water supply services and infrastructures in this context are related to the policy of the country and depend on the needs and conditions of the target population. They include the implementation or rehabilitation of water supply and treatment infrastructure that allow for

adequate operation, maintenance and monitoring by the local population and governments' institutions after their completion. (Parkison, 2009; Gensch, et al., 2014).

Sanitation facilities are sustainable and encompass local considerations and customs. They are designed to have more comfort, dignity and security. The types of facilities for this context must be more durable, possibly based on household level services and appropriate to the local social and cultural preferences. These include: excreta, sewerage and solid waste disposal facilities. For long-term excreta disposal, the improved types of latrines are chosen such as borehole latrine, simple pit latrine, VIP latrine (Jan , et al., 2002).

Hygiene promotion strategies in development focus on messages aiming to achieve long-term behavior change at all levels to reduce the risk of disease transmission and are implemented through community mobilization, social marketing methods and institutional support such as the training of extension staff with respect to broad participation and awareness of gender issues (Jan , et al., 2002).

The context of development is wide and varies depending on the country, standards and guidelines which depend on the country and the level of living of the population.

Basing on the policy of the country, the communities decide their own level of access to safe water, sanitation and the hygiene conditions for healthy living, as well as the economic activities which they use the water and they intervene in the accomplishment of the targets.

### **3.2.2. WASH in emergencies context**

WASH in emergencies has the main role to save and preserve life and reduce the suffering of populations facing severe water, sanitation and hygiene insecurity in the context of crises.

The main objective of WASH interventions in emergencies is to reduce the transmission of fecal-oral diseases and exposure to disease-bearing vectors through the promotion of good hygiene practices, the provision of sufficient quantities of safe drinking water, the reduction of environmental health risks and the promotion of conditions that allow people to live with good health, dignity, comfort and security (Gensch, et al., 2014).

The services are delivered immediately to the affected population and help them to live with

health, dignity and security (Bartram, et al., 2014).

WASH interventions in emergencies context focus on achieving the following objectives:

- To ensure timely and dignified access to sufficient and safe WASH services for populations in crises
- To prevent the spread of WASH related diseases in populations
- Better delivery of WASH assistance

Water supply interventions in emergencies focus on providing reasonably clean and safe water supply, in sufficient quantities in the fastest possible time. The priority is to provide equitable access to an adequate quantity of water even if it is of intermediate quality (PAHO, 2002).

Sanitation interventions in emergencies focus on immediate and safe excreta disposal. Excreta disposal is a major concern during the emergency phase due to widespread practice of open defecation. Open defecation poses a serious health problem with incidences of diarrhea diseases and cholera. Thus, sanitation interventions are those that are aimed at the disposal of human excreta in a manner designed to reduce direct or indirect human contact. There is a wide range of sanitation technologies dominated by pit latrines that may be promoted in emergency responses (ACF, 2005).

In some emergency settings, notably refugee and displaced persons camps, the communal latrine approach is often the standard approach of UN and NGOs, because of the urgent need to provide latrine facilities in a short period of time, or the temporary nature of the camp. However, with communal latrines, there are often major problems with ownership and therefore cleaning and maintaining of hygiene standards. There can also be problems of accessibility and safety if people have to walk long distances to use the communal site. Priority should be given to protecting drinking water sources (House, 2007).

Hygiene Promotion in emergencies focus on immediate actions which hold the greatest potential to reduce the spread and the risk of environmental health related outbreaks such as hand washing, distribution of hygienic kits and safe excreta disposal and is done in coordination with the populations in crises (ACF, 2005).

The context of emergencies has a limited time reference for intervention depending on the situation, some guidelines and standards were fixed by actors in order to provide the best response.

### **3.3. Technical standards and indicators of WASH in development and emergencies**

#### **3.3.1. Technical standards and indicators of WASH in development context**

In development context, standards and indicators vary with country and the living style of the population. This present dissertation gives examples of 3 countries in Africa, 2 countries in Asia and 1 country in Europe:

- **South Africa** states a basic level of sanitation facilities for a household as a ventilated improved pit (VIP) latrine with addition of best hygiene practices information, minimum quantity of water of 25 liters/person/day, maximum distance to water point of 200 meters, maximum filling time of 1 minute for 10 liter container, the quality of water following WHO guidelines (RSA, 1994).
- **Rwanda:** The minimum quality of sanitation facilities set by the government norms and standards for a household is a VIP latrine properly cleaned and maintained with addition of best hygiene practices information, 30 meters from home (Ekane, 2013); minimum accessible, reliable and affordable quantity of water of 20 liters/person/day, maximum distance to water point of 500 meters in rural areas and 200 meters in urban areas, reasonable filling time. Water quality is assumed to be acceptable for improved water sources but shall be tested for compliance with national and WHO standards for potable water (MI, 2013).
- **Ethiopia:** The National Standard for water consumption is 15 liters per head per day, water point within 50 meters. The quality of water meeting WHO guidelines and the Ethiopian Water Quality Standard of 0 fecal coliforms per 100ml for microbiological water quality as the standard for community supplies. Improved sanitation with messages of diarrheal disease reduction through hygiene, sanitation and improvement to water supply (Sally, et al., 2012).
- **Yemen:** The basic services for water supply and sanitation facilities; minimum quantity of safe drinking water of 25 liters/person/day, maximum distance to water point of 350-500 meters, the quality of water meeting WHO guidelines, improved



