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Understanding Challenges to Emergency Response and Ongoing Operations in UNHCR

*A Master Thesis Project in Humanitarian Logistics
with the United Nations High Commissioner for Refugees
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by

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*“Never measure the height of a mountain until
you have reached the top. Then you will see how
low it was.”*

Dag Hammarskjöld, *Markings* (1964)

Preface

This master thesis was written between January 2017 and June 2017 at the Department of Industrial Management and Logistics at Lund University, Faculty of Engineering (LTH) and in close collaboration with the United Nations High Commissioner for Refugees (UNHCR) in Athens, Greece.

The authors would like to express their gratitude to all UNHCR colleagues who have been involved in the Greece operation during our stay in Athens in March 2017 and who have contributed significantly to our work. In particular, we would like to thank our supervisor “*in the field*”, Svein J. Håpnes, for creating this thesis project together with our supervisors at Lund University and for entrusting us with its accomplishment. Beyond that, our sincere thanks go to all the colleagues who participated in our interviews and the subsequent questionnaire. The insights into the procedures – and challenges – at an international humanitarian organization like UNHCR that we have gained through you are invaluable for both our master thesis project and for us personally.

Furthermore, we would like to thank our supervisor “*at headquarters*”, Joakim Kembro, and our examiner, Marianne Jahre, for creating this *challenging* master thesis project with UNHCR which has been a unique learning experience at the end of our education in Lund.

Finally, we thank all researchers at the Department of Industrial Management and Logistics at LTH who have shared their experiences in academic research and thus supported us in the creation of this report.

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Johan Christofferson & Erik Müller

Abstract

The number of humanitarian crises as well as their complexity have been increasing over the past 50 years. Among other reasons, this is attributable to the growing number of actors involved in relief operations who add significantly to the complexity of coordinating internal and external factors in order to alleviate the suffering of people all around the world. Hence, this research seeks to investigate those internal and external factors that influence the work of humanitarian workers in a negative way. They are referred to as *challenges* throughout this study and a comprehensive process is presented that has been pursued in order to identify them, assess their criticality in different contexts and to indicate potential solution strategies. Furthermore, an essential aspect of this research is the distinction of *core challenges* (CC) and *root cause challenges* (RCC) which are analyzed with regard to their mutual interrelations in emergency response (ER) and prolonged relief contexts, the latter being referred to as *ongoing operations* (OO) in this report.

A comprehensive review of extant humanitarian logistics, supply chain and operations management literature has contributed to the creation of a categorization framework which has been used to group challenges into seven internal and five external categories. The findings from the initial literature analysis have been complemented by an in-depth single case study with the United Nations High Commissioner for Refugees (UNHCR) in Greece during March 2017. Interviews with seventeen practitioners involved in all kinds of relief activities in the organization have been conducted. Furthermore, extensive observations of routine procedures in the field and in the Athens branch office environment have been made. Finally, an online questionnaire has been created and sent to UNHCR in Greece in order to collect practitioner assessments regarding the criticality of internal and external challenge categories presented in the initial framework and supplemented by a sixth external category identified during the research trip to Greece.

Analyses of the collected information have shown a considerable degree of challenges interrelations. The distinction between CCs and RCCs appears particularly necessary since various RCCs have been identified which not only converge into multiple CCs across different challenge categories but also interfere with other RCCs. Hence, the priority to counteract those challenges is apparent. Apart from that, the analysis of the responses to the questionnaire has revealed that *external* challenge categories are perceived more challenging in both ER and OO contexts than internal categories. Especially *Political Governance*-related challenges are considered to be both most common and with the strongest (negative) impact on humanitarian operations while the majority of practitioners only see marginal chances to overcome them. Beyond that, even those *internal* challenge categories with numerous points of contact to external influences, such as *Funding and Donations*, have been assessed as more critical than other internal categories. Since political motives also play a decisive role in funding decisions, the overall negative impact of political activities on humanitarian operations has become apparent throughout this study.

Keywords: emergency response, ongoing operation, humanitarian organization, challenge, categorization, criticality, assessment, UNHCR

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List of Abbreviations

Abbreviation	Explanation
ACAT	Accept, Control, Avoid, Transfer
BO	Branch Office
CC	Core Challenge
CPI	Corruption Perception Index
CSR	Corporate Social Responsibility
CV	Challenge Value
ECHO	European Civil Protection and Humanitarian Aid Operations
ER	Emergency Response
ERP	Enterprise Resource Planning
FO	Field Office
HC	Humanitarian Coordinator
HCT	Humanitarian Country Team
HL	Humanitarian Logistics
HO	Humanitarian Organization
HOP	Humanitarian Operation
HQ	Headquarters
IASC	Inter-Agency Standing Committee
IDP	Internally Displaced People
LU	Lund University
MSF	Médecins Sans Frontières
NFI	Non-Food Item
NGO	Non-Governmental Organization
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OO	Ongoing Operation
OPS	Operations
PO	Purchase Order
POC	Person of Concern
RCC	Root Cause Challenge
RQ	Research Question
SC	Supply Chain
SCM	Supply Chain Management
SCRM	Supply Chain Risk Management
SRA	Security Risk Assessment
SRM	Security Risk Management
TISM	Total Interpretive Structural Modeling
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UNLP	United Nations Laissez-Passer
WFP	World Food Programme

1. Introduction

1.1 Background: The Growing Number and Complexity of Humanitarian Crises

Consulting the international disaster database EM-DAT it becomes apparent that the number of catastrophes with diverse impact on the affected populations has been increasing significantly over the past 50 years, culminating in peaks around the turn of the millennium (Figure 1). Furthermore, the trend of both *natural* and *man-made* (i.e. *technological*) disasters has been progressing almost uniformly thus indicating an interdependence of both disaster categories. This interdependence is further substantiated by the increasing occurrence of so-called *complex disasters* when a region is haunted by more than one type of catastrophe at the same time (Kovács and Spens, 2009). A prominent example for such complex disasters is the 2011 *Fukushima Daiichi catastrophe* when a tsunami caused critical damages to a nuclear power plant leading to the radioactive contamination of a whole region in eastern Japan. More recently, a severe drought in the sub-Saharan *Sahel* region, concurring with sustained armed conflicts in the area (especially South Sudan), is becoming the world’s fastest growing refugee crises, according to the United Nations High Commissioner for Refugees (UNHCR) (Baloch, 2017).

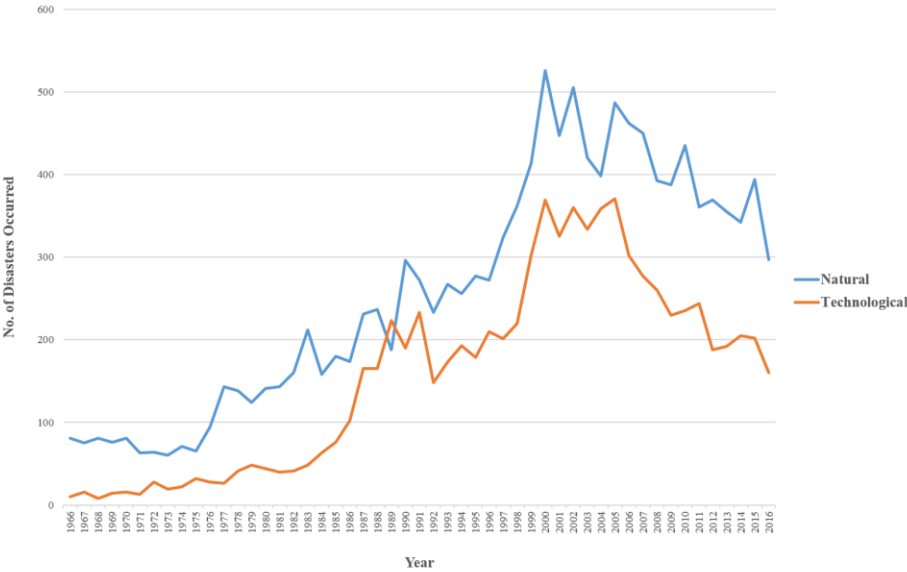


Figure 1: Occurrence of Natural and Technological Disasters over the Past 50 Years (EM-DAT, 2017)

In consequence of the growing number and complexity of disasters the remits and challenges in humanitarian operations are diverse and usually vary largely between crisis situations. While most crises such as unforeseen natural disasters and the associated devastation and destruction of many people’s livelihoods require immediate response of Humanitarian Organizations (HO), some of those emergencies call for prolonged engagement in the area in order to support the restoration of self-sufficiency of the affected populations. These two different types of humanitarian missions are referred to as Emergency Response (ER) and Ongoing Operations (OO) (Jahre et al., 2016). As indicated above, the associated requirements regarding planning and execution are not consistent. In ER operations, such as the 2010 Haiti earthquake, speed is essential. This means to ensure prompt availability of large capacities on fast modes of transportation. Therefore, cost considerations are usually of subordinate significance. In contrast to this, during OOs such as the 20-year-old refugee camp *Dadaab* in Kenya, HOs seek

to satisfy all demand while minimizing costs in order to ensure their longest possible operational capability in light of limited project funding (Jahre et al., 2016).

The requirements for the organizations' logistics networks to satisfy the various needs (i.e. number and type of relief items) in different geographical areas characterized by unreliable local infrastructure and in light of omnipresent resource scarcity are huge (van der Laan et al., 2016; Yadav and Barve, 2016). In order to facilitate planning and increase responsiveness of humanitarian aid, Jahre et al. (2016) have recently analyzed the optimization potentials of dedicated supply chains (SC) for OO and ER operations in UNHCR. They present a warehouse location model for joint prepositioning that also incorporates *political* and *security* factors in decision making.

The significant influence of political factors on humanitarian operations as emphasized by Jahre et al. (2016) has also been identified in the course of this study. The political ambitions of the European Commission in its double role as European umbrella organization and main donor to the relief efforts in Greece are perceived equally challenging by humanitarian practitioners as the continuous attempts of the host government to maintain control over all decisions and activities taken on their territory. Furthermore, the coordination of the different actors involved in humanitarian aid appears particularly challenging since most parties other than the UN follow their own, not seldom politically motivated, agenda. The main donor to the operation in Greece (around 90% of all funding from European Commission) seeks to realize their plans for the affected region (here Greece, not Syria) while the host government strives to demonstrate its independence by refusing the issuance of official coordination responsibilities to HOs. At the same time, anti-authoritarian groups inside the country provide help to *Persons of Concern* (POC) (e.g. by providing shelter in urban squats) following not only a humanitarian but also a political motivation thus refusing any collaboration with official sites.

“By defending the rights of refugees, UNHCR always ends up in political opposition to different parties. [...] Whatever position we take and reaction we show – or even if we don't react at all – we are exposed to [political] attacks from the outside. The only thing that we can do is to always and consequently stick to our mandate and to never seek to make the mandate popular towards any side.”

Assistant Representative Operations, UNHCR Greece, 2017

This thesis project emerges at a time when the civil war in Syria is at the height of cruelty and complexity with many parties involved. UNHCR, as the United Nations' refugee agency, currently faces a tense situation in the neighboring countries of Syria where many displaced people search for shelter. The situation in Greece today, where the authors were granted access to the UNHCR operation during March 2017, is perceived more stable compared to 2015 when more than 860 000 refugees were registered (UNHCR, 2016). However, in view of the strained relationship between the European Union and the Turkish government, which agreed to hold back refugees on their way to Europe, another escalation of the crisis with increasing migration numbers into Greece is not an unlikely scenario.

Finally, apart from emergency response in Greece, constituting the focus of this project, the identification and assessment of challenges to ongoing operations is of high topicality. As long as the civil war and the resulting inhumane living conditions in Syria as well as parts of Iraq

and Afghanistan are not ended, threatened people will search for shelter in the neighboring regions of the Middle East and Southern Europe. The risk of the current ER operation becoming an OO is significant and to some extent this is already starting to be the case when considering, for example, the Jordan refugee camp *Zaatari* that has become one of the country's largest cities already.

1.2 Purpose

Although this study stands in line with a number of previous collaborations between Lund University and UNHCR, it is somewhat different compared to the thesis projects by Bendz and Granlund (2012) and Dahl and Lindén (2016). While both previous studies were related to the implementation of the warehouse localization model by Jahre et al. (2016), this project seeks to identify all kinds of potential challenges to OO and ER operations. Although the focus initially is on UNHCR, the purpose of the study is to generate knowledge with applicability for logistics operations of any governmental or non-governmental HO as well as the research community.

Only few publications have discussed challenges in Ongoing Operations (L'Hermitte et al., 2016) or differentiated to what extent challenges differ between ER and OO (Yadav and Barve, 2016). Furthermore, a range of authors discuss the importance of regional and cultural peculiarities (Abidi et al., 2015; Yadav and Barve, 2016) in humanitarian operations as well as the time elapsed since the beginning of an operation (early/mid/late) and the number of actors involved (van der Laan et al., 2016). However, to the best of our knowledge no framework exists that indicates the varying interrelations of challenges in the different aforementioned contexts. Therefore, the main purpose of this study is to contribute to the closure of this gap by providing a framework for *i) categorizing challenges* and *ii) explaining the interrelations of different root cause challenges (RCC) which are converging in the core challenges (CC)* as perceived by humanitarian practitioners in ER and OO contexts. Especially the concept of *root cause challenges*, as introduced in this study and inspired by the work of Yadav and Barve (2016), appears to be of particular importance to understand the diversity of influencing factors that need to be addressed in order to develop sustainable solutions for *core challenges*. This goes in line with Yadav and Barve (2016) who remark that *"by developing direct and indirect relationships between the challenges, the case may be defined far more correctly than by considering each aspect in isolation"* (p.327). It is therefore the main contribution of this study to scientific research in the field.

Finally, the study seeks to develop and propose a *structured approach* to challenges management in humanitarian operations. For this purpose, the authors employ methods of *risk management* and specifically *risk assessment* originating from the area of *supply chain risk management* (SCRM). An assessment of various challenge categories has been made in collaboration with UNHCR personnel in order to identify those internal and external factors that are perceived particularly critical in either ER or OO. Together with the reflections collected from literature and practitioners on how to overcome or at least mitigate the negative impact of some challenges, this assessment provides a focal point for both, the humanitarian and academic society, to bundle their experiences and competencies in order to develop and test strategies. In this way, the study seeks to further bridge the two academic fields of Humanitarian Logistics (HL) and SCRM, an approach that has recently been pursued by L'Hermitte et al. (2016) and Jahre (2017).

1.3 Research Questions

RQ1: What are challenges in humanitarian operations and how do they vary between different contexts?

RQ2: How are the challenges, arising from different areas within humanitarian operations, interrelated with each other?

RQ3: To what extent can different kinds of challenges in ER compared to OO...

Q3.1: ...occur during the course of a humanitarian operation?

Q3.2: ...have a critical impact on the successful implementation of the operation?

Q3.3: ...be overcome or mitigated, and those who can, how can they be influenced in order to increase effectiveness and efficiency of humanitarian operations?

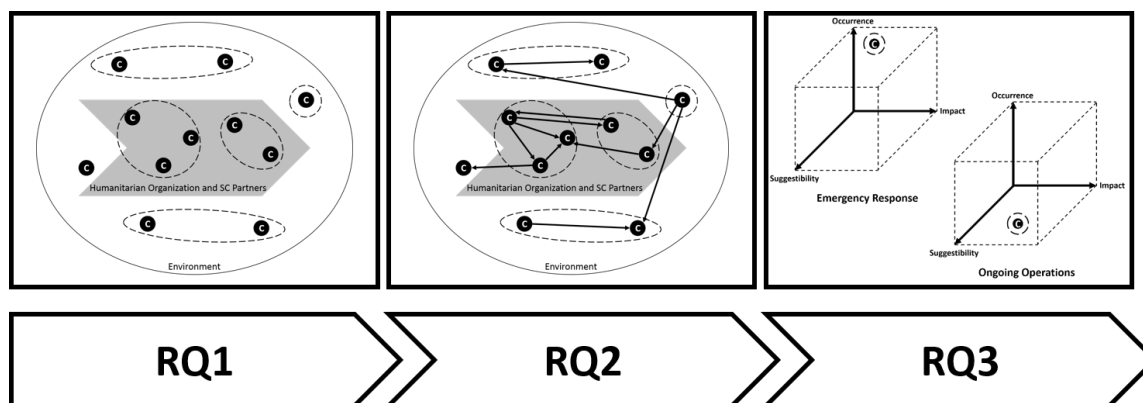


Figure 2: Illustration of Research Questions (Christofferson and Müller, 2017)

1.4 Delimitations

The authors' insight into the field of humanitarian operations is largely limited to UN organizations, in particular UNHCR, that have been the research partner for the underlying in-depth single-case study in this project. By its mandate UNHCR is a provider and cluster leader for *Emergency Shelter* and *Camp Design & Coordination*. Beyond that they are a supra-national organization usually falling back on/to the structures, monetary resources and support of the United Nations. However, there are many other, smaller actors (e.g. NGOs) involved in humanitarian aid operations with no such powerful background that almost certainly face different challenges or the same challenges but to a different extent. For example, *Funding and Donations* related challenges will be found in both, UNHCR and smaller NGOs. However, while UNHCR receives a lot of money for the Greece operation, coming with significant donor influence, small NGOs might struggle to collect any funding at all thus being existentially dependent on donations.

The authors have tried to include the NGO perspective to the study by conducting the same interview with a member (Field Mental Health Activity Manager) of Médecins Sans Frontières (MSF). However, the insight into the challenges experienced by NGOs is rather limited compared to the amount of interviews and observations collected at UNHCR.

Finally, among the personnel involved in the UNHCR operation in Greece there is a high share of local (Greek) staff, most of whom have only limited or no experience in other humanitarian operations. Therefore, the intended assessment of different contexts has not been realized to the

full extent during all interviews with local staff members compared to senior international staff that has been involved in other regions and crises before, thus being able to make a more differentiated assessment of challenges in different contexts. However, the authors would like to express their gratitude to all participants in the interviews who provided valuable insights into practices and challenges related to individual tasks in UNHCR that have been included in this study.

1.5 Structure of the Thesis

The report is divided into six main chapters, the first of which is hereby closed. Throughout the subsequent chapters an overview of the researched scientific literature in the fields of HL and SCRM is given at first. Essential terms and concepts relating to the investigated field of humanitarian operations and challenges experienced in this context are defined and the development of the central *Challenges Framework* (Figure 8) through the combination of various HL and SCRM tools and concepts is explained. The framework is then applied to categorize the challenges discussed in reviewed literature and the creation of the *Challenges Assessment Framework* (Figure 13) based on SCRM theory is described. In the *Methodology* chapter the selection of an in-depth field study (with UNHCR in Greece) as the appropriate research strategy for this project is motivated and the relevant research design elements are presented. In this context, the UNHCR operation in Greece, as the study's unit of analysis, is described in detail and the data collection methods applied during the case study are explained. Chapter 4 provides an overview of all findings and insights gathered from the case study in Greece. Detailed lists of challenges discussed during the interviews are presented, while some selected examples are elaborated and supplemented by personal observations. Apart from that, the raw, unprocessed results from a questionnaire sent to UNHCR staff in Greece are displayed. The *Analysis* chapter of the report eventually puts together the findings from the literature review and the empirical case study. For this purpose a *Combined Challenges Framework* (Figure 24) is compiled and its potentials and limitations are discussed in the first part. The second part includes the analysis of the questionnaire results at the end of which two lists are submitted ranking the challenges (categories) according to their criticality in ER and OO respectively. Beyond that, a preliminary approach for managing challenges in humanitarian operations is suggested based on models and tools employed by different risk managing policies well-established in the UN/UNHCR system. Finally, the *Conclusion* chapter contrasts all major findings and limitations of the study and identifies areas for further research.

2. Theoretical Framework

In this chapter the process and results of the underlying literature review to this study are elaborated. With regard to the research questions indicated in Chapter 1 and further discussed in Chapter 3, two main areas have been identified to be of particular relevance to this study. In the first section challenges in humanitarian operations and different approaches to classify them are discussed. The focus of the second section then is laid on risk assessment strategies coming from the field of supply chain risk management (SCRM). This interdisciplinary discussion seeks to demonstrate the potential of applying SCRM tools and strategies in the evaluation of challenges in humanitarian logistics. Each section closes with a framework inspired and adapted from the previously discussed literature both of which are later used and further developed in the analysis of the empirical study.

The literature reviewed for this study has been selected following a structured approach. For this purpose, three databases – Business Source Complete (via EBSCOhost), Scopus and Lund University Libraries (LUBSearch) – have been searched for all combinations of the following terms:

[humanitarian]
OR [emergency response] AND [logistics] AND [challenge]
OR [disaster relief] OR [supply chain]

Furthermore, all publications had to be peer-reviewed and written in English language. After duplications had been removed (leaving 104) the abstracts of each publication have been reviewed in order to sort out irrelevant papers (leaving 46). Beyond that, a range of articles which have been obtained searching for [supply chain risk management] in the aforementioned databases, have been selected according to their coverage of risk assessment tools.

2.1 Challenges in Humanitarian Operations

The first framework to be discussed in this chapter relates to the core of this thesis project – the identification and classification of challenges in humanitarian operations. It is directly connected to RQ1 and RQ2 and will be developed over the following section. Therefore, in order to generate a common understanding of central terms and circumstances as used in the further course of this study the relevant definitions of *Emergency Response*, *Ongoing Operations*, *Disasters* and *Challenges* in general will be provided first. Thereafter, the main studies reviewed for this project will be discussed also highlighting sources of inspiration and identified gaps. In the main part of this section, the categorization approach for challenges is elaborated by presenting twelve factors – internal to the focal HO and its (SC) implementing partners and external to them – that are discussed in recent *Humanitarian Logistics* (HL) scientific literature. Finally, a comprehensive overview of all reviewed publications fulfilling the requirements for scientific research is given in form of a table (Table 3) and the *Challenges Framework* based on the literature review (Figure 9) is presented.

2.1.1 Definitions

Challenge

According to the combined definitions of Cambridge, Collins and Oxford dictionaries a *challenge* is defined as a *demanding or stimulating task or situation that needs great mental or*

physical effort and determination in order to be done successfully and therefore tests someone's abilities (Cambridge Dictionary, 2017; Collins Dictionary, 2017; Oxford Dictionaries, 2017).

However, in order to simplify the concept of challenges in humanitarian operations, the authors define it as *any problem or disruption that humanitarian workers face or experience during an operation*. The reason for this simplification is twofold. First, it creates the same unequivocal understanding with every involved interview partner. Second, the rather vague descriptions of “tough situations” and “difficulties” in planning and execution of job-related tasks, where the word “difficult/difficulty” is used synonymously with “challenging/challenge”, are excluded. The latter is of particular importance, since the aim of this study is not to identify and describe “difficult jobs” but rather problems and disruptions impeding the smooth flow of a humanitarian operation.

Disaster

Each humanitarian operation, ER as well as OO, is preceded by a disaster. According to the UN Internationally Agreed Glossary of Basic Terms Related to Disaster Management, a disaster is *“a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources”* (United Nations, 1992).

Disasters can be further classified according to:

- Their *source/origin* into natural and man-made (United Nations, 1992; van Wassenhove, 2006; Baldini et al., 2012; Akhtar et al., 2012). When different types of disasters (e.g. tsunami and nuclear catastrophe) occur at the same time or in consequence of each other, this is usually referred to as “complex disasters” (Kovács and Spens, 2009).
- Their *warning time / speed of onset* into sudden and slow/gradual (van Wassenhove, 2006; Kovács and Spens, 2009; Apte, 2009, Holguín-Veras et al., 2012)
- Their *location/dispersion* into dispersed and localized (Apte, 2009).

Figure 3 shows the classic disaster matrix developed by van Wassenhove in 2006. Whereas Apte (2009) replaces the disaster origin by its location/dispersion and includes an indication of the difficulty level (Figure 4).

	Natural	Man-made
Sudden-onset	Earthquake Hurricane Tornadoes	Terrorist Attack Coup d'Etat Chemical Leak
Slow-onset	Famine Drought Poverty	Political Crisis Refugee Crisis

Figure 3: Explaining Disasters (van Wassenhove, 2006)

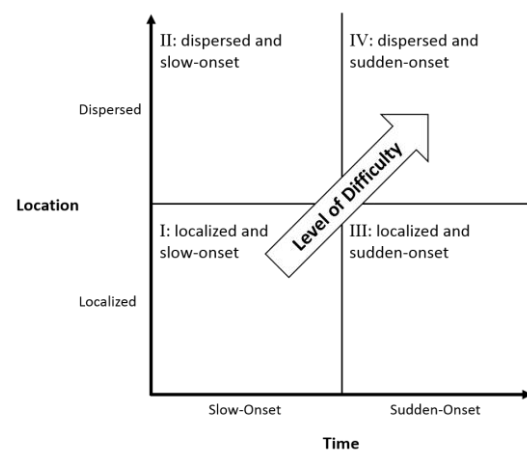


Figure 4: Classification of Disasters (Apte, 2009)

Beyond that, Holguín-Veras et al. (2012) suggest to further classify disasters according to their *magnitude of impact* (social disruption, physical harm), the *scope of impact* (size and nature of impact e.g. debris after earthquake or water after flood), the *temporal duration of the impact*, the *frequency and regularity* of the disaster and the *persistence of the threat* emanating from the disaster.

Ideally the *Challenges Framework* (Figure 8) at the end of this section should cover all types of disasters from both natural and man-made origin as well as their related challenges. However, due to the mandate of UNHCR and the single-case character of this study, its findings lean towards man-made disasters although many challenges have been reported in natural disaster contexts too.

UNHCR focus on supporting refugees and asylum-seekers, returnees, stateless persons and internally displaced people (IDP) (UNHCR, 2013). They are usually referred to as UNHCR’s *Persons of Concern* (POC) and have in common that all of them are or have been fleeing from man-made disasters – in particularly civil/conflict hazards (Dahl and Lindén, 2016). For further definitions of the individual groups the authors refer to the study by Dahl and Lindén (2016) where the following diagram (Figure 5), illustrating the contexts discussed in this paragraph, has been obtained.

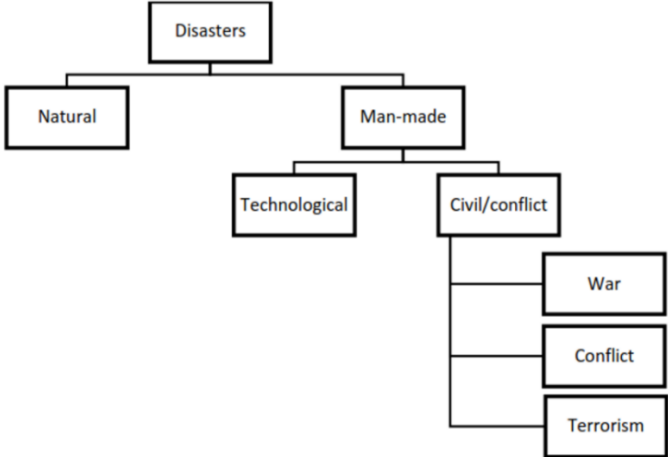


Figure 5: Classification of Disasters Based on Their Origin (Dahl and Lindén, 2016)

Emergency Response

Emergency Response/Relief describes short-term measures taken immediately after a disaster has struck, such as transportation of supplies and equipment for search and rescue or to make provisional repairs of damaged infrastructure (Holguín-Vera et al., 2012). Furthermore, it comprises short-term recovery activities related to the management of donations and voluntary work force, the assessment of emergency needs and damages as well as the provisioning of temporary housing and clearing debris (ibid.).

Due to the aforementioned characteristics, ER is closely linked to sudden-onset catastrophes (Jahre et al., 2016). In this context speed is an important criterion for the selection of transport modes (usually air or short-distance road transportation) in order to reach beneficiaries as fast as possible (ibid.; van der Laan et al., 2016). Demand uncertainty is argued one of the top

challenges in humanitarian logistics (L'Hermitte et al., 2016; Yadav and Barve, 2016). However, according to Jahre et al. (2016) the unclear demand situation is even more challenging in ER. Therefore, usually standard supplies are *pushed* down the SC based on the anticipated needs of beneficiaries (L'Hermitte et al., 2016).

Ongoing Operations

In this study all measures that go beyond immediate/emergency response are referred to as OO. Following definitions by Holguín-Veras et al. (2012), Jahre et al. (2016) and van der Laan et al. (2016) these can be described as *long-term* recovery activities that may continue for several years after a disaster has occurred. The main purpose of OOs is to support affected populations to return to normality and to even improve their quality of life by, for example, restoring local infrastructure or providing medical and food supplies for routine disease and malnutrition prevention (Holguín-Veras et al., 2012). However, the aspect of development aid is excluded from this study.

Other than in ER, the demand situation is argued to be less uncertain in OOs due to more continuous demand patterns. Running large refugee camps like *Dadaab* in Kenya for many years provides HOs with empirical data that even allows demand forecasting to a certain degree (Jahre et al., 2016; van der Laan et al.; 2016). L'Hermitte et al. (2016) compare this practice to *pulling* appropriate goods through the SC. Therefore, even cost-efficiency objectives can be pursued in OOs as long as all demands are satisfied and responsiveness to the surrounding conditions is maintained (Jahre et al., 2016).

2.1.2 Main Literature

This study is based on the successful collaboration between Lund University and UNHCR, which has already produced two master theses and several scientific research publications in the past. The most recent publication (Jahre et al., 2016) focuses on improving demand planning and responsiveness in humanitarian aid by evaluating the optimization potential of merging dedicated ER and OO SCs in UNHCR as well as their affiliated supply networks and facilities. For this purpose, Jahre et al. (2016) present a warehouse location model for joint prepositioning of relief supplies, to be used for both OO and ER operations, that considers *demand characteristics, logistics* but also *political and security situation* related influencing factors in the mathematical optimization. To some extent, their research builds on the master thesis projects by Bendz and Granlund in 2012 and Dahl and Lindén in 2016. While Bendz and Granlund (2012) have identified quantitative and qualitative factors to be considered for optimal localization of warehouses in humanitarian logistics networks, Dahl and Lindén (2016) have investigated challenges in scenario creation and data collection connected to the implementation of such a localization model. Both, the influencing factors identified by Bendz and Granlund (2012) and developed by Jahre et al. (2016) as well as the challenges collected by Dahl and Lindén (2016) have served as inspiration to the categorization of challenges in this study.

To the best of our knowledge, there is only a very limited number of scientific publications that discuss challenges in humanitarian operations exclusively. Many authors have selected areas and tasks that are perceived as particularly challenging and discuss challenges observed in these contexts. Representatively for all other topics, the *coordination* of tasks and *collaboration*

between humanitarian actors in the crisis area, which was most often chosen as a core theme within the reviewed literature, is mentioned here. Akhtar et al. (2012), Balcik et al. (2010), Bealt et al. (2016), Maon et al. (2009), Noori and Weber (2016), Tatham and Spens (2016) and Tatham et al. (2017) have dedicated entire studies to coordination and collaboration challenges while many other authors discuss them in another context, such as Majewski et al. (2010) with a view to the future of humanitarian logistics.