latrine per household (MFA, 2008).

- **Nepal:** The basic services of water consumption and sanitation facilities are defined by the policy: minimum quantity of safe drinking water of 20-45 liters/person/day, within 20 minutes walking distance, regularity of at least 4 hours per day, acceptable water quality meeting WHO guidelines, improved latrine per household and hygiene promotion to reduce fecal-oral disease transmission (MPPW, 2008).
- **Armenia:** the minimum water supply and sanitation standards are: minimum quantity of safe drinking water of 50 liters/person/day, maximum distance to water point of 100 meters, regularity of at least eight hours per day (for piped water supply), acceptable water quality meeting WHO guidelines, improved latrine per household and access to sewerage (EAP, 2008).

### 3.3.2. Technical standards and indicators of WASH in emergency context

The standards and key indicators which serve as reference for emergencies are established in the Sphere project handbook and WHO guidelines for Drinking Water Quality. The sphere project handbook was written by a group of NGOs and the Red Cross and Red Crescent Movement to improve the quality and accountability of humanitarian response and of their implementing agencies in situations of disaster and conflict basing on the collective experience of many people and agencies (Sphere, 2011).

The minimum standards for WASH are a practical and based to the provision of sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses and accessible sanitation facilities. An adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking and personal and domestic hygienic requirements (ACF, 2005).

#### 3.3.2.1. Water supply in emergencies

**Water quantity:** safe and equitable accessibility to a sufficient quantity of water for drinking, cooking, hygiene and laundry.

The main guiding indicators of minimum requirement in emergencies compared with common minimum services in development are described in the Table 3.1 (ACF, 2005):

Table 3. 1: Guiding indicators of minimum water supply services

<b>INDICATOR</b>	<b>EMERGENCIES</b>	<b>DEVELOPMENT</b>
Water quantity	15 liters/person/day	National standard 30-60 liters/person/day
Maximum distance to water point	500 meters	50 meters
Maximum queuing time	15 minutes	No waiting time
Maximum filling time	3 minutes for 20 liter container	-
Maximum number of people per tap of 7.5 liters/minute	250	Household connection 75
Maximum number of people per hand pump of 16.6 liters/minute	500	150
Maximum number of people per single user open well of 12.5 liters/minute	400	120

The guidelines for minimum water quantities for institutions and other uses are describes below in Table 3.2 (ACF, 2005; Sphere, 2011):

Table 3. 2: Guidelines for minimum water quantities for institutions and other uses

INSTITUTION	GUIDELINES
Health centers and hospitals	5 liters/outpatient 40-60 liters/inpatient/day Additional quantity may be needed for laundry equipment and flushing toilet
Cholera centers	60 liters/patient/day 15 liters/carer/day
Therapeutic feeding centers	30 liters/inpatient/day 15 liters/carer/day
Schools	3 liters/pupil/day for drinking and hand washing
Mosques	2-5 liters/person/day for washing and drinking
Public toilets	1-2 liters/user/day for hand washing 2-8 liters/cubicle/day for toilet cleaning All flushing toilets 20-40 liters/user/day for conventional flushing toilets connected to sewer 3-5 liters/user/day for pour-flush toilets Anal washing 1-2 liters/person/day
Livestock	20-30 liters/per large or medium animal/day 5 liters/small animal/day
Small scale irrigation	3-6mm/m <sup>2</sup> /day, but can vary considerably

**Water quality:** acceptable water with sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health.

The main indicators of minimum requirement in emergencies compared with common minimum services in development are described in the Table 3.3 (ACF, 2005; Sphere, 2011):

Table 3. 3: Guiding indicators of minimum water quality services

INDICATOR	EMERGENCIES	DEVELOPMENT
Microbiological water quality	0 fecal coliforms per 100ml	0 fecal coliforms per 100ml
Maximum turbidity of piped water supply	5 NTU	5 NTU
Free chlorine residual at the tap of piped water supply	0.5 mg/liter	0.5 mg/liter
Sanitation survey	Low risk of possible fecal contamination	Low risk of possible fecal contamination
Chemical contamination	No contamination	No contamination
Radioactive contamination	No contamination	No contamination
Maximum total dissolved solids	1000 mg/liter	1000 mg/liter
Maximum conductivity	2000 $\mu$ /cm	2000 $\mu$ /cm

**Water use facilities:** adequate facilities and supplies to collect store and use sufficient quantities of water for drinking, cooking and personal hygiene and to ensure that drinking water remains safe until it is consumed.