Among the most cited publications (according to Google Scholar 275, as by 6 May 2017) discussing challenges from a *broader* perspective is the article by Kovács and Spens from 2009. They provide an overview of 23 challenges in humanitarian logistics with a strong focus on African operations. For this purpose, they have gathered representatives of the largest organizations involved in humanitarian aid in Ghana for a two-day workshop: supranational agencies (e.g. UN), non-governmental organizations (NGOs), international NGOs, national governmental agencies and national armed forces (Kovács and Spens, 2009). This approach enabled them to gain valuable insights into the diverse challenges as perceived by different actors with varying national/international influence, monetary support, mandate, local presence and experience in humanitarian aid. The authors furthermore provide a basic approach for categorizing challenges according to the *type of disaster* (see above), the *disaster relief phase* (preparedness or post-event including immediate response and reconstruction) and the *type of HO involved* (see above). Based on this they finally develop a “*conceptual model to identify challenges of humanitarian logisticians*” (Kovács and Spens, 2009, p.520). Unfortunately, the use of the model appears limited, since it is primarily geared to *identify* challenges without any explanation about the interrelations among different underlying challenges (Yadav and Barve, 2016) that need to be investigated in order to develop sustainable solutions or mitigation strategies. Moreover, the identified “challenges in humanitarian logistics”, in fact, appear to originate from different, not exclusively logistics-related, areas connected to humanitarian operations. The “brain drain” challenge (Kovács and Spens, 2009), standing for the loss of experienced workforce in HOs due to the lack of attractiveness of working conditions (van der Laan et al., 2016), almost certainly also affects other units within HOs apart from logistics/supply departments. It therefore appears too one-sided or even misleading to discuss those challenges under the umbrella of *humanitarian logistics* rather than *humanitarian operations* as a whole. However, the study by Kovács and Spens (2009) has also contributed significantly to the development of the framework presented in this thesis project. Although grouped/categorized differently, a lot of challenges discussed in their paper have been considered and also their conceptual model has inspired the differentiation of *internal and external challenge categories* as illustrated in Figure 8 at the end of this section. Finally, their remark, based on the study by Norrman and Jansson (2004), to not only consider types of disasters but also their probability of occurrence and effects has confirmed initial considerations of the authors to investigate potentials for bridging the two academic fields of humanitarian logistics (HL) and supply chain risk management (SCRM) in order to assess the criticality of identified challenges.

Another publication that discusses challenges in humanitarian logistics on a broader level has been delivered by Yadav and Barve (2016). They identify 15 post-disaster challenges which are further differentiated between *immediate relief* (comparable to ER) and *long-term activities* (comparable to OO as defined in this study). *Total Interpretive Structural Modeling* (TISM) is

applied in order to develop a hierarchical model for explaining the interrelations among the 15 selected challenges by arranging them according to their mutual influential behavior with each other (Yadav and Barve, 2016). For this purpose, the authors have initially conducted a literature review and sent out a questionnaire survey to identify challenges. Thereafter a team of twelve disaster management experts from NGOs and commercial SCM has assessed contextual relationships among the identified challenges. Based on this, a ranking has been developed which finally allowed them to draw the hierarchy model displayed in Figure 6 where challenges at a lower level affect other challenges positioned above (ibid.).

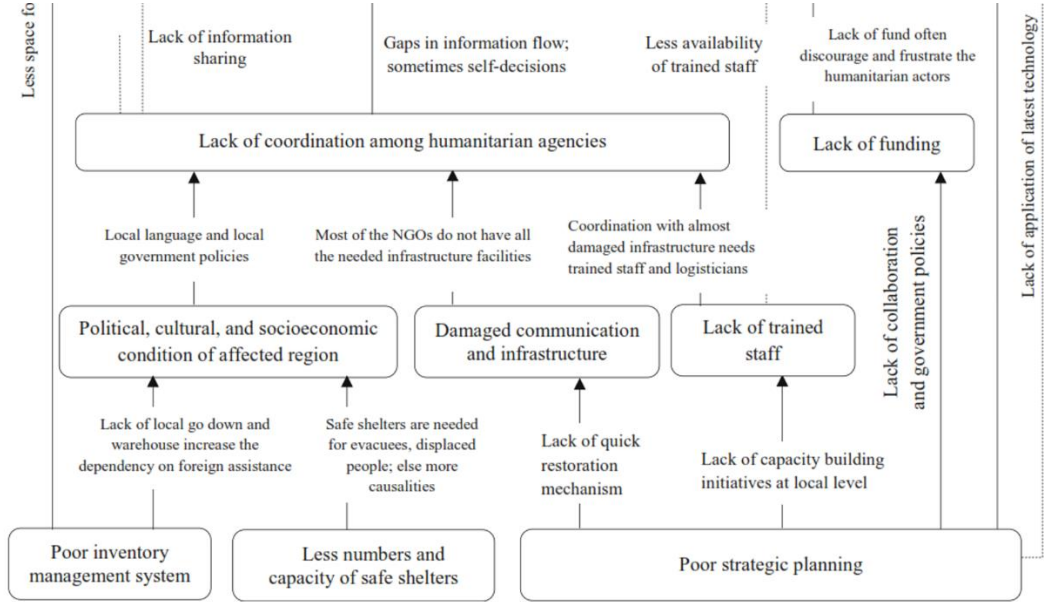


Figure 6: Hierarchical TISM Model of Challenges (picture section) (Yadav and Barve, 2016)

By the work of Yadav and Barve (2016) the authors of this thesis project study have been confirmed in their initial assumption that it appears necessary to study the effects and interrelations between individual challenges in order to take *appropriate* measures to overcome those challenges in the next step. Therefore, the gist of Yadav and Barve’s (2016) hierarchical TISM model has been incorporated into the framework (Figure 9) where a distinction is made between challenges and root cause challenges.

Throughout the reviewed literature only very limited approaches towards a classification of *challenges* have been identified. The categorization by Kovács and Spens (2009) according to *type of disaster, disaster relief phase* and *type of HO* involved has been discussed already. Yadav and Barve (2016) only differentiate between “immediate relief” (ER) and “long-term activities” (OO). Another attempt is made by L’Hermitte et al. (2016) in one of the few studies focusing on what has been defined OO earlier. However, they refer to it as *protracted operations* instead. Furthermore, the methodological approach of their research shows a remarkable, yet unintentional, similarity with the design of this study. L’Hermitte et al. (2016) begin with a literature review in order to assess the coverage of protracted operations in scientific publications, investigate the meaning and importance of *agility* in humanitarian logistics and why *agility* is needed. In the next stage, case study research is undertaken. For this purpose they have visited Rome (Italy) where they have conducted the first phase of their case study with the UN World Food Programme (WFP). This first phase involves the collection of qualitative interview data through five semi-structured interviews conducted in WFP’s

headquarters in Rome. The subjects of those interviews have been, among others, “*disruptions/constraints encountered in the field*” (p.184) (comparable to the challenges investigated in this thesis project) and “*methods used to overcome them*” (p.184f.). Thereafter, the second phase involves the gathering and analysis of quantitative data through an online survey with WFP’s field logisticians involved in protracted operations. Using five-point Likert scales and multiple choice questions the “*impact [of disruptions/constraints] on logistics operations*” (p.185) and “*mitigation practices*” (ibid.) have been assessed. Further a distinction has been made between *contextual* and *SC-related* disruptions/constraints thus leading towards a reasonable categorization of challenges as required in this thesis project.

L’Hermitte et al. (2016) remark that “*the volume of research in humanitarian supply chain risk management is limited [...] and clear categories of risks and uncertainties encountered along the humanitarian supply chains remain to be empirically established and tested*” (p.180). The aforementioned concept of contextual and SC-related disruptions can therefore be traced back to commercial SCRM where *internal*, *network-related* and *external* risks are differentiated (Christopher and Peck, 2004; Jüttner et al., 2003; Norrman and Jansson, 2004). This is also consistent with van Wassenhove (2006) who suggests to address this residual gap in humanitarian logistics research by employing existing frameworks of commercial SCRM to conduct risk analyses, vulnerability assessments and eventually improve the robustness of humanitarian SCs.

In 2003 Jüttner et al. introduced a model to categorize *SC risk sources*. The model consists of three levels that have been slightly modified and extended over the years (e.g. Christopher and Peck, 2004; L’Hermitte et al., 2016). However, the core principle of distinguishing risks internal to the focal organization (*Organizational*), risks external to the focal organization but internal to the supply chain network (*Network-related*) and risks external to the network (*Environmental*) has remained untouched. The three categories including the most important extensions by other authors are discussed in more detail below before Figure 7 summarizes the concept(s) in order to facilitate the reader’s classification of the various terms and definitions into the overall context.

Internal

Jüttner et al. (2003) refer to this as *organizational* risk sources which lie within the boundaries of the involved SC parties and comprise labor (e.g. strikes) and production (e.g. assembly line failure) uncertainties as well as those uncertainties related to information technology.

Christopher and Peck (2004) further distinguish the risks internal to the focal organization between *process risks* and *control risks*. Since *processes* in this regard are activities executed by the organization itself, they highly depend on the accurate performance of internally owned or managed assets and a hassle-free transportation and communication infrastructure. Potential failures in this regard thus constitute *process risk*. *Control risks* in contrast result from the application or misapplication of rules and procedures intended to steer the processes in a way that they produce the desired output. Safety stock policies and the associated diametrical risks of supply wastage due to obsolescence caused by over-stocking and supply shortage caused by under-stocking fall into this category.

Network-Related

According to Jüttner et al. (2003) network-related risks emerge from suboptimal interaction between organizations within the same SC and usually manifest in *chaos*, as experienced through the *Bullwhip Effect*, and *inertia*, mainly regarding changing environmental conditions or market signals.

Christopher and Peck (2004) discuss two types of risks arising from outside the focal organization but within its interrelation with SC partners. While *demand risks* are related to disruptions in the downstream flow of materials and information from the focal organization towards the end-customer market, *supply risks* represent the upstream equivalent.

L'Hermitte et al. (2016) combine two types of disruptions/constraints under what they refer to as *SC-related* risks and uncertainties – those internal to the focal organization and those within the supply network. *Eight SC-related disruptions/constraints* have been examined throughout their study with WFP: i) internal processes and standard procedures, ii) functional silos, iii) funding and in-kind donations, iv) unpredictable demand for relief supplies, v) suppliers of goods, vi) suppliers of services, vii) implementing partners and viii) commercial partners.

Similar to L'Hermitte et al. (2016), van der Laan et al. (2016) put the internal/external concept in a humanitarian logistics context. Their so-called *endogenous* factors and the way they affect humanitarian operations are related to SC-internal management processes and predominantly concern aspects such as information systems, personnel or coordination activities.

External

External risk sources emanate from the environment that SCs exist in and interact with. Therefore, Jüttner et al. (2003) refer to them as environmental risk sources. *Accidents* like fire in a production facility or *socio-political actions* such as terrorist attacks as well as *natural phenomena* like earthquakes or extreme weather conditions fall into this category.

According to Christopher and Peck (2004) environmental risks, coming from outside the SC, are likely to affect all parties in the network – not only the focal organization but also upstream and downstream partners as well as the marketplace. In doing so, environmental risks may affect products and materials directly (e.g. spoilage by contamination) or impair a particular node the SC uses (e.g. sunken vessel due to accident or attack). Due to *carry-over effects*, the focal organization might even feel the impact of disruptions caused by environmental risks although its own SC might not be affected directly, but indirectly through linkages to other industry networks (Christopher and Peck, 2004).

L'Hermitte et al. (2016) who refer to the same concept as *contextual* or *macro-environmental* risks and uncertainties, describe external risks as “*catastrophic and/or isolated events disrupting supply chains (such as the 9/11 terrorist attacks or the 2011 earthquake/tsunami in Japan)*” (ibid., p.182) rather than ongoing external influences. Furthermore, contextual risks and uncertainties are perceived as “*uncontrollable*” (ibid., p.187) and appear to occur less frequently in commercial environments compared to humanitarian operations (ibid.). Finally, the authors propose *five contextual disruptions/constraints* with potentially negative impact on humanitarian operations – i) physical elements in the disaster environment, ii) socio-economic setting, iii) governmental decisions, iv) security issues and v) infrastructural problems.

Van der Laan et al. (2016) refer to the aforementioned contextual disruptions/constraints as *situational exogenous factors* since they are related to the immediate environment of the disaster-affected area. The authors further distinguish *non-situational exogenous* factors which describe characteristics of humanitarian operations that apply independent of site or situation, such as demand uncertainty, involvement of numerous stakeholders, time pressure or general complexity of circumstances (van der Laan et al., 2016).

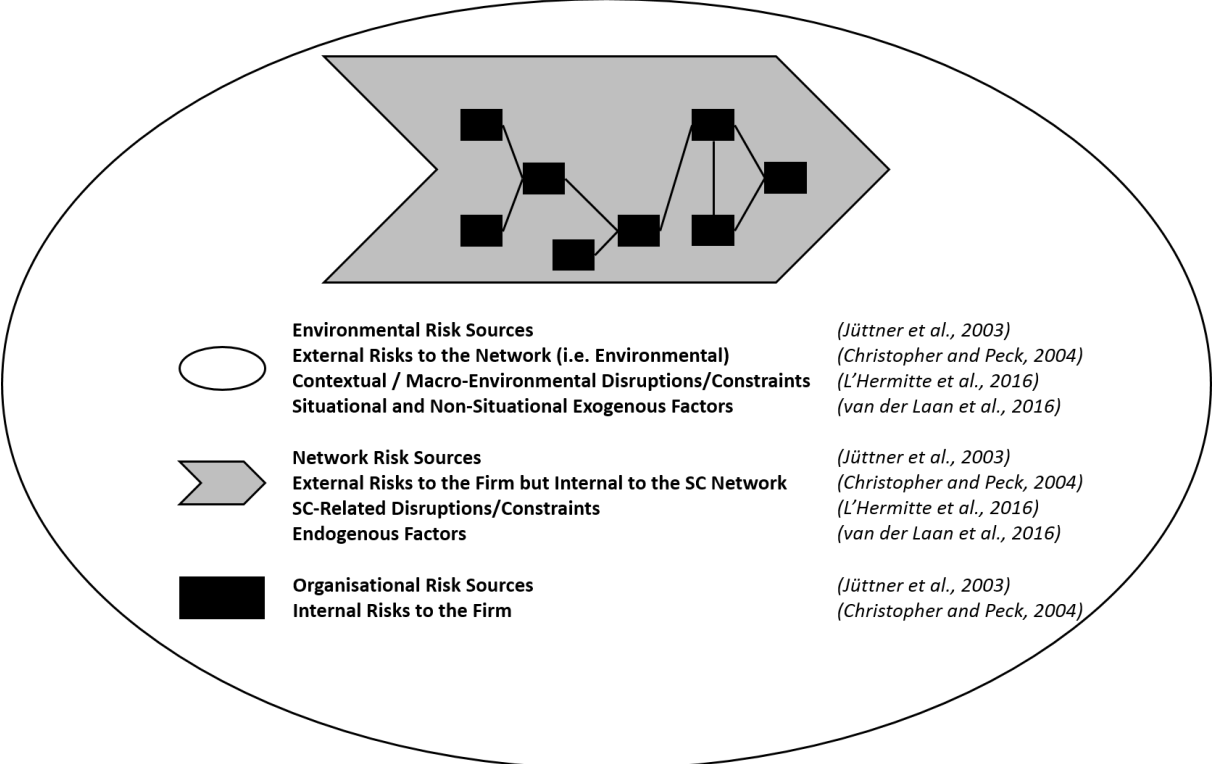


Figure 7: Overview of Risk Sources Discussed in Commercial and Humanitarian SCRM Literature (Christofferson and Müller (2017); modelled after Jüttner et al. (2003); Christopher and Peck (2004); L’Hermitte et al. (2016) and van der Laan et al. (2016))

As indicated earlier the *disruptions/constraints* as examined by L’Hermitte et al. (2016) appear comparable to the *challenges* investigated in this thesis project. Therefore, the five contextual/macro-environmental and eight SC-related disruptions/constraints discussed by L’Hermitte et al. (2016) have been selected to serve as categories for the classification of challenges in this study. Due to the fact that they are in general (with small deviations) very similar to the endogenous and exogenous factors discussed by van der Laan et al. (2016), the authors of this thesis have decided to combine elements of both studies in their framework. In order to increase both clarity and comprehensibility of the framework, some disruptions/constraints and factors needed to be streamlined.

The seven challenge categories grouped under *Organization and SC Partners* (highlighted red in the framework (Figure 8)) include all those factors *internal* to the focal organization as well as those external to the organization but *internal* to the SC-network (Table 1).