The main guiding indicators are described below in the Table 3.4 (ACF, 2005; Sphere, 2011):

Table 3. 4: Guiding indicators of water use facilities

INDICATOR	GUIDELINES
Containers per household	2 of 10-20 liters for transportation and 1 of 10-20 liters for storage
Bathing soap	250 g/person/month
Laundry soap	200 g/person/month
Laundry	1 washing basin/100 people
Bathing facilities	1 shower/40 people

### **3.3.2.2. Sanitation in emergencies**

**Environment free from human feces:** The living environment in general and specifically the habitat, food production areas, public centers and surroundings of drinking water sources are free from human fecal contamination.

**Appropriate and adequate latrine facilities:** adequate numbers of latrines sufficiently close to their home, to allow them rapid, safe and acceptable access at all times of the day and night.

**Individual and family protection:** people have the knowledge and the means to protect themselves from disease and nuisance vectors that are likely to cause a significant risk to health or well-being.

**Physical, environmental and chemical protection measures:** The environment where the disaster-affected people are placed does not expose them to disease-causing and nuisance vectors, and those vectors are kept to a reduced level where possible.

**Chemical control safety:** Chemical vector control measures are carried out in a manner that ensures that staff, the disaster-affected population and the local environment are adequately protected and that avoids creating chemical resistance to the substances used.

**Collection and disposal:** The affected population has an environment not littered by solid waste, including medical waste, and has the means to dispose of their domestic waste conveniently and effectively.

**Drainage work:** People have an environment in which health risks and other risks posed by water erosion and standing water, including storm water, floodwater, domestic wastewater and wastewater from medical facilities, are minimized.

The main indicators are described in the Table 3.5 (ACF, 2005; Sphere, 2011):

Table 3. 5: Guiding indicators of minimum sanitation services

INDICATOR	EMERGENCIES	DEVELOPMENT
Maximum number of people per latrine in first phase	50	1 latrine per family
Maximum number of people per latrine in second phase	20	1 latrine per family
Maximum distance from home	50 meters	50 meters
Minimum distance from nearest water point	50 meters	50 meters
Refuse container	100 liters/10 households	
Maximum distance to refuse pit	100 meters	
Defecation areas	At least 50 meters away from the nearest water point	No defecation area

The guidelines for minimum number of latrines at public places and institutions in disaster situations are describes below in Table 3.6 (ACF, 2005):

Table 3. 6: Guiding indicators minimum number of latrines at public places and institutions in disaster situations

INSTITUTIONS	SHORT-TERM	LONG-TERM
Market areas	1 latrine for 50 stalls	1 latrine for 20 stalls
Hospital and medical centers	1 latrine for 50 outpatients	1 latrine for 20 outpatients
Feeding centers	1 latrine for 20 children	1 latrine for 10 children
Reception and transit centers	1 latrine for 50 stalls 3:1 female to male	1 latrine for 50 stalls 3:1 female to male
Schools	1 latrine for 30 girls 1 latrine for 60 boys	1 latrine for 30 girls 1 latrine for 60 boys
Offices	1 latrine for 20 staff	1 latrine for 20 staff

### 3.3.2.3. Hygiene in emergencies

Hygiene promotion involves ensuring that people make the best use of the water, sanitation and hygiene facilities and services provided and includes the effective operation and maintenance of the facilities. The three key factors are:

- A mutual sharing of information and knowledge
- The mobilization of affected communities
- The provision of essential materials and facilities.

**Hygiene promotion implementation:** all the affected population have to be aware of key public health risks and are mobilized to adopt measures to prevent the deterioration in hygienic conditions and to use and maintain the facilities provided.

**Use of hygiene items:** People have access to and are involved in identifying and promoting the use of hygiene items to ensure personal hygiene, health, dignity and well-being.

The main indicators are described in the Table 3.7 (Sphere, 2011):

Table 3. 7: Guiding indicators for hygiene promotion

INDICATOR	DESCRIPTION
Use of hygiene facilities	All people
Hand washing	All people
Messages delivery	Using mass media to many people and group targeting for message clarification
Number hygiene promoters	2 per 1000 people
Acceptable material for menstrual hygiene, e.g. washable cotton cloth	1 per person
Additional items: <ul style="list-style-type: none"> <li>▪ 5ml/100g toothpaste, 1 toothbrush, 250 ml shampoo, 250 ml lotion for infants and children up to 2 years of age, one disposable razor, underwear for women and girls of menstrual age, one hairbrush and/or comb</li> </ul>	Per person per month Subject to availability

### **3.4. Donors and funding mechanisms**

Existing procedures for mobilizing humanitarian aid are designed to be rapid and flexible to allow for a speedy response (House, 2007). The procedures to mobilize development funds required significant time, the financing regulations for many funders lack flexibility (Willets, et al., 2008).

This dissertation presents some of criteria, conditions and procedures required to get funds from institutions and donors for development and emergencies response.

**Disaster Relief Emergency Fund (DREF)** established by the International Federation of Red Cross and Red Crescent Societies (IFRC) is specific for helping national societies for emergencies responses. Basing on the first aim of the IFRC's Strategy 2020 is to "save lives, protect livelihoods, and strengthen recovery from disasters and crises", DREF works only the in emergencies to meet the life preservation and basic subsistence needs of those people affected. But, it does not cover the support for long-term, here the national societies may continue to provide development assistance with other funding.

DREF has two different types of funding; loan facility for large scale disaster and grant facility small and large-scale disasters with the followings conditions: emergencies activities which meet immediate needs of the affected population, applications in 3 days for loan facility and 10 days for grant facility and more important is timeless for approval depending on the scale and the scope of the disaster (DREF, 2012).

**Central Emergency Response Funds (CERFs)** is one of the fastest and most effective ways to support rapid humanitarian response for people affected by natural disasters and armed conflict. Funds are provided to in-country actors to address unexpected humanitarian needs in rapid and flexible funding way. CERF funding is available to both NGOs and UN agencies for emergency response and occasionally emergency preparedness. It is managed by Office for the Coordination of Humanitarian Affairs (OCHA) and the majority of funds go to NGOs. In general CERFs only fund lifesaving activities in response to a humanitarian emergency. But, it can be used to aid local capacity building by providing funding directly to smaller local NGOS. This information is not known in all actors in-country (GHA, 2011). The main donors of CERFs are governments, private sector and organizations.



**USAID Office of Foreign Disaster Assistance (USAID/OFDA)** has a mandate is to save lives, alleviate human suffering, and reduce the social and economic impact of disasters. It is fulfilled by providing rapid, appropriate responses to requests for assistance, strengthening the capacity of local, national, regional, and international entities on early warning of natural hazards, integrating preparedness and mitigation with disaster response, early recovery, and transition to foster resilience and supporting diversified, resilient livelihood strategies. Through its humanitarian assistance, it seeks more opportunities to reduce vulnerability and lay the foundation for longer-term development while continuing its primary focus on saving lives (USAID, 2012).

USAID supports specifically the response to Internally Displaced Persons (IDPs) and is a priority with an objective of reducing the negative affect of IDPs on the stability and prospects. It is committed to support IDPs from emergency relief to transitional aid to long-term development assistance. This is achieved by working closely with UN agencies, international organizations, NGOs, governments and local institutions in the affected country (USAID, 2004).

USAID also focuses on development assistance by undertaking longer-term programming in chronically vulnerable communities and working sufficiently flexible in higher-risk areas to build resilience and facilitate inclusive growth.

Emergency programs are generally funded for up to one year at a time. WASH sector is among the supported sector. Sphere standards are baseline for getting funds for hygiene promotion, water supply and sanitation facilities responses. The early recovery responses are also funded to reach sustainability of hygiene promotion activities, water supply infrastructures and sanitations facilities.

**European Union (EU)** is among the biggest humanitarian donor in the world. Funds are provided for humanitarian operations in crises around the world through a range of partners including NGOs which play a crucial role in delivering humanitarian aid. This help is coordinated by European Commission, Directorate General for Humanitarian Aid with the main objective of promoting respect of humanitarian principles of humanity, impartiality, neutrality and independence of humanitarian action, protected in International Law, in particular International Humanitarian Law and improve the quality, coherence and

effectiveness of EU humanitarian response (VOICE, 2014).

EU funding is prioritized on the basis of the impact predicted, speed and quality, considering the beneficiaries needs and priorities as well as the comparative cost-effectiveness of the chosen response compared to other response options.

EU also prioritize LRRD concept and Disaster Risk Reduction (DRR) measures by improving coordination between governments' humanitarian and development agencies, and providing more flexible LRRD funding to allow partners to respond in a way that reflects evolving needs and integrating DRR into development policy and practice.