Table 1: Organization and SC Partners related Challenge Categories

Category	Discussed by	Definition
Personnel	van der Laan et al. (2016)	Covers all challenges concerning human resources of HOs.
Information Systems	van der Laan et al. (2016)	Covers all challenges related to computer and telecommunication systems, programs and software as well as their availability/ unavailability in HOs.
Internal Integration	van der Laan et al. (2016) L'Hermitte et al. (2016)	Includes challenges resulting from the interaction / lack of interaction between colleagues within the same HO. Covers internal communication and coordination as well as functional silos.
External Integration	van der Laan et al. (2016) L'Hermitte et al. (2016)	Covers all challenges resulting from the interaction / lack of interaction between HOs and its implementing partners (e.g. other NGOs, suppliers, commercial partners) as well as other actors involved in the humanitarian operation that HOs need to coordinate with (e.g. host government).
Processes & Standard Procedures	L'Hermitte et al. (2016)	Includes all challenges related to the compliance / non-compliance with processes followed within the focal organization and in the interaction between the organization and its implementing (SC) partners (e.g. procurement process).
Funding & Donations	L'Hermitte et al. (2016)	Covers all challenges concerning the availability of funding, the level of donor influence and quality of in-kind donations.
Demand Uncertainty	van der Laan et al. (2016) L'Hermitte et al. (2016)	Includes the challenges occurring in connection with needs assessment.

The five challenge categories grouped under *External* (highlighted *blue* in the framework (Figure 8)) include all factors *external* to the focal organization and the SC-network (Table 2).

Table 2: External Challenge Categories

Category	Discussed by	Definition
Physical Elements of Environment	van der Laan et al. (2016) L'Hermitte et al. (2016)	Covers all challenges related to weather conditions or the topography of the crisis region.
Socio-Economical	van der Laan et al. (2016) L'Hermitte et al. (2016)	Covers all challenges in humanitarian operations that emerge from the interrelation of economic activity and social customs practiced in the disaster region (e.g. corrupt officials).
Political Governance	van der Laan et al. (2016) L'Hermitte et al. (2016)	Includes all challenges that occur in connection with political decisions made by the host government or another influential government in the crisis region. Also challenges related to the volatility of the local political climate.
Security	L'Hermitte et al. (2016)	Covers all challenges concerning the security situation in the crisis region: ongoing armed conflicts, armed (rebel) forces stopping/hindering humanitarian aid, looting/pilferage of relief supplies, etc.
Infrastructure	van der Laan et al. (2016) L'Hermitte et al. (2016)	Includes all challenges related to the availability/unavailability/usability of transportation, communication and electricity networks.

Finally, Figure 8 gives an overview of the aforementioned challenge categories and therefore can be referred to as the initial version of the *Challenges Framework*.

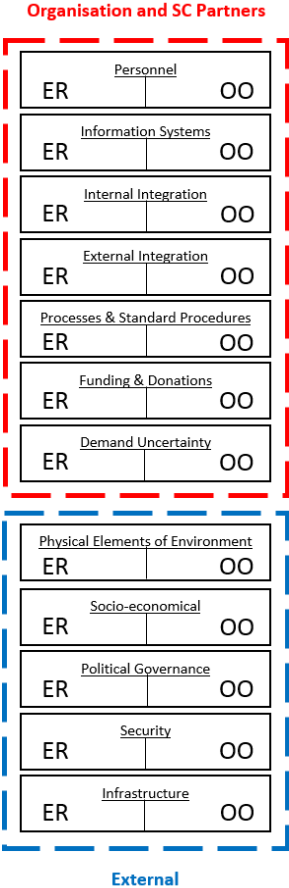


Figure 8: *Challenges Framework (simplified)*
(Christofferson and Müller, 2017)

2.1.3 Challenges Categorization

Although a lot of authors discuss challenges in humanitarian operations, there are only few publications that distinguish between ER and OO challenges (e.g. Yadav and Barve, 2016). Since one purpose of this study is to work out how challenges vary between ER and OO contexts, the authors have decided to present primarily those challenges in the following paragraph that have been allocated to either ER, OO or both types of operations in reviewed literature. For this purpose, the ‘Personnel’ category is discussed in more detail in order to demonstrate the interrelation of core challenges (CC) and RCCs, thus explaining the *Challenges Framework* displayed in Figure 9. Two CCs have been selected, that are deemed more critical in ER than in OO throughout the reviewed literature. A short description of each challenge is provided as well as the sources discussing them. The same approach is followed when introducing one RCC related to each CC. Apart from that, all reviewed literature has been categorized according to the *Challenges Framework* and is presented in the summarizing table (Table 3) at the end of this paragraph. Further, it should be noted that although 55 articles have been reviewed initially, only 46 of them are considered in this study. This is mainly due to the fact, that several articles have been published in practitioner journals or magazines and thus do not meet the standards of scientific publications.

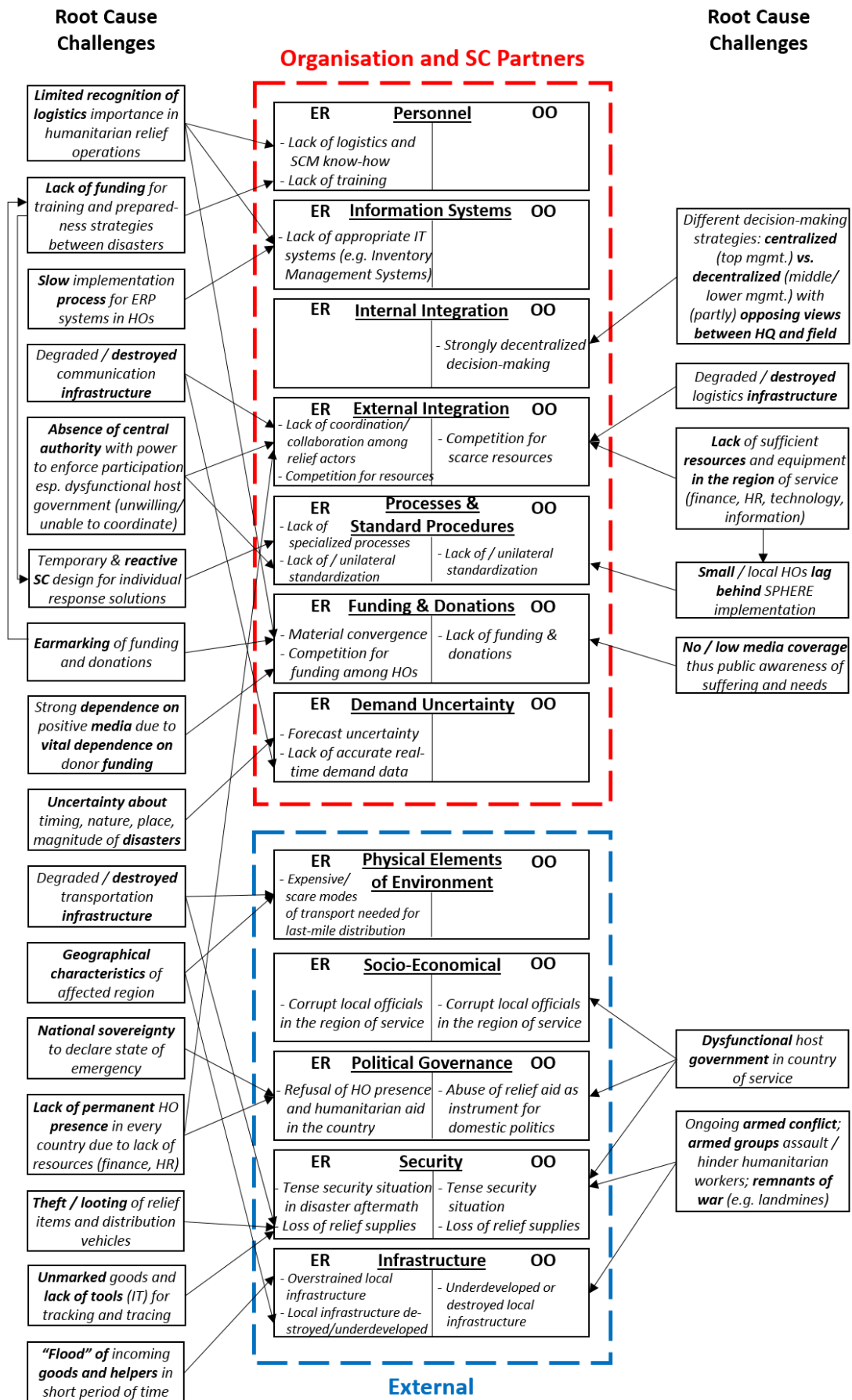


Figure 9: Challenges Framework (from Literature Review) (Christofferson and Müller, 2017)

Organization and SC Partners: Personnel

CC: Lack of logistics and SCM know-how

Abidi et al. (2015); Baldini et al. (2012); Bealt et al. (2016); Kovács and Spens (2009); L'Hermitte et al. (2016); van der Laan et al. (2016); Kovács and Spens (2011); Majewski et al. (2010)

The aforementioned authors have identified a general lack of specialist knowledge in the area of logistics and SCM on the field level that are perceived as particularly challenging during ER operations. The underlying reasons for this challenge are diverse, however the following RCC shall be discussed representatively.

RCC: Limited recognition of logistics importance in humanitarian relief operations

Abidi et al. (2014); Kovács and Spens (2009); Majewski et al. (2010); Dahl and Lindén (2016)

Despite the large share of logistics activities (thus costs) in humanitarian operations (80 per cent according to van Wassenhove, 2006), the cost savings potential of efficient logistics for the entire HO has not been fully recognized yet. Logistics and supply are still perceived as minor supporting functions rather than a core discipline in humanitarian operations. This is also reflected in the low recognition of logistics expenditure in donor funding decisions (Majewski et al., 2010) when earmarked donations largely prohibit the use of the associated monetary resources for investments in any other activity than authorized by the donor (Holguín-Veras et al., 2012; Starr and van Wassenhove, 2014) such as efficient transportation or prepositioning of stocks.

CC: Lack of training

Stapelton and van Wassenhove (2010); Sheppard et al. (2013); Goffnett et al. (2013); Maon et al. (2009); Apte (2009); Kovács and Spens (2009); van der Laan et al. (2016)

When discussing the absence of sufficient training in HOs, most authors usually refer to *task-based* rather than general (web-based) trainings as for ensuring knowledge of and compliance with the organization's code of conduct. The reviewed literature in particular discusses logistics and SCM-related trainings that need to be offered to both internal staff and local resources in the country (Kovács and Spens, 2009). Among other reasons, training appears particularly important in light of so-called *brain drain*, when skilled and experienced workforce leaves the organization due to a lack of perceived attractiveness (ibid.; van der Laan et al., 2016), and high staff turnover rates (Sandwell, 2001) which impedes the equal distribution of knowledgeable workforce throughout the organization. Furthermore, HOs are advised to provide training for their potentially low or even un-skilled volunteers in order to make best use of them (van Wassenhove, 2011; Apte, 2009). However, the sometimes described lack of basic literacy and numerical skills of local resources (van der Laan et al., 2016) can hardly be resolved by trainings within the scope of humanitarian operations.

RCC: Lack of funding for training and preparedness strategies between disasters

Tomasini and van Wassenhove (2009); Jahre and Heigh (2008); Tatham and Pettit (2010); Maon et al. (2009); Sheppard et al. (2013)

Most HOs are existentially dependent on donor funding and usually unable to provide any assistance or relief without the physical/guaranteed availability of funds (Balcik et al., 2010). However, the fund-raising process for humanitarian organizations and operations is difficult (Tomasini and van Wassenhove, 2009). It is largely related to topicality and to a certain level also to the political brisance (ibid.) of a disaster, thus HOs constantly seek visibility in the media through positive reports (Balcik et al., 2010). Donors in turn, are usually interested in publicly supporting those emergency operations with the aforementioned high media coverage. Therefore, they often earmark their support towards those operations instead of funding training or preparedness (Holguín-Veras et al., 2012; Tomasini and van Wassenhove, 2009). Finally, as Jahre et al. (2016) point out, preparedness strategies are not easily realized since funding is rarely transferrable from one year to another. As a consequence, usually at the end of a year, available donor money is invested in large amounts of stock congesting the logistics network (i.e. warehouses) in one location while other locations remain undersupplied.

Two observations can be made from the *'Personnel'* example above while also considering the full framework (Figure 9). First, ongoing or protracted operations (OO) and the challenges experienced in this context appear to be underrepresented in extant literature compared to ER situations. This is consistent with the findings by L'Hermitte et al. (2016), one of the few publications identified that provides insights into OO exclusively. Second, the degree of CC and RCC interrelations is significant. Figure 9 "only" illustrates CCs and RCCs that have been *specifically* assigned to either ER, OO or both by literature. However, the total amount of identified CCs and RCCs in the course of this research is much higher which means a much greater complexity of interrelations than displayed here. A reference to this is the case of *earmarked funding* as discussed in connection with *Personnel*-related challenges above. Earmarking not only affects the availability of donations for different purposes (such as training) but also reflects a more basic challenge – the lack of logistics recognition in humanitarian operations. Discussing the complex interrelations of CCs and RCCs in full details exceeds the scope of this literature review section. Therefore, the authors point out to the analyses made in the *Challenges Framework* (Figure 9) and provide the list of relevant authors in Appendix A.

To conclude this section, Table 3 provides an overview of all reviewed articles in this study meeting the requirements for scientific publications. Many authors have discussed CCs or underlying RCCs, which can be assigned to a CC within one or more challenge categories. Hence, only because an author has been assigned to one category (e.g. *Personnel*) does not necessarily mean that the respective author has discussed unequivocal *Personnel* CCs but potentially rather a RCC that affects *Personnel*-related challenges. However, in order to demonstrate the widespread interrelations of challenges discussed, the authors of this report have selected the following form of presentation.

Table 3: Overview of Reviewed Publications sorted by Challenge Category

Category	Authors discussing Challenges related to this Category	#
Personnel	Abidi et al. (2014); Abidi et al. (2015); Akhtar et al. (2012); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Dahl and Lindén (2016); Goffnett et al. (2013); Holguín-Veras et al. (2012); Jahre and Heigh (2008); Jahre et al. (2016); Jahre et al. (2009); Kovács and Spens (2009); Kovács and Spens (2011); L'Hermitte et al. (2016); Majewski et al. (2010); Maon et al. (2009); Rodon et al. (2012); Sandwell (2011); Sheppard et al. (2013); Stapelton and Wassenhove (2010); Tatham and Pettit (2010); Tomasini and van Wassenhove (2009); van der Laan et al. (2009); van der Laan et al. (2016); van Wassenhove and Pedraza Martinez (2010); Yadav and Barve (2016)	28
Information Systems	Abidi et al. (2014); Abidi et al. (2015); Adivar and Mert (2010); Anaya-Arenas et al. (2014); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Dahl and Lindén (2016); Komrska et al. (2013); L'Hermitte et al. (2016); Majewski et al. (2010); Maon et al. (2009); Starr and Van Wassenhove (2014); van der Laan et al. (2009); van der Laan et al. (2016); van Wassenhove and Pedraza Martinez (2010); Yadav and Barve (2016)	18
Internal Integration	Abidi et al. (2014); Abidi et al. (2015); Akhtar et al. (2012); Apte (2009); Balcik and Beamon (2008); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Dahl and Lindén (2016); Holguín-Veras et al. (2012); Kovács and Spens (2009); Kovács and Spens (2011); L'Hermitte et al. (2016); Majewski et al. (2010); Sandwell (2011); van der Laan et al. (2016); Yadav and Barve (2016)	17
External Integration	Abidi et al. (2015); Adivar and Mert (2010); Akhtar et al. (2012); Apte (2009); Balcik and Beamon (2008); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Dahl and Lindén (2016); Goffnet et al. (2013); Holguín-Veras et al. (2012); Jahre et al. (2009); Komrska et al. (2013); Kovács and Spens (2007); Kovács and Spens (2009); Kovács and Spens (2011); L'Hermitte et al. (2016); Majewski et al. (2010); Maon et al. (2009); Noori and Weber (2016); Rodon et al. (2012); Sandwell (2011); Serrato-Garcia et al. (2016); Sheppard et al. (2013); Sienou and Karduck (2012); Simpson and Hancock (2009); Simpson et al. (2009); Stapelton and van Wassenhove (2010); Starr and van Wassenhove (2014); Tatham and Pettit (2010); Tatham (2012); Tatham and Spens (2016); Tatham et al. (2017); van der Laan et al. (2016); Yadav and Barve (2016)	35
Processes and Standard Procedures	Abidi et al. (2014); Abidi et al. (2015); Adivar and Mert (2010); Alem et al. (2016); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Jahre and Fabbe-Costes (2015); Komrska et al. (2013); Kovács and Spens (2009); Kovács and Spens (2011); L'Hermitte et al. (2016); Majewski et al. (2010); Sandwell (2011); van der Laan et al. (2016); Yadav and Barve (2016)	17
Funding and Donations	Abidi et al. (2014); Abidi et al. (2015); Akhtar et al. (2012); Alem et al. (2016); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Jahre and Heigh (2008); Jahre et al. (2016); Kovács and Spens (2009); L'Hermitte et al. (2016); Majewski et al. (2010); Maon et al. (2009); Sandwell (2011); Sheppard et al. (2013); Starr and van Wassenhove (2014); Tatham and Pettit (2010); Tomasini and van Wassenhove (2009); Toyasaki and Wakolbinger (2011); Whitning and Öström (2009); Yadav and Barve (2016)	23
Demand Uncertainty	Adivar and Mert (2010); Alem et al. (2016); Anaya-Arenas et al. (2014); Apte (2009); Balcik and Beamon (2008); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Dahl and Lindén (2016); Holguín-Veras et al. (2012); Jahre et al. (2016); Kovács and Spens (2009); L'Hermitte et al. (2016); Majewski et al. (2010); van der Laan et al. (2016); Yadav and Barve (2016)	16
Physical Elements of Environment	Abidi et al. (2015); Akhtar et al. (2012); Alem et al. (2016); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); van der Laan et al. (2016); Yadav and Barve (2016)	12
Socio-Economical	Kovács and Spens (2009)	1
Political Governance	Akhtar et al. (2012); Balcik et al. (2010); Holguín-Veras et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); van der Laan et al. (2016); Yadav and Barve (2016)	7
Security	Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Jahre et al. (2016); Komrska et al. (2013); Kovács and Spens (2009); L'Hermitte et al. (2016); Maon et al. (2009); Noori and Weber (2016); Starr and van Wassenhove (2014); van Wassenhove and Pedraza Martinez (2010); Yadav and Barve (2016)	13
Infrastructure	Abidi et al. (2014); Abidi et al. (2015); Akhtar et al. (2012); Alem et al. (2016); Anaya-Arenas et al. (2014); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); Majewski et al. (2010); Maon et al. (2009); Sandwell (2011); Serrato-Garcia et al. (2016); Starr and van Wassenhove (2014); van der Laan et al. (2016); van Wassenhove and Pedraza Martinez (2010); Yadav and Barve (2016)	20