EU supports also the development assistance basing on the MDGs with objective of helping developing countries to achieve them. This aid is managed by European Commission through two main instruments: European Development Funds for Africa, the Caribbean and Pacific Countries (EDF) and Development Cooperation Instrument for Asia, the Middle East and Latin America (DCI). Among the objectives of EC is to contribute to problems like environmental degradation or uncontrolled migration (Tindale, 2013).

**African Development Bank (AfDB) Group** is a public development bank that lends money and gives grants to African governments. It is an important institution which supports the sustainable economic development and social progress in its member countries. It also provides loans and other support to private companies investing in Africa. The bank supports sustainable development of infrastructures including water and sanitation facilities (AfDB, 2013).

**Inter-America Development Bank (IADB)** aims to improve lives in Latin America and the Caribbean, through financial and technical support for countries working to reduce poverty and inequality. The main goal is to achieve development in a sustainable, climate-friendly way (Griffith-Jones, et al., 2008).

**World Bank Group** support to promote growth and overcome poverty in developing countries through the following different institutions: the International Bank for Reconstruction and Development (IBRD), which provides financing, risk management products, and other financial services to members; the International Development Association (IDA), which provides interest-free loans and grants to the poorest countries; the International Finance Corporation (IFC), which makes equity investments, and provides

loans, guarantees and advisory services to private-sector business in developing countries; and the Bank Group's political risk insurance agency, the Multilateral Investment Guarantee Agency (MIGA). IDA is a multi-issue institution, supporting a range of development activities including clean water and sanitation. These interventions pave the way toward equality, economic growth, job creation, higher incomes, and better living conditions (Goldin, et al., 2002).

## **IV. ANALYSIS AND DISCUSSIONS ON BARRIERS BETWEEN DEVELOPMENT AND EMERGENCIES IN WASH SECTOR**

The barriers between development and emergencies in WASH sector are based on the humanitarian principles, the timeframe of interventions, the goals and objectives of actors, the mandates of actors, the implementing partners, funds and contracting procedures, needs, security of personnel, institutional cultures and political issues.

### **3.1. Humanitarian Principles**

Emergencies response is based on fundamental principles of humanity, impartiality, neutrality and independence and thus to gain access to those most in need, and it is dispensed via non-governmental and international organizations. Development responses are usually run in conjunction with the government and follow the policy of the government, basing on principles of ownership, results and mutual accountability.

Providing humanitarian assistance according to humanitarian principles means not engaging in more political rehabilitation and reconstruction work that compromises impartiality, neutrality and independence. However, sometimes emergency supply systems can form the basis for the development of more permanent supply systems.

Example of repairing an existing water systems or the construction of new systems suitable for providing drinking water to the existing local population after the emergency has passed. To provide a sustainable infrastructure, the collaboration with the government host is required and this is not suitable for emergency relief actors through the guiding principles.

Humanitarian actors should take account of this potential in choosing appropriate emergency interventions in situations where this is applicable. Repair of existing systems is an important option, especially in emergencies where the population has not been displaced. But the principles based barriers between development and emergencies block this needed partnership between actors.

### **3.2. Timeframe**

The timeframes of interventions are different; the emergencies response must be rapid and effective, focusing in short-term vulnerability reduction. The aid is provided urgently in order to reduce the immediate suffering during the crisis. The affected populations are incapable of meeting their immediate needs and require help as soon as possible. The solutions used in emergencies works need to be deployed quickly and address the immediate problems as thoroughly as possible.

For WASH sector, the help concerns water supply, sanitation facilities and hygiene promotion in order to help the affected people get safe water and prevent the spread of diseases.

On the other hand, development focuses on the long-term process whereby individuals and communities sustainably improve their quality of life. It is the work to meet the anticipated needs of an identified community far into the future. The solutions employed in development assistance must work with people that are being served in order to become sustainable solutions that will permanently change the situation of a community.

Development programs last years and gains often take years to see. This work is essential to sustainably transforming a community. In WASH, development looks like working with communities and regional actors to ensure universal access to water, sanitation, and hygiene education for generations (example of training of water supply specialists).

The provision of drinking water by tankers is a solution for survival supply when time is very limited and other systems cannot be realized within the time limits. But, the timeframe is a barrier for a better preparation of the ground for development mode of water supply (example of piping water supply which can be used where the population was not displaced as sustainable solution).

### **3.3. Goals and objectives**

The main goal of emergencies is the survival (saving lives of individuals). The emergency help is mainly appropriate in cases of open conflicts and natural disasters. However, the main goal of development is to improve the living conditions and to reach to a sustainable development and the response is delivered through governments.

The development interventions are appropriate in the case of post crisis, discrimination and deconstruction. The type of crisis defines the goals and objectives for the intervention, which make barriers around who or what a particular kind of aid is for and how it is to be delivered and affect the better complementarity which should be between emergencies and development response. Those barriers complicate the situation of actors in development assistance in conflict settings where there is no governmental structure to work with (HINDS, 2015).

### **3.4. Mandates**

The guiding strategy of development assistance focuses on governments, national ownership and capacity-building which is not always consistent with the humanitarian mandates. This creates the tensions between humanitarian and development mandates. Example of OCHA which has the mandate to mobilize and coordinate the collective efforts of the international community, in particular those of UN system, to meet the needs of those affected by natural and environmental disasters, and complex emergencies. Then, the mandate of UNDP primary concerns development issues related to emergency but it does not become operationally in emergency relief.

There is a lack of clarity in how humanitarian, development and security actors work alongside each other in conflict-affected environments. Barriers relate to the different mandates which could complement for a better response especially in protracted crisis.

While they have distinct mandates, it is the responsibility of both humanitarian and development actors to contribute to building resilience and local capacity. It is essential for humanitarian and development actors to work closely together to help communities' transition from relief to recovery and to better mitigate the effects of future crisis.

### **3.5. Implementing partners**

Some operational agencies may specialize in either development or humanitarian assistance, making it difficult for donors to support projects across different forms of assistance. There are barriers for donors to support interventions with different actors. Indeed, the interventions supposed to be implemented by partners who lack necessary expertise or capacity to operate across different forms of aid and coordination of activities with different actors.

Smaller implementing organizations may have a narrow expertise base and lack the knowledge and knowhow to adopt an early recovery approach, or to incorporate development thinking from the beginning in line with humanitarian principle. Some specialist development organizations may lack the capacity to think about humanitarian factors in their work. Each side focuses on the relating background and experience and finds difficult to include the other perspective.

WASH relief also needs to use adapted methods in rural and urban areas, which require different expertise and skills. Particularly for responding adequately in urban areas the necessary capacities within the responding organizations are often limited. In addition, limited capacity at local level is frequently an issue when handing over emergency WASH services to local partners after acute crisis.

### **3.6. Funds and Contracting Procedures**

The sources and conditions of funds for development and emergencies responses are different. Conditions for emergencies needs are easy and the approval time is short. Funding services for development response have complex and extremely time-consuming legal requirements that are hard to bear for more fast-paced which is a lack of flexibility in funding arrangements but there is less risk-averse humanitarian for emergencies response. Humanitarian assistance allocates several times as much per beneficiary than development assistance.

These are barriers for the coherence and the complementarity required for some situations. Example of Myanmar storm crisis in 2011 where the support funded by DREF included work on safe water supply and basic sanitation. But, it is clear that funds from DREF do not support the development response, so the provision of development response had to be done with others funding which arrive too late (DREF, 2012).

### **3.7. Separate needs**

The needs for emergencies and development responses are different. When a natural disaster strikes or a conflict erupts, people need immediate lifesaving aid, in WASH response the quantity of clean water to be supplied per person, sanitation facilities required by the affected population and the message for hygiene promotion are planned basic on the Sphere project

guidelines.

When the disaster passes, the needs change and the guidelines for basic level of services vary according to the country. The separate needs are barriers to the transition to move from one programme to another and also to work in different geographical areas and using different methods and tools. In addition, the funding mechanisms have specific barriers attached concerning scope and the needs. The example of supplying water in emergency, water trucking can be used because the needs is low compared to development where strategy of supplying water can move to piping systems which is a sustainable solution for a better future.

Indeed, the approach of development interventions is based on the participation of the communities. It is difficult to convince a displaced to participate actively in some activities. But, for the stable population, it is more easily to be mobilized in the development activities.

In emergencies response attention must be taken in order to serve all the population affected example of disabled people. But, in development there may be specific project and policy to handle the problems of any types of population.

### **3.8. Security of personnel**

The security of humanitarian personnel continues to deteriorate in the emergencies context of conflict crisis. Their security in development context is good because the government is well functioning. Some experts may be required in protracted crisis where development works are necessary but the security of actors in development context, the knowledge and preparation on the security issues in a barrier.

### **3.9. Institutional culture**

The international and national funding institutions have different department some in charge of emergencies relief and others in charge of development assistance (EU, USAID).

The example of EU which has two institutions: ECHO which focuses on emergency relief and EDF and DCI which focus on development cooperation. Every institution or department operates independently, these distinction and separation is barrier and complicate the collaboration and complementarity between both responses.



### **3.10. Political issues**

In emergencies context of displaced population, it is difficult to move from emergency response to development assistance because most of the politicians do not want them to stay where they are. These political based barriers can oppose to the activities that are seen to make the settlement more permanent and well developed for fear of not being able to move the population back to where they came from.