2.2 Bridging Humanitarian Logistics and Supply Chain Risk Management

As discussed before, in connection with the categorization of risk sources, there is a gap in humanitarian supply chain management (SCM) research regarding risk management strategies (L'Hermitte et al., 2016). In order to address this issue, van Wassenhove (2006), L'Hermitte et al. (2016) and Jahre (2017) suggest to apply mature commercial SCRM models in the humanitarian aid context.

According to Natarajarathinam et al. (2009) "*in supply chain literature, the sources of a crisis are commonly referred to as "risks"*" (p.541). Furthermore, L'Hermitte et al. (2016) discuss risks and uncertainties in the humanitarian SC closely linked to "disruptions/constraints encountered in the field". The latter has been identified as conceptually close (or even identical) to the challenges investigated in this study.

The similarity of the underlying concepts behind challenges and risks is further supported by Norrman and Jansson (2004) and Manuj and Mentzer (2008) who define *risk* as the combination of the probability for an unfavorable event to occur and the consequences (equal to impact) of this event for the affected organization. They also highlight the possibility to calculate comparable risk-values for individual hazards. While *risk sources* have already been discussed as internal, network-related or external "*variables which cannot be predicted with certainty and which impact on the supply chain outcome variables*" (Jüttner et al., 2003, p.7), the manifestations of those outcome variables, such as costs or quality – but also health and safety (Norrman and Jansson, 2004), are referred to as *risk consequences* (Jüttner et al., 2003) or *risk impact* (Norrman and Jansson, 2004).

Depending on the definition of *challenges* their impact on humanitarian SCs can be similar to the aforementioned risks in commercial SCs. Following the definition presented in Chapter 2.1.1 of this report, challenges are *problems or disruptions that humanitarian workers face or experience during an operation*. Consequently, both challenges and risks create the need for undesirable additional efforts in order to avoid or mitigate negative consequences reflected in the SC outcome. Hence, it appears reasonable to apply the same tools and strategies as proved successful in commercial SCRM also in the humanitarian context to assess and address (overcome or mitigate) challenges in humanitarian operations.

The second framework developed in this study therefore relates to the assessment of challenges in humanitarian operations and is geared to specifically answer to RQ3. The commercial SCRM process is presented, which comprises a varying number of steps depending on the respective detail levels discussed by different authors. However, according to Norrman and Jansson (2004) the core principles of *risk identification/analysis*, *risk assessment* and *risk management* are common to all SCRM processes. Hence, those three consecutive steps are discussed in the following section with a special focus on *risk assessment* and the *matrix-tools* used in this regard.

2.2.1 The Supply Chain Risk Management Process

In the following section a structured approach towards the identification, analysis and management of SC risks is presented (Figure 10).



Figure 10: SCRM Process (confined to essential steps) (Christofferson and Müller, 2017; following Manuj and Mentzer, 2008)

According to Jüttner et al. (2003) it is the aim of SCRM to “*identify the potential sources of risk and implement appropriate actions to avoid or contain supply chain vulnerability*” (p.9). In this context *SC vulnerability* is related to the adverse consequences emerging from the inability of risk mitigation strategies to outweigh the combined negative effects of internal, network-related or external risk sources and so-called *risk drivers* (calculated risks taken by an organization to reduce costs and improve competitiveness) (Jüttner et al., 2003). Apart from this, Norrman and Jansson (2004) emphasize the importance of collaboration between SC partners to effectively minimize the impact of SC risks by addressing the probability of occurrence or the severity of impact to the organization.

This definition appears fully transferrable to the concept of challenges. It is also vital to identify challenges – and especially their underlying root causes – in order to develop *sustainable* solutions to overcome them or at least mitigate their adverse impact on the operation.

The first step of the process has been addressed by the categorization of CCs and RCCs with help of the framework developed in Chapter 2.1 of this report (Figure 8). It is then decisive to make a comprehensive evaluation of all identified challenges under each distinct category, either by involving knowledgeable practitioners with many years of experience in humanitarian operations (“*specialists’ judgement*”) or by analyzing quantitative historical data (Norrman and Jansson, 2004). One tool to be used in risk or challenge assessment is the so-called *Risk Map* or *Risk Matrix*, which is presented in more detail in the next paragraph. Finally, taking into account the assessment results from Step 2, appropriate management or mitigation strategies need to be selected. Thus, depending on the criticality of the particular risk or challenge various approaches might be applicable. In other words, if the expected costs associated with the negative impact are insignificant, high investments in mitigation measures appear counterproductive. According to Norrman and Jansson (2004, p.452) it is therefore “*important [...] to find the right trade-off between risk management (protection) cost and risk cost (impact [...])*”. This seems to be particularly true in light of scarce funding for preparedness strategies in or between humanitarian operations (see discussion above). Table 4 has been created based on the findings of an extensive literature review by Jahre (2017) who provides a comprehensive overview of mitigation strategies pursued in commercial SCRM (“SCRM”) and humanitarian SCs (“HUM”). One strategy (discussed by Norrman and Jansson, 2004) has been added by the authors of this study. It is indicated by a star-symbol (*).

Table 4: Overview of Mitigation Strategies and the Contexts they are applied in (Jahre, 2017)

Strategy	Explanation and Examples	SCRM	HUM
Centralization	Stocks, production, distribution	x	x
Collaboration	Risk sharing, supplier development, information sharing	x	x
Dynamic Assortment Planning	Usable to influence choice and demand and to entice customers to purchase products that are widely available when certain products are facing supply disruptions.	x	
Economic Supply Incentives	Encourage additional suppliers to stay or enter into a certain market in order to avoid monopolistic situations and to secure multiple sources should a disruption occur.	x	
Flexible Manufacturing Process	Allow for adjustments in quantity and quality produced in their network; for example: varying between plants and/or production lines	x	
Flexible Supply Base or Hedging	Multiple sourcing options available, thus allowing for alternatives should one source be disrupted. One way realizing this is to develop a supply alliance network with suppliers in various countries.	x	x
Flexible Supply Contracts	Agreements with suppliers allowing the customer to adjust order quantities depending on need.	x	x
Flexible Transportation	Multi-modality, multiple carriers and/or multiple routes.	x	x
Make-and-Buy	Combination of in-house and outsourcing, which allows more flexibility in case of a disruption. Includes vertical integration.	x	x
Postponement	Utilizes product and process design concepts such as standardization, commonality, modular design and operations reversal to delay the point of differentiation in products, services, movement and other value-adding activities.	x	x
Revenue Management	Dynamic pricing and/or promotion.	x	
Silent Product Rollover	'Leak' new products into a market without making formal announcements.	x	
Speculation	Opposite of postponement, such as forward placement of inventory, forward buying and early commitment to the form of a product.	x	x
Strategic Stock	Inventories at certain 'strategic' locations (warehouses, logistics hubs, distribution centers) that can be deployed quickly in case of a disaster. Often shared by multiple SC partners, e.g. vendor-managed inventory	x	x
Transferring *	Either shifting risk to an insurance company (e.g. life insurance policy for employees) or to other SC partners (e.g. outsourcing of activities or moving inventory liabilities).	x	

2.2.2 Supply Chain Risk Assessment

According to Hallikas et al. (2002) risk assessment primarily supports an organization to set the focus on the most essential and alarming risks thus avoiding waste of resources and efforts on developing strategies to manage risks of minor significance. Furthermore, the authors

emphasize the meaning of the assessment outcome for the choice of appropriate management strategies.

This study focuses primarily on so-called *perception-based* risk assessment tools which leaves other (quantitative) tool categories, where the probability distribution of risk plays a significant role, largely aside. Perception-based models are commonly used when hard data is not available thus probabilistic models cannot be build. Instead, decision makers have to rely on available business intelligence data and their intuitive understanding of the industry (Manuj and Mentzer, 2008). For this purpose Hallikas et al. (2002) provide an internal-auditing tool to support the management decision-making process. The tool, as indicated in Figure 11, applies the two factors *probability of risk occurrence* and *severity of consequences (or impact)* on the organization that have also been discussed by Norrman and Jansson (2004) and Manuj and Mentzer (2008). Audit participants are asked to select a value between 1 and 4 depending on the estimated degree of probability (very unlikely, improbable, probable, very probable) and severity (insignificant, minor, serious, catastrophic). The multiplied values of both factors indicate a *risk value* in the last column of the table which might be used to rank the risks according to their significance. However, Hallikas et al. (2002) point out that their model cannot deliver an absolute value of risk.

Cause of Event	Probability of Cause of Event	Severity/Effect of Cause on Organization	Risk
Description 1	1 2 3 4	1 2 3 4	6
Description 2	1 2 3 4	1 2 3 4	4

Figure 11: Risk Assessment Tool (following Hallikas et al., 2002)

The completed table of the risk assessment tool might then be fitted into the *Risk Map/Matrix* (Figure 12) presented by Norrman and Jansson (2004) which provides an illustrative solution for presenting various risks to a SC and highlighting individual areas in need of attention.

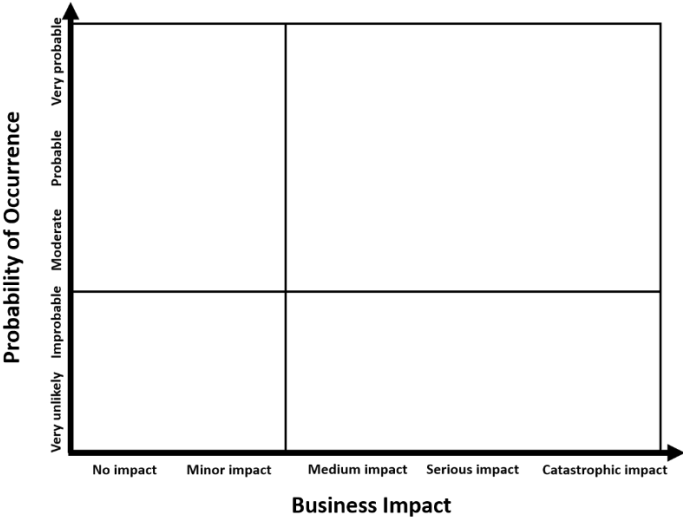


Figure 12: Risk Map/Matrix (modelled after Norrman and Jansson, 2004)

Ideally, no risks should be found in the upper right corner of the matrix where the chances of a catastrophic impact on the organization are very high. Any risks that turn out to fall into this category will have to be assigned highest priority in the following risk management stage.

2.2.3 Challenges Assessment

As motivated throughout this section, the two concepts of *risk* and *challenge* exhibit strong similarities. Encouraged by the recent publications by L’Hermitte et al. (2016) and Jahre (2017), both advocating for a courageous application of commercial SCRM tools and strategies in the humanitarian relief context, the authors of this study have developed an assessment framework for challenges. It is basically an enhancement of the Risk Map/Matrix discussed in the previous paragraph, extended by a *third dimension* in order to be able to also assess the *probability to overcome a challenge or to mitigate its negative impact* on the humanitarian operation. The *Challenges Assessment Framework* (Figure 13) can be used to indicate the criticality of different challenges (e.g. ‘lack of training’ and ‘corrupt local officials in the country of service’) in direct comparison with each other, thus within the *same* framework, or the behavior of the same challenges (or challenge categories) in different contexts. In this case one separate matrix has to be created per context. Thus, for example, the behavior of different challenge categories (e.g. *Personnel* or *Funding & Donations*) can be compared between ER and OO. This has been done by means of a questionnaire sent to UNHCR practitioners involved in the Greece operation as part of this study. Further information are provided in the section about *data collection methods* in the Methodology chapter of this report (Chapter 3.2.4).

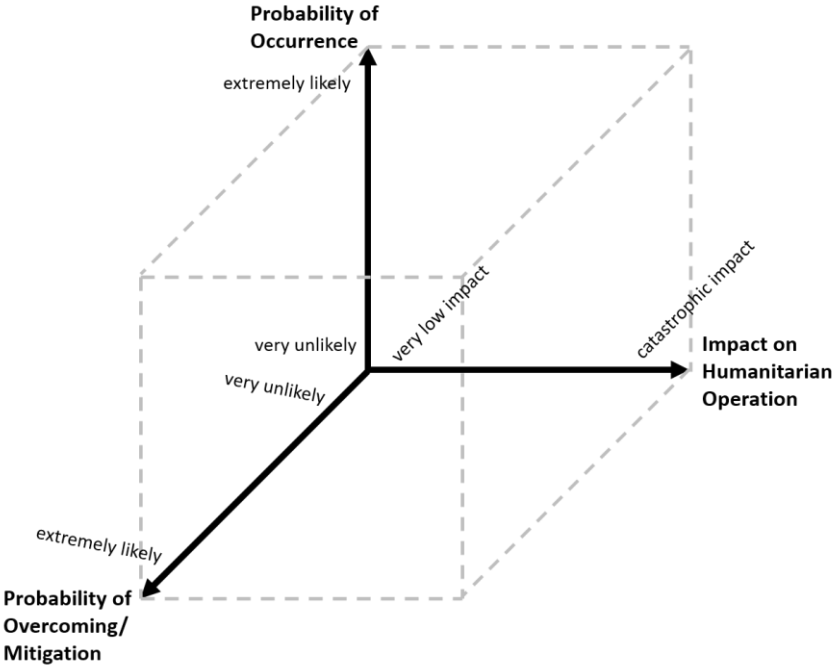


Figure 13: Challenges Assessment Framework (Christofferson and Müller, 2017)

3. Methodology

This chapter presents the approach used to conduct the empirical study for this thesis, which has been carried out in order to explain, support and develop the findings from the literature review in Chapter 2 “Theoretical Framework”. It includes the *research strategy*, the *research design*, the *methods used to analyze* the empirical data and it ends with a description of how the *trustworthiness* of this study has been secured.