These become more complicated if the conditions in the camp prove to become better than those in local settlements and tensions arrive between the local population and the displaced population.

For protracted crisis, the governments of these countries are usually weak, with the state having a limited capacity to respond to the crisis and to provide adequate levels of services to the population. In these cases actors for development assistance might face the problem with conventional government channels.

Indeed, the development assistance is attached to political interest, where donors' governments decide to respond emergencies in general but for development, the decision depends on the political interest.

## **V. CONCLUSION AND RECOMMENDATIONS**

### **5.1. Conclusions**

A deep understanding on the relationship between humanitarian relief and development assistance to the population in need is essential in order to improve the efficiency and effectiveness of both responses.

Actors must focus on key principles from the Paris Declaration and the Accra Agenda for Action to ensure a better development by improving the effectiveness of aid (Appendix 5).

Standards and guiding indicators for emergency response are important for life-saving and must be respected because they are designed on the minimum level. Water and sanitation are critical determinants for survival in the initial stages of a disaster. People affected by disasters are generally much more susceptible to illness and death from disease, which to a large extent are related to inadequate sanitation, inadequate water supplies and inability to maintain good hygiene.

Emergency relief and development assistance can be linked through LRRD and DRR concepts and it is necessary to support people surviving disasters and get back on the path to self-reliance and dignity. To ensure a smooth transition the coherence, planning, coordination and practices are required.

The main barriers between development and emergencies in WASH sector are the principles, the varying timeframe, the mandates, goals, culture and objectives of actors, implementing partners, funds and contacting procedures, needs, security of personnel and political issues.

When emergencies methods are applied in development situations, the change rarely lasts far beyond the project, returning a community back to the original situation. And when development methods are applied in emergencies situations, help often comes too late and fails to meet very urgent needs. It is important to be sure that the right methods are used at the right time in order to serve well the population in need.

Those barriers limit the some of the responses necessary of the wellbeing of the population especially in the protracted crises where the cohesion and complementarity between emergency and development are required.

## **5.2. Recommendations**

Based on the above conclusions, the following recommendations are compiled:

- Promoting the inclusion of the concepts of DRR and LRRD measures into actors' strategies to facilitate effective responses.
- Standards must be adhered to and the dignity of beneficiaries be respected at all times by all actors.
- Increase the flexibility of funding instruments
- Further research in emergency and development barriers so as to better understand and have a well-integrated approach is required with advanced methodology where interviews for different actors are helpful.

## **5.3. Limitations**

Duration of the study does not give room for in-depth search on related documents and therefore caution is needed not to generalize the findings.

This study only focuses on secondary data review on literatures relating to the topic and no data collection in the field was done. This is a constraint in interpreting the results of the finds as it may not be the real picture on the ground.

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**Appendix 1: Basic survival water needs (Sphere, 2011);**

INDICATORS	DESCRIPTION	COMMENTS
Survival needs: water intake (drinking and food)	2.5–3 liters per day	Depends on the climate and individual physiology
Basic hygiene practices	2–6 liters per day	Depends on social and cultural norms
Basic cooking needs	3–6 liters per day	Depends on food type and social and cultural norms
Total basic water needs	7.5–15 liters per day	



**Appendix 2: Description of service level of water in relation to hygiene (Howard, 2003);**

<b>INDICATORS</b>	<b>BASIC ACCESS</b>	<b>INTERMEDIATE ACCESS</b>	<b>OPTIMAL ACCESS</b>
Quantity of water	20 liters/person/day	20 liters/person/day	20 liters/person/day
Time to water point	5-30 minutes	Single tap household connection	Multiple taps household connection
Distance to water point	100-1000 meters	Household connection	Household connection
Level of health concern	Medium. Not all requirements can be met. Water quality difficult to ensure	Low. Most basic hygiene and consumption needs met.	Very low. All uses can be made. Quality water assured.

### **Appendix 3: Millennium Development Goals (WHO, et al., 2015);**

United Nations' vision to fight poverty in its many dimensions was translated into eight Millennium Development Goals (MDGs) to overreach the development framework of the world for 15 years since 2000 to 2015. They are described below (UN, 2015):

#### **GOAL 1: ERADICATE EXTREME POVERTY AND HUNGER**

- Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day
- Achieve full and productive employment and decent work for all, including women and young people
- Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Globally, the number of people living in extreme poverty has declined by more than half, falling from 1.9 billion in 1990 to 836 million in 2015. Most progress has occurred since 2000.

#### **GOAL 2: ACHIEVE UNIVERSAL PRIMARY EDUCATION**

- Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

The number of out-of-school children of primary school age worldwide has fallen by almost half, to an estimated 57 million in 2015, down from 100 million in 2000.

#### **GOAL 3: PROMOTE GENDER EQUALITY AND EMPOWER WOMEN**

- Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015.

Many more girls are now in school compared to 15 years ago. The developing regions as a whole have achieved the target to eliminate gender disparity in primary, secondary and tertiary education.

#### **GOAL 4: REDUCE CHILD MORTALITY**

- Reduce by two thirds, between 1990 and 2015, the under-five mortality rate.

The global under-five mortality rate has declined by more than half, dropping from 90 to 43 deaths per 1,000 live births between 1990 and 2015.

Despite population growth in the developing regions, the number of deaths of children under five has declined from 12.7 million in 1990 to almost 6 million in 2015 globally.

### **GOAL 5: IMPROVE MATERNAL HEALTH**

- Reduce by three quarters the maternal mortality ratio
- Achieve universal access to reproductive health

Since 1990, the maternal mortality ratio has declined by 45 per cent worldwide, and most of the reduction has occurred since 2000.

More than 71 per cent of births were assisted by skilled health personnel globally in 2014, an increase from 59 per cent in 1990.

### **GOAL 6: COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES**

- Have halted by 2015 and begun to reverse the spread of HIV/AIDS
- Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it
- Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

New HIV infections fell by approximately 40 per cent between 2000 and 2013, from an estimated 3.5 million cases to 2.1 million.

Over 6.2 million malaria deaths have been averted between 2000 and 2015, primarily of children under five years of age in sub-Saharan Africa. The global malaria incidence rate has fallen by an estimated 37 per cent and the mortality rate by 58 per cent.

### **GOAL 7: ENSURE ENVIRONMENTAL SUSTAINABILITY**

- Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
- Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss
- Halve, by 2015, the proportion of the population without sustainable access to safe

drinking water and basic sanitation

- By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

Of the 2.6 billion people who have gained access to improved drinking water since 1990, 1.9 billion gained access to piped drinking water on premises. Over half of the global population (58 per cent) now enjoys this higher level of service.

Worldwide, 2.1 billion people have gained access to improved sanitation. The proportion of people practicing open defecation has fallen almost by half since 1990.

### **GOAL 8: DEVELOP A GLOBAL PARTNERSHIP FOR DEVELOPMENT**

- Develop further an open, rule-based, predictable, non-discriminatory trading and financial system
- Address the special needs of least developed countries, landlocked countries and small island developing states
- Deal comprehensively with developing countries' debt
- In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
- In cooperation with the private sector, make available benefits of new technologies, especially ICTs

Official development assistance from developed countries increased by 66 per cent in real terms between 2000 and 2014, reaching \$135.2 billion

The proportion of external debt service to export revenue in developing countries fell from 12 per cent in 2000 to 3 per cent in 2013.

As of 2015, 95 per cent of the world's population is covered by a mobile-cellular signal.

Internet penetration has grown from just over 6 per cent of the world's population in 2000 to 43 per cent in 2015. As a result, 3.2 billion people are linked to a global network of content and applications.

**Appendix 4: Summary of emergency and development interventions  
(Gensch, et al., 2014);**

<b>CRITERIA</b>	<b>HUMANITARIAN RELIEF</b>	<b>DEVELOPMENT ASSISTANCE</b>
Goals	To save lives	To support sustainable development
Target	Affected population	Population in general focusing on poor and most needy
Timeframe	Usually up to 6 months	Usually between 3 up to 10 years
Principles	Humanity Independence Impartiality Neutrality	Sustainability Ownership Empowerment
Coordination	WASH cluster	Governmental institutions

## **Appendix 5: Key principles from the Paris Declaration (2005) and the Accra Agenda for Action (2008) (UNCTAD, 2011);**

The Paris Declaration outlines the following five fundamental principles for making aid more effective:

- 1. Ownership:** Developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption.
- 2. Alignment:** Donor countries align behind these objectives and use local systems.
- 3. Harmonisation:** Donor countries coordinate, simplify procedures and share information to avoid duplication.
- 4. Results:** Developing countries and donors shift focus to development results and results get measured.
- 5. Mutual accountability:** Donors and partners are accountable for development results.

The Accra Agenda for Action

Designed to strengthen and deepen implementation of the Paris Declaration, the Accra Agenda for Action takes stock of progress and sets the agenda for accelerated advancement towards the Paris targets. It proposes the following three main areas for improvement:

- 1. Ownership:** Countries have more say over their development processes through wider participation in development policy formulation, stronger leadership on aid coordination, and more use of country systems for aid delivery.
- 2. Inclusive partnerships:** All partners – including donors on the OECD Development Assistance Committee and developing countries, as well as other donors, foundations and civil society – participate fully.
- 3. Delivering results:** Aid is focused on real and measurable impact on development.