3.1 Research Strategy

During this thesis project, the aim has been to answer the identified research questions (RQs) in order to figure out *what* challenges exist in humanitarian operations and *how* they vary in different contexts (RQ1); *how* challenges interrelate with each other (RQ2) and the criticality of different kinds of challenges (e.g. *Personnel*-related challenges) in ER compared to OO (RQ3).

The identified RQs provide assistance in finding the appropriate *research strategy* for a study. If the question or questions are seeking to *explain* some given circumstances, such as if the RQs contain a “*how*” and “*why*”-question, a *case study* is to prefer. If the RQ requires a wide and in-depth description of the investigated social phenomenon, this method is also relevant (Yin, 2009). This is described by Yin (2009) as “*an empirical inquiry that investigates a contemporary phenomenon within its real-life context*” (Yin, 2009, p.18). As can be seen in the aforementioned RQs, this study includes strong *how* and *what* questions and a case study is thereby appropriate according to Yin (2009).

In Chapter 2 of this thesis report, specific categories for classifying challenges have been developed. The authors have identified a gap in extant research regarding the interrelation of core challenges (CC) and their related root causes (RCC) in addition to providing solutions to them. This thesis is therefore entering the field of generating new or, to some extent, extending existing theory. The case study research method is strongly advised to be used in cases when developing and generating new theory (Meredith, 1998; Voss et al., 2002; Yin, 2009).

Table 5: Matching Research Purpose with Methodology (Voss et al., 2002; highlighting added)

Purpose	Research question	Research structure
<i>Exploration</i>		
Uncover areas for research and theory development	Is there something interesting enough to justify research?	In-depth studies Unfocused, longitudinal field study
<u>Theory building</u>		
Identify/ describe key variables	What are the key variables?	Few focused case studies
Identify linkages between variables	What are the patterns or linkages between variables?	<u>In-depth field studies</u> Multi-site case studies
Identify “why” these relationships exist	Why should these relationships exist?	Best-in-class case studies
<i>Theory testing</i>		
Test the theories developed in the previous stages	Are the theories we have generated able to survive the test of empirical data?	Quasi-experiment Multiple case studies
Predict future outcomes	Did we get the behavior that was predicted by the theory or did we observed another unanticipated behavior?	Large-scale sample of population
<i>Theory extension/ refinement</i>		
To better structure the theories considering the observed results	How generalizable is the theory? Where does the theory apply?	Quasi-experiment Case studies Large-scale sample of population

Based on Table 5, one of the more suitable structures for research with a focus on building theory is an *in-depth field study*. Building theory represents either identifying or describing the following: i) key variables, ii) linkages between variables or iii) “why” these relationships exists (Voss et al., 2002). Since this study focuses on identifying challenges, how they interrelate with each other and to what extent they vary between different contexts, an in-depth field study is suitable for this thesis. Furthermore, the in-depth field study includes one specific case and one specific organization.

As a prerequisite for the case, both the *research questions* and *unit of analysis* must be identified. The *unit of analysis* is ‘the case’ and can be a person, company, group of people, decision or event (Yin, 2009). During the case-based research it is not uncommon that the RQ(s) evolves and the constructs are modified over the time the research proceeds (Voss et al. 2002).

3.2 Research Design

Yin (2009) describes that research design can among others be a ‘blueprint’ for the research, including at least four problems: i) *what data is relevant*, ii) *what data to collect*, iii) *what question to study* and iv) *how to analyse the result*. The research design is not only a work plan, but contains much more. The main purpose is to help avoiding situations where the evidence

(i.e. the findings from the case study) does not address the original research questions. With this said, the research design handles the logical problem, not the logistical one, throughout the research (Yin, 2009).

What follows below is the definition of the *unit of analysis* in this case study as well as a detailed *description of the actual case*. Furthermore, the *case selection* and *data collection methods* are explained.

3.2.1 Unit of Analysis

According to Yin (2009), the unit of analysis can be a person, a company, a group of people, decisions or events. The unit of analysis is therefore related to the problem of defining what the ‘case’ is. This will be discussed in Section 3.2.2. A general guide in defining the unit of analysis is described by Yin (2009) as related to how the research questions have been defined initially. If the research questions do not lead to one unit of analysis being favored over another, the question is either too vague or too numerous, which will create difficulties in conducting the case study (ibid.). Having a clearly defined unit of analysis in the beginning does not mean that it cannot be revisited, due to discoveries made during progression of the research.

The unit of analysis in this specific in-depth field study is the UNHCR operation in Greece. In addition to this, the possibility to add information and findings from other operations and organizations exists since interviewed personnel and respondents to the questionnaire might have different experiences from earlier operations with the same or other organizations. However, it should be noted that other organizations and operations are not part of the unit of analysis, even though their input is of high interest for this specific study. This is also consistent with the procedure followed by L’Hermitte et al. (2016) who have encountered the same phenomenon during their case study with the UN WFP.

3.2.2 Describing the Case

This project emerges at a time when the civil war in Syria is at the height of cruelty and complexity with many parties involved. UNHCR, as the United Nations’ refugee agency, currently faces a tense situation in the neighboring countries of Syria where many displaced people search for shelter, for example Turkey, Jordan and Greece. At UNHCR the refugee crisis in Europe is called the ‘*Mediterranean Situation*’. There are in particular three countries receiving the POCs in the wider region: Greece, Italy and Spain, where Greece has been facing the largest amount of arrivals during 2015. Figure 14 shows the influx by sea-arrivals to Europe during 2015, which has been around one million people in total. 48 percent of those sea-arrivals have come from Syria and 21 percent from Afghanistan. According to UNHCR, those two states have been the most common countries of origin by far (see Figure 14).

Today, in the mid of 2017, the situation in *Greece* appears to be more relaxed compared to 2015 when more than 850 000 refugees have been registered in the country (see Figure 14). As for 2016 (Figure 15) and the first half of 2017, the numbers of arriving refugees tend to be higher in Italy compared to Greece (see Figure 15; UNHCR, 2017a). What is also important to know is that during the peak of the ‘*Mediterranean Situation*’, more than 10 000 POCs were arriving to the Greek islands *per day* (Supply Officer, UNHCR Greece, 2017). When the northern

borders of Greece towards the so-called *Balkan Route* had been closed in March 2016 (Figure 14 visualizing the route), this created a new situation in Greece where more than 50 000 POCs are now stuck, not being able to continue their journey further north in Europe (Supply Officer, UNHCR Greece, 2017).

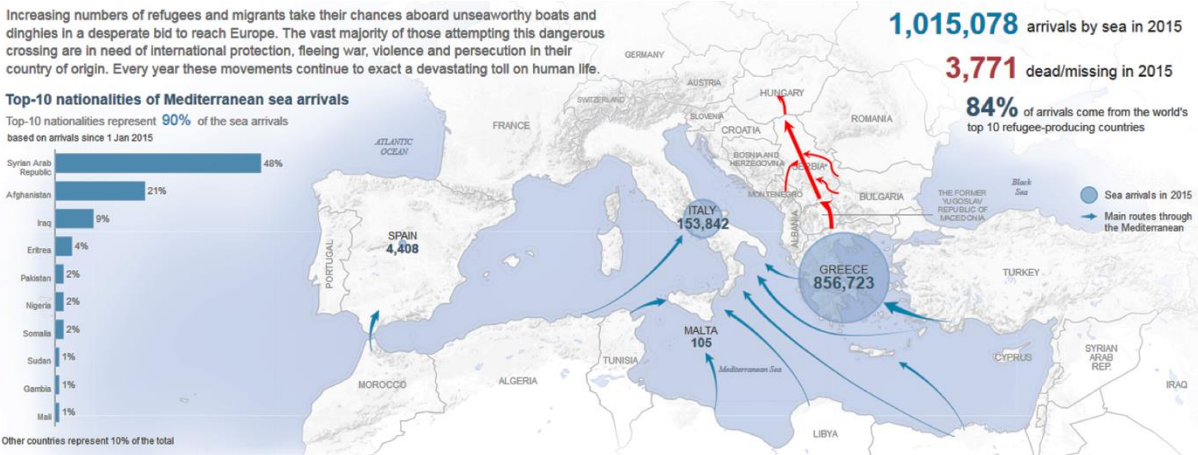


Figure 14: Influx of Refugees to Europe by Sea during 2015 (UNHCR, 2017b), *Balkan Route added by authors*

Also in March 2016, European Union (EU) member states and the government of Turkey have closed an agreement regulating the influx of refugees to Southeast Europe, the *EU-Turkey Statement*. The Turkish government agrees to accommodate new arriving refugees from the Middle East in order to prevent them from traveling to the EU as well as to take back all irregular migrants intercepted in Turkish waters. In return, Turkey is given financial support and the promise of accelerating the accession negotiations to the EU (European Council, 2016).

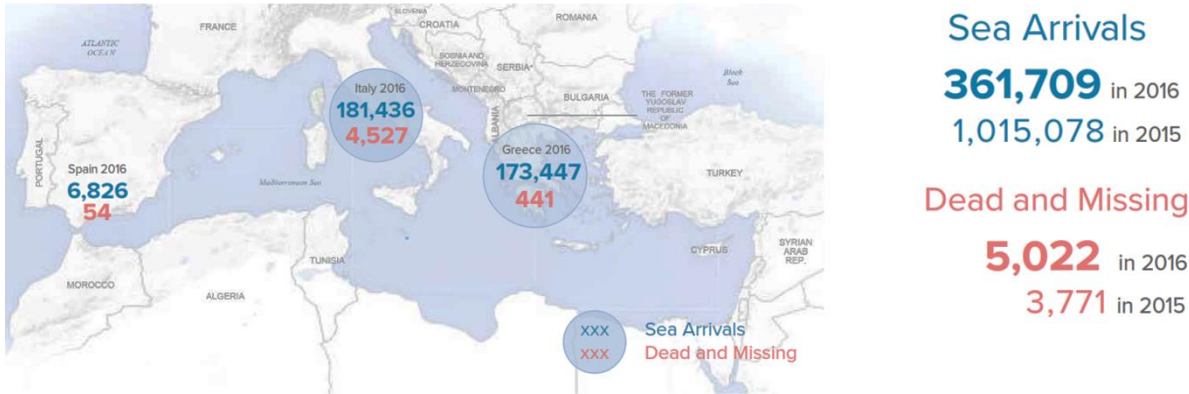


Figure 15: Influx of Refugees to Europe by Sea during 2016 (Reliefweb, 2017)

Recent developments, however, that have led to a rapid deterioration of mutual diplomatic relations, make the renewed escalation of the crisis in Southeast Europe with increasing migration numbers into Greece a real danger.

With this said, the situation in Greece is still an ER operation. However, at the time this thesis is conducted, the operation is on the transition between the *stabilization* and the *decline phase*. It has become more stable and is now classified somewhere between the mid and late phase of an ER operation according to the consensus of the majority of interviewed UNHCR staff in Greece. Some would even claim it is an Ongoing Operation already (Associate External

Relations Officer, UNHCR Greece, 2017).

As indicated in Figure 16, the Greek operation currently consists of a multitude of different camps and collecting-points for refugees. The largest share of the camps is owned and operated by the Greek military (Technical Unit, UNHCR Greece, 2017). Furthermore, it is noticeable that the camps in Greece are widely spread all over the country and designed to accommodate much lower numbers of POCs (several hundred up to several thousand per camp) compared to refugee camps in other countries. A prominent example for a converse approach – even within the same refugee crisis and the wider region – is the camp *Zaatari* in Jordan, home to almost 80 000 POCs as by May 2017 (UNHCR, 2017c). There are many reasons to why there are differences. One of them is the geographical factor. The Greek territory consists of many small islands, what causes a certain spread of the arriving POCs. Another cause of the distinction might be, that the POCs’ goal is often to seek asylum in northern Europe, and not Greece. Therefore, many refugees see Greece as a transit-country rather than a permanent residence which is why no larger camps for permanent mass-accommodation were needed. Finally, due to a significant say of the Greek government in the localization process of camps, comparably small sites are spread all over the mainland for not further specified, presumably politically motivated, reasons.

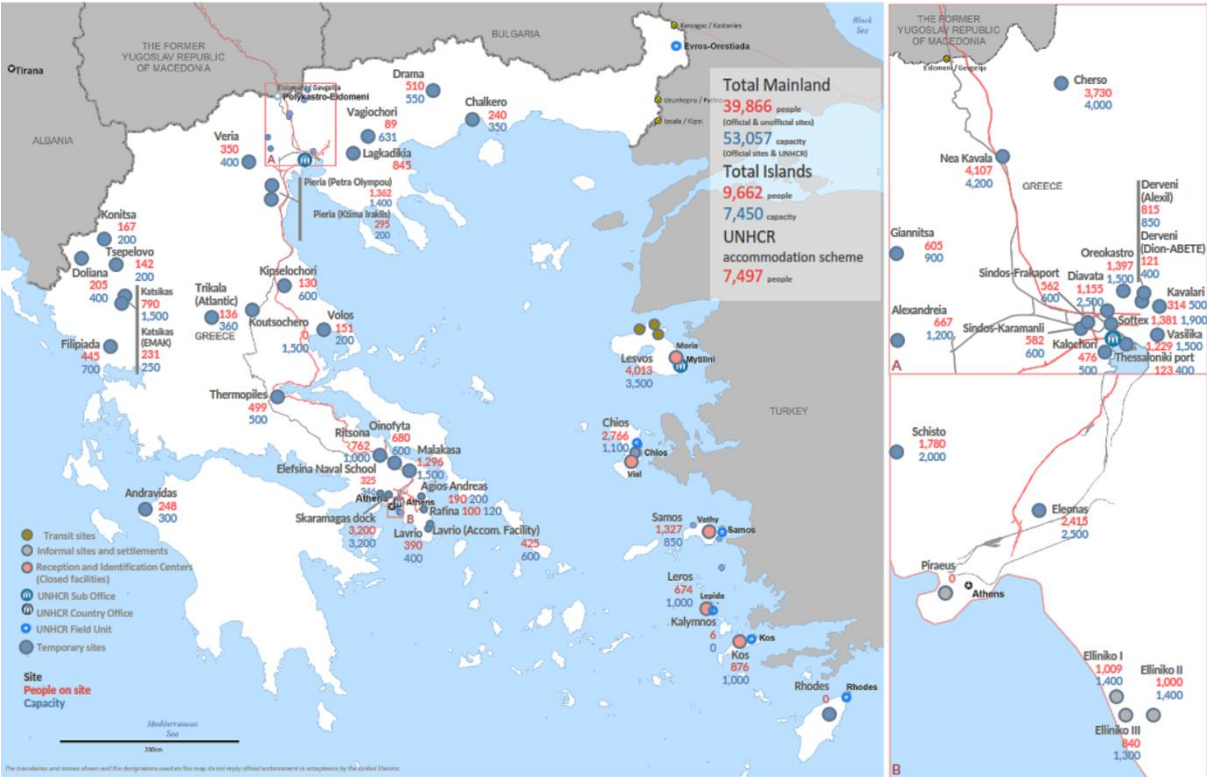


Figure 16: Refugee Camps and Collecting Points in Greece, Mid 2017 (UNHCR, 2017d)

3.2.3 Case Selection

In an in-depth case study a *single case* is thoroughly explored by the researcher(s). Thus, in the context of an investigation of challenges in humanitarian operations, the specific case needs to fulfil a few requirements. First, a situation that exceeds the local population's abilities to cope with by the means available at their disposal. Second, a humanitarian relief actor (preferably within a network of SC/implementing partners) to be observed. Third, the permission of this relief actor to observe their operations, i.e. the permission to be on site and accompany their staff for an appropriate duration of time (e.g. one month). Fourth, the permission and willingness of the relief actor to share insights into the organization and its challenges through interviews, observations of internal meetings or review of internal documents and communication.

This study is the third master thesis project in a long-standing collaboration between Lund University (LU) and UNHCR. The good relations and personal commitment on both sides, UNHCR officials and LU researchers, have eventually created the opportunity to investigate the organization's Greece operation within the scope of this thesis project. All the above mentioned criteria have thus been fulfilled.

3.2.4 Data Collection

In order to be able to create a well-structured and accurate research when using a case study, the way of collecting data plays an important role. This is done by using triangulation, which is used to combine different data collection methods while studying the same phenomenon (Voss et al., 2002; Yin, 2009). This practice is also referred to as "*triangulation of methods*" (Patton, 2002). These different methods could, for example, be interviews, direct observations, questionnaires and content analysis of (internal) documents.

Within an in-depth case study as pursued in this thesis, there are three different methods that are most commonly used, interviews, direct observations and questionnaires (Voss et al., 2002). The authors have used all of these methods and to some extent even content analysis of internal documents (e.g. Security Risk Management (SRM) passages in the *UN Programme Criticality Framework*). The different methods and how they have been applied is discussed below.

During the first period of the field study, the researchers have spent time observing and developing an understanding of the case environment (i.e. the UNHCR operation in Greece). This has also included introducing themselves and explaining the purpose of their research to UNHCR staff members in order to arrange for interviews at a later time.

Interviews

Both Voss et al. (2002) and Yin (2009) state the importance of interviews in a case study. According to Voss et al. (2002, p.207) "*much, but not all field data will be collected through interviews*". The authors of this thesis have largely followed this approach during the in-depth case study with UNHCR and a total of 17 interviews have been completed. The interviews have been conducted to answer to RQ1 and RQ2. In order to get as accurate and diverse challenges as possible, the focus has been on conducting interviews with a wide range of employees from

different UNHCR departments in Greece. Such as personnel from the ‘Supply Unit’ (e.g. procurement, customs clearance and demand planning), the ‘Field Unit’ (in charge of looking after refugee camps or so-called “*urban housing*”), the ‘Programme Unit’ (development and realization of projects and strategies to support the living conditions of POCs in the country; also tasks related to ‘*Funding & Donations*’), the ‘Technical Unit’ (in charge of camp-design related issues, such as the provision of sufficient WASH facilities) or the ‘Relocation Unit’ (planning and execution of projects to accommodate POCs in permanent housing facilities i.e. apartments – in the long run).

Not only has interviewing different units been a way of collecting a wide range of challenges, but also to involve different positions / job titles such as *Senior Field Assistant* or *Associate External Relations Officer*. Table 6 provides a summary of all interviews conducted as well as the respective titles of all involved interview partners.

When doing case-based research, the interviews will rather follow guided conversation than a structured interview. Thereby, it follows a more qualitative approach (Yin, 2009; Bryman and Bell, 2015). When conducting qualitative interviews, there are two major alternative methods to be used, either doing unstructured (sometimes also referred to as *almost unstructured*) or *semi-structured* interviews (Bryman and Bell, 2015). In *almost unstructured* interviews the researchers, according to Bryman and Bell (2015), are not following an interview-guide but rather short notes and talk freely. *Semi-structured* interviews, in turn, follow the approach of having a list of preselected questions (e.g. an interview-guide) more, but with a great deal of freedom to also ask other – related – questions or to pick up on what the interview partners are answering (ibid.).

In order to be prepared for both of the above mentioned interview situations, the authors have prepared an interview-guide based on the identified challenge categories as discussed in Chapter 2.1. The interview-guide, which can be reviewed in Appendix B, is structured as follows. First, an introduction to the study (i.e. the thesis project) is given, explaining the purpose of the research and the interviews. Second, the most relevant underlying concepts to the study are defined, such as ‘*challenges*’ or the distinction between *ER* and *OO* (following Holguín-Veras et al., 2012), in order to create an uniform understanding of the investigated subjects among interviewees. Third, the different contexts to be compared during the interviews are introduced. Inspired by the description of MSF’s practices at their Operational Center in Amsterdam, given by van der Laan et al. (2016), the authors have decided to ask interview participants to make an assessment of the criticality of challenges (discussed by themselves) in *different contexts* such as i) different *regions/countries*, ii) different *cultures*, iii) different *sizes of operation* (i.e. the number of involved actors), iv) different *time elapsed* since occurrence of the disaster (early/mid/late *ER* or *OO*) and v) different *types of disasters* (man-made vs. natural). Fourth, the interviewees’ role in the UNHCR Greece operation as well as their professional background (e.g. involvement in *ER* and *OO* operations) are requested in order to gain an impression of the participant’s ability to correctly assess different scenarios. Finally, the simplified *Challenges Framework* (Figure 8) is presented and interviewees are encouraged to select those areas (e.g. *Funding & Donations*, *Demand Uncertainty*) where they are currently experiencing / have experienced the most challenges throughout their career in the humanitarian

aid sector. This approach of letting participants set their own focus has been selected in order to use the limited timeslots, which staff members have cleared for participating in the interviews, most efficiently.

Table 6: All Interviews Conducted during the In-Depth Field Study at UNHCR in Greece

#	Place & Time	Title/Affiliation	Involved in ER	Involved in OO	Years in HOP	Type of Interview
1.	Athens, BO, 21/03/2017	Supply Officer	2	1	3 years 9 months	Semi Structured
2.	Athens, BO, 22/03/2017	Senior Field Assistant (1)	2	> 5	> 10 years	Semi Structured
3.	Athens, Camp Schisto, 28/03/2017	Senior Field Assistant (2)	3	0	4 years	Semi Structured
4.	Athens, BO, 29/03/2017	Programme Officer	3	2	14 years 5 months	Semi Structured
5.	Athens, BO, 29/03/2017	Senior Inter-Agency Coordination Assistant	1	0	1 year 5 months	Semi structured
6.	Athens, BO, 29/03/2017	Field Safety Advisor	5	1	> 10 years	Semi structured
7.	Athens, BO, 30/03/2017	Supply/Procurement Assistant	1	0	1 year	Semi Structured
8.	Athens, FO, 30/03/2017	Senior Supply Assistant (1)	1	0	9 months	Semi Structured
9.	Athens, BO, 30/03/2017	Associate External Relations Officer	3	1	5 years 4 months	Semi Structured
10.	Athens, BO, 30/03/2017	Associate Programme Officer (Donor Relations)	1	2	Around 8 Years	Unstructured
11.	Athens, BO, 30/03/2017	Senior Supply Assistant (2)	1	0	1 year 5 months	Semi structured
12.	Athens, FO, 31/03/2017	Field Associate	1	0	18 months	Semi Structured
13.	Athens, via Skype, 03/04/2017	Mental Health Activity Manager at Médecins Sans Frontières (MSF)	1	1	Around 18 months	Semi structured
14.	Thessaloniki, SO, 05/04/2017	Senior Programme Assistant	1	0	1 year 8 months	Unstructured
15.	Athens, BO, 05/04/2017	Senior Technical Officer	5	1	Around 8 Years	Semi structured
16.	Athens, BO, 07/04/2017	Assistant Representative (Operations) Greece	> 5	4	> 10 years	Unstructured
17.	Athens, BO, 07/04/2017	Senior Supply Officer / Head of Supply Chain Greece	> 5	2	> 10 years	Semi Structured

All the interviews in Table 6 have been conducted in Greece between the 21st of March and the 7th of April 2017. Furthermore, nine of total seventeen interviews have been conducted by two interviewers, Johan Christofferson and Erik Müller. The remaining eight interviews have been split between both researchers in order to adapt to the sometimes overlapping interview

timeslots selected by the participants. All interviews except one have been performed face to face. The only exception is a semi-structured Skype interview.

At this point, it should be emphasized once more, that due to the emergency character of the UNHCR Greece operation, staff members have only had limited time for interviews (between 30 and 90 minutes) and their schedules have been subject to constant changes. Furthermore, a high share of staff members in the operation has been local (i.e. Greek) with some significant experience on the local labor market and the essential language skills to communicate with local implementing partners. However, the downside of this aspect lies in the fact that a significant amount of interviewees had not been involved in other operations than the one in Greece. Nevertheless, interviews have been conducted with both local and international staff in order to collect different biased and unbiased views, for example on the country of service (Greece) including local habits and peculiarities. This practice, of cross-referencing and comparing interview answers, has been of particular importance in order to better understand and classify statements, for example, about challenges related to the host government. Eventually, 59 percent of all interviews have been conducted with international staff experienced in various ER and OO operations over many years.

Direct Observations

Direct observations of relevant behaviors or environmental conditions made in the *natural setting* of the case constitute another source of evidence (Yin, 2009). In that respect *formal* and *casual* observation approaches are distinguished. While formal activities comprise the purposeful participation or visit of an event (e.g. attending a meeting) with the intention to make observations, casual activities describe observations made in connection with another event (e.g. a field trip in order to conduct interviews) (ibid.). According to Yin (2009), observations are rarely used as stand-alone evidence but rather to support other data collection methods. Thus it mainly serves to create a better understanding of the context in which the phenomenon of investigation is encountered. Finally, the involvement and comparison of observations made by *multiple researchers* contributes decisively to the credibility of the observational evidence (Yin, 2009).

During the first days of the field study in Greece the focus of the authors has been on gaining an understanding of the UNHCR operation in the country. This included talking to personnel about their responsibilities and getting introduced to the different units such as *Supply*, *Programme* or *Technical* unit. Apart from that, the opportunity to visit the largest UNHCR stock in the Greece operation has arisen in the course of the first week in Greece. The authors have thus accompanied *Supply Unit* staff to a warehouses located in the outskirts of the Port of Piraeus holding 60 percent of all UNHCR relief stocks in the country worth around 3 million Euros (Supply Officer, UNHCR Greece, 2017). This field visit has made it possible to ask informal questions about supply-related procedures as well as making direct observations of the local warehouse operations.

Apart from the “daily observations” on the corridors of a supranational HO, the authors have been given the opportunity to get an insight into selected events and locations. They have observed an internal training event for process compliance, visited refugee accommodations of

different kind and official status (i.e. official refugee camps including first hand experiences with local bureaucracy in order to be granted access and unofficial housing squats including skepticism about official institutions) and accompanied a group of senior officers on a two-day mission to camps in the Thessaloniki region. All major field visits and events are listed in the table below (Table 7).

Table 7: Different Field Visits and Events Experienced during the Field Study in Greece

#	Place & Time	Name of the Location or Event
1.	Athens, Port of Piraeus, 14/03/2017	UNHCR Warehouse Operated by 3PL (Kuehne+Nagel)
2.	Athens, BO, 22/03/2017	Supply Training for <i>Administration Unit</i> Hosted by <i>Supply Unit</i> Athens BO
3.	Western Athens region, 28/03/2017	Schisto Camp Present: UNHCR + NGOs + Greek military Operated by the Greek military.
4.	Athens city centre, 29/03/2017	Urban Areas, Occupied buildings (squats), Operated by anti-authoritarian/leftist groups
5.	Eastern Thessaloniki region, 04/04/2017	Camp Lagkadikia Present: UNHCR + DRC Operated by Danish Refugee Council (DRC)
6.	Northern Thessaloniki region, 05/04/2017	Camp Nea Kavala Present: ICRC+ UNHCR+ DRC Operated by the Greek military

The observations made throughout the excursions have been perceived as extremely helpful during the interviews since they have enabled the authors to ask more relevant follow-up questions. Furthermore, the knowledge of the context has been valuable during later stages (analysis) when comparing and cross-referencing different results from the interviews.

Questionnaire

Self-completion questionnaires, like the one used for this study, are occasionally referred to as self-administered questionnaires, where the questionnaire is answered and completed by the respondents themselves. This is significantly different compared to structured interviews and since there is no interviewer to ask the questions, the questionnaire must be easy to follow and the questions easy to answer for the respondent (Bryman and Bell, 2015). The advantages of using this specific research method are that it is easy to send out in big quantities, it is easy for respondents to answer to it whenever they have time and it is also relatively cheap to administrate. These strengths usually outweigh the weaknesses of the method such as the inability to help respondents if they do not understand a question or the very limited possibilities to collect additional data (ibid.). Most self-completion questionnaires tend to be closed thus for example suggesting *fixed answers* in vertical or horizontal check boxes. These fixed answer alternatives can even follow a Likert scale (e.g. 1 to 7 as used in this study). This way of designing the questionnaire facilitates the processing of collected data in the subsequent data analysis (ibid.).

Therefore, in order to find answers to RQ3 and to increase the understanding of the results from the interviews, a questionnaire has been developed and sent out to support this study. Other

than the interviews which have been used primarily to collect qualitative data, the questionnaire follows a quantitative approach with questions divided into different categories. The ranking is made by use of a 1 to 7 Likert scale.

The questionnaire is structured according to the categories of the *Challenges Framework* (Figure 8) including a thirteenth category that has been identified during the trip to Greece ('*Community/Public*'). Each of the thirteen categories is sub-divided into two sets of questions, one geared towards ER and the other towards OO operations. Both ER and OO sets consist of the same three questions. Based on their experience in the world of humanitarian aid, participants are asked to make an assessment of i) the *probability of occurrence* of category-related challenges in ER/OO, ii) the (negative) *impact* of category-related challenges on ER/OO operations and iii) the *probability to overcome* category-related challenges or mitigate their negative impact in ER/OO. Figure 17 shows an example for the assessment of *Personnel*-related challenges in ER operations.

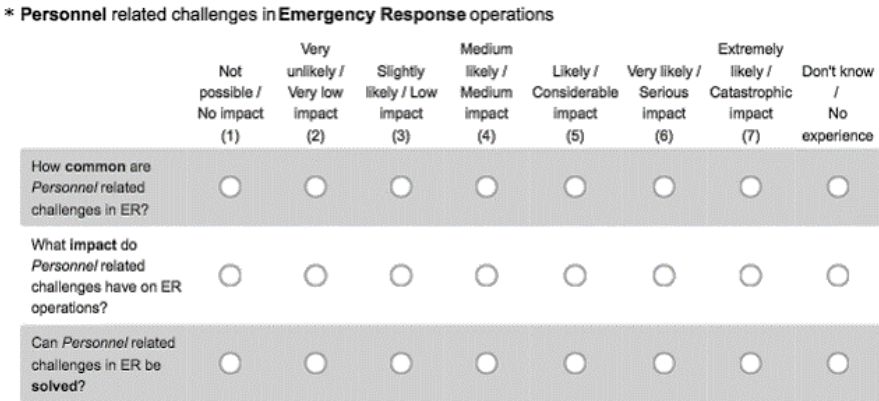


Figure 17: Excerpt from Questionnaire (Full Questionnaire available in Appendix C)

Furthermore, the participant’s level of experience in ER and OO is assessed by collecting individual information about i) the *number of years* working in humanitarian aid, ii) the *number of ER operations* involved in and iii) the *number of OO operations* involved in. In order to be considered in the final result, a respondent must have selected more than zero years of experience in any type of operation. Thus it is ensured that only those responses are included in the evaluation that have been given by practitioners with experience in both types of operations who therefore know about the differences between the respective requirements and challenges.

The questionnaire has been sent to all 523 current members of the UNHCR Greece operation, the unit of analysis in this case. Due to the aforementioned high workload of the employees and the significant share of local resources in the operation with limited or no experience in OO, the response rate has been low with 19 valid answers. Nevertheless, the results are presented and analyzed in the following chapters (four and five) as the *Challenges Assessment Framework* (Figure 13) represents a new contribution to humanitarian logistics research which deserves the chance to be explained and illustrated by means of a concrete example. Beyond that, this research can be seen as a pilot study for further research in this field.

3.3 Data Analysis

In this paragraph the process pursued during the analysis of the data and insights, which have been gathered in the course of the single case study in Greece, is explained. Aspects regarding the search and review of scientific literature, which constitutes the first phase of the *Research Process* (see Figure 19), have been discussed extensively in Chapter 2 and are therefore excluded from the explanations below. Hence, the data analysis activities described in this paragraph begin after the interviews with humanitarian practitioners have been conducted.

When analyzing the data collected throughout a case study, researchers need to ensure that their analysis goes beyond the mere description and classification of observations. In fact, it is important to identify patterns and understand the underlying reasons and conditions for their existence (Miles and Huberman, 1994). One technique to be applied in this regard is *Pattern Matching*, as described by Yin (2009), where researchers compare empirical-based patterns with predicted patterns as for example identified in the course of the initial literature review (Yin, 2009). The following analysis approach has been pursued in this study:

- 1) Comparing interview notes with audio records and summarizing all relevant information from each interview. Matching of discussed core challenges (CC) and RCCs to thirteen categories from the extended *Challenges Framework* (Figure 8 plus external 'Community/Public' category, discussed in Chapter 4.1.2).
- 2) Comparing all challenges discussed per category and identifying the set of two or three most commonly discussed CCs and respective RCCs for each category. Creating overview tables including those 21 internal and 17 external CCs, their RCCs and the interview partners addressing them (similar to Tables 10 and 12).
- 3) Merging findings from interviews (overview tables as discussed before) with *comparable* findings from literature review. (Note: Not all findings from literature review could have been matched with interview findings. Therefore, the analysis builds on the findings from the case study, presented in Chapter 4, to ensure a structured comparison and assessment of challenges and their criticality in humanitarian operations.) Creating summary overview table including all relevant CCs, their RCCs, the interview partners (practitioners) and literature sources (authors) discussing them, their criticality in different contexts as perceived by interviewees and the solutions discussed by practitioners and literature (see Excel data file).
- 4) Applying *Challenges Framework* to show interrelations of combined challenges from literature review and case study (Figure 24).
- 5) Analyzing findings from questionnaire: Filtering out inappropriate responses given by respondents who have stated zero years of experience in either type of operation (ER/OO).
- 6) Applying *Challenges Assessment Framework* to illustrate criticality of challenge categories (Figures 25 and 26). Comparing i) *probability of occurrence*, ii) (negative) *impact on the operation* and iii) *probability to overcome* category-related challenges or *mitigate* their negative impact in ER and OO operations. Computing *Challenge Values* for each challenge category. Creating two tables (ER/OO respectively) indicating the criticality of internal and external challenge categories and showing *Challenge Value* ranking (Tables 13 and 14). Thus, identifying the most critical challenge categories in ER and OO.

- 7) Applying UN/UNHCR risk management policies and tools to suggest strategies for addressing challenges according to their criticality levels (corresponds to *Challenge Value* computed in Step 6).

3.4 Trustworthiness of the Research

In this part, the aim is to present how the quality of research has been secured in this study. Validity and reliability are of particular importance in case study research. In this regard, the reliability of research lies in the ability to replicate it and in the degree to what the findings are independent from the accidental characteristics of the research, basically the trustworthiness of the data collection (Boesch et al., 2013). Thus, reliable research has to be repeatable by other researchers showing similar results. Research validity, in turn, is often divided into three dimensions, *internal validity*, *construct validity* and *external validity*. They are further explained in the left column of Table 8 below. Beyond that, the table describes how the reliability as well as the different dimensions of validity have been secured in four different phases of the study – when designing the study, when selecting the case, during the data gathering process and with regard to the data analysis.

Table 8: Validity of the Study (modeled after Reuter et al., 2010)

Validity and Reliability Addressed Throughout the Course of Research				
Reliability/Validity Criterion	Research Phase			
	Design	Case Selection	Data Gathering	Data Analysis
Reliability (demonstrating that the operations can be repeated, with the same results)	Develop case study protocol.	Selection of case based on an actual emergency operation which is clearly defined.	Shared interview guide and material used during the interviews, shared questionnaire. → Replicability.	Insights from both literature and interviews have been compared. Moreover, the internal results from the interviews have been checked for patterns to identify similar answers.
Internal Validity (establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships)	N/A	Accessibility to representable case → Possibility to gather valid data.	Multiple informants used during the case study.	Internal pattern matching for all interview results. Then triangulation and exploring patterns of the results with literature, observations and to some extent also with the questionnaire. Two authors analysing the data and constantly challenge the analysis.
Construct Validity (establishing correct operational measures for the concepts being studied)	Same definitions of constructs (e.g. ER/OO), obtained from literature, used during whole study.	N/A	Triangulation of data collection: interviews, direct observations and questionnaire.	Constraints identified in literature have been partly tested/verified/extended during interviews and with the questionnaire.
External Validity (establishing a domain in which the study's findings can be generalized)	Same definitions of constructs, obtained from literature, used during whole study.	A clear definition and explanation of the case is presented in Chapter 3.2.2.	Comparison with earlier findings from literature. Presented interview guide and questionnaire.	N/A

In order to secure the trustworthiness of this predominantly qualitative study, the triangulation in data gathering has been essential. “By combining multiple observations, theories, methods and data sources, [researchers] can hope to overcome the intrinsic bias that comes from single-methods, single-observations, and single-theory studies” (Patton, 2002, p.555). Figure 18 by

Yin (2009) explains the importance of triangulation in *data collection* to increase the trustworthiness of results in case study research. According to Yin (2009), addressing multiple sources of evidence creates the ability to do multiple measures of the same phenomenon. The realization of triangulation in this study can be retraced in Chapter 3.2.4 and also in Table 8.

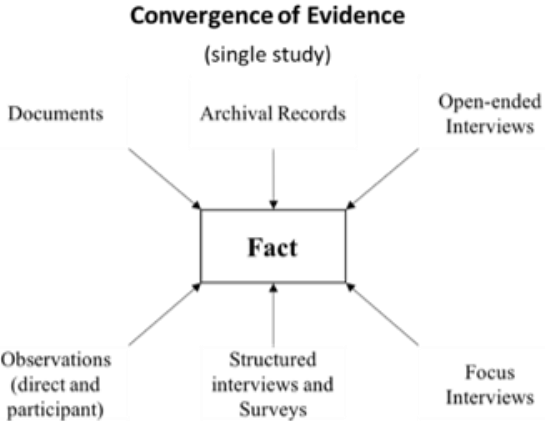


Figure 18: Convergence of Multiple Sources of Evidence (Yin, 2009)

3.5 Research Process

Phase	Method	Data Collection	Data Collection Method	Output	Answer RQ
I	Mixed methods study	Literature Review Lund, Sweden	Predominantly Systematic Literature Review	Comprehensive List of Challenges Challenges Categorization Framework Interview Guideline for Phase II	RQ 1 RQ 2
		UNHCR Single Case Study In-Depth Field Study, Greece	Interviews: - Structured - Semi-structured Observations Meetings Internal Documents Questionnaire: UNHCR Greece	Refined Framework of Challenges Including: - Additional Challenges - Additional Challenge Category - Root Cause Challenges Risk Assessment of Challenge Categories in ER vs. OO - Possibility of Occurrence - Impact on the Operation - Possibility to Overcome/Mitigate	RQ 1 RQ 2 RQ 3
		Analysis Lund, Sweden	Data Analysis Method Cross-referencing of Interview Answers Comparison between Findings from Literature and Case Study Transfer of quantitative Questionnaire Results into visual Overview to display Criticality of Challenge Categories in different Contexts (i.e. ER and OO)	Challenges Framework Combining Literature Findings and Case Study Findings Challenges differentiated between ER/OO RCCs impacting the different challenges 2 Challenge Category Criticality Rankings (1 per ER and OO) Unveiling the most critical challenge categories in ER and OO Preliminary Decision Support Tool	RQ 1 RQ 2 RQ 3

Figure 19: Overview of Research Process (Christofferson and Müller, 2017)

4. Findings from the In-Depth Field Study with UNHCR in Greece

In this chapter, the research findings obtained during the field study with UNHCR in Greece are presented in a structured way that allows the reader to comprehend which results have been generated from the interviews, observations and from the questionnaire. In the first section, the findings from the interviews and observations related to the *Challenges Framework* (Figure 8) are discussed. The internal and external part of the framework are presented separately thus providing detailed explanations of *selected* core challenges (CC) as well as the related root causes obtained from 17 interviews where over 160 challenges have been discussed in total. In the second section, the findings related to the *Challenges Assessment Framework* (Figure 13) are presented. They have been obtained from an online questionnaire, sent to UNHCR practitioners involved in the Greece operation, and are presented in two bar diagrams indicating internal and external challenge categories respectively.

4.1 Interview Findings and Observations related to the Challenges Framework

To begin with, it has to be remarked that during the interviews the response rate for accurate assessments of challenge criticality in different contexts – especially *natural vs. man-made disasters* – has been comparatively low overall. The reason for this lies predominantly in the aforementioned lack of experience in different contexts among a considerable number of interviewees. Furthermore, time limitations during the interview sessions (still emergency situation in Greece) have led to a certain neglect of different contexts in order to collect more challenges, gain a deeper understanding of interrelations and focus on the distinction of ER and OO as the main purpose of this study. Apart from that, the following insights have been collected throughout interviews and observations conducted during the case study in Greece. They are summarized and visualized in Figure 20.

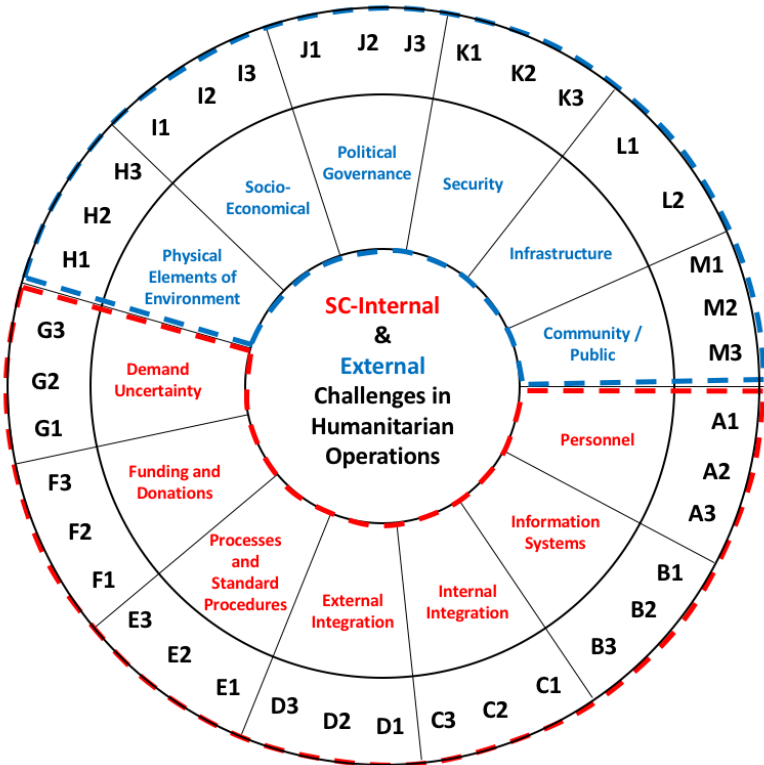


Figure 20: Overview of Interview Findings (Christofferson and Müller, 2017)

Figure 20 shows the different challenge categories both internal and external to HOs and the SCs they operate in. The twelve categories introduced in Chapter 2 of this report have been amended by a thirteenth category (*Community/Public*) in order to include potential influences of the host community and public opinion leaders such as the media into the analysis. For each category two or three CCs have been identified and encoded with a letter-number combination (e.g. *Personnel*: A1, A2 and A3). All identified CCs and a number of underlying RCCs *internal* to the SC are presented and described in Table 10, while the CCs and RCCs related to the *external* environment can be found in Table 12.

An observation that has been made during the course of the interviews is, that *twice as much* challenges have been discussed with regard to HOs and the SCs they operate in (i.e. internal) compared to the external environment of humanitarian operations. This becomes apparent when comparing Tables 9 and 11 presented in the beginning of Chapters 4.1.1 and 4.1.2 respectively.

4.1.1 Challenges internal to HOs and the SCs they operate in

Table 9 provides an overview of the seven internal challenge categories identified in Chapter 2. Beyond that, the number of challenges discussed per category as well as the number of interviewees discussing them are compared. The fourth column gives information about the official job titles of interviewees discussing the respective challenge category in the organization.

A total of 109 challenges internal to HOs and the SCs they operate in have been discussed. It has to be noted, however, that the cumulated number of 109 challenges discussed among the seven internal categories does not mean that all of them are completely different and independent from each other. Hence, in many cases different interviewees have been discussing a set of largely similar challenges with regard to the same challenge category, sometimes using different examples or discussing them in different contexts. However, after a thorough comparison of all challenges discussed per category, the authors have identified the set of three CCs – including their underlying RCCs – that have been discussed by most interviewees for each internal category. They are presented in Table 10. Beyond that, a detailed explanation of all categories, including selected challenges, is given below. The same process has been pursued for external challenge categories and is presented in Chapter 4.1.2.

Table 9: Overview of Internal Challenge Categories covered during Interviews

Category	Number of Challenges discussed	Number of Interviewees discussing Challenges	Practitioner Job Titles in the Organization
Personnel	16	7	Field Safety Advisor; Programme Officer; Assistant Representative (Ops); Mental Health Activity Manager (MSF); Snr. Programme Assistant; Snr. Supply Assistant (2); Supply/Procurement Assistant
Information Systems	9	3	Supply Officer; Snr. Technical Officer; Snr. Field Assistant (2); Snr. Programme Assistant
Internal Integration	9	7	Snr. Field Assistant (2); Mental Health Activity Manager (MSF); Associate External Relations Officer; Snr. Supply Assistant (1); Snr. Supply Assistant (2); Associate Programme Officer (Donor Relations); Supply/Procurement Assistant
External Integration	21	8	Field Safety Advisor; Assistant Representative (Ops); Snr. Field Assistant (1); Mental Health Activity Manager (MSF); Snr. Programme Assistant; Snr. Supply Assistant (2); Snr. Supply Assistant (1); Snr. Inter-Agency Coordination Assistant
Processes & Standard Procedures	10	6	Snr. Technical Officer; Field Safety Advisor; Assistant Representative (Ops); Mental Health Activity Manager (MSF); Associate External Relations Officer; Snr. Supply Assistant (2)
Funding & Donations	28	10	Supply Officer; Programme Officer; Assistant Representative (Ops); Snr. Field Assistant (1); Mental Health Activity Manager (MSF); Associate External Relations Officer; Snr. Supply Assistant (1); Associate Programme Officer (Donor Relations); Snr. Inter-Agency Coordination Assistant; Supply/Procurement Assistant
Demand Uncertainty	16	9	Supply Officer; Snr. Technical Officer; Field Safety Advisor; Programme Officer; Assistant Representative (Ops); Mental Health Activity Manager (MSF); Snr. Supply Assistant (2); Snr. Inter-Agency Coordination Assistant; Supply/Procurement Assistant

Personnel

In this category a total of 16 challenges have been discussed by seven different interviewees. Among them, the CC “*high level of personal stress*” (A1). Six different practitioners have stated the negative effects of stress that humanitarian workers are exposed to during an operation. Observations that have been made in the open-plan office at UNHCR in Athens throughout several occasions also support the insight that humanitarian workers are exposed to diverse stressful situations which not everyone can handle equally well.

The perception of a *high level of personal stress* among humanitarian workers is not really surprising since they are working in an *emergency* response situation where a constant high quality of work is expected from them in view of demand uncertainty and only very limited response time. Other reasons (thus root causes, RCC) for personal stress lie in the uncertainty about the own future. *Short-term contracts for employment in HOs* that only last for several months thus complicating the forward planning in terms as simple as “*Where am I going to live in three months? Will I be able to sign a rental agreement with such short terms and periods of notice? Will I be able to bring my family? Where do we live and will my children have to change school every six months?*” have been discussed repeatedly. Apart from that, an expat humanitarian worker’s residential status in the country of service also often depends on the duration of their employment. When the employment ends, the expat worker usually has to leave the country. However, even during their assignment in the crisis region, expats might face significant administrative hurdles, especially when their work permission / visa has been issued inappropriately by local authorities thus requiring expats to periodically leave and re-enter the

country of service. Aspects like this also contribute to a perceived uncertainty about the personal future which can create high levels of stress for an individual and eventually effect the work this person is entrusted with to support the operation.

Finally, personal stress can also have its cause in a lack of confidence regarding communication with other actors involved in the humanitarian operation – partners, local authorities or beneficiaries. In this context, lack of individual problem solving skills as well as language barriers can have a significant negative impact. The latter can cause problems when helping POCs, if humanitarian workers are not able to properly explain what they (can) do to help or what rights POCs have. Even translators are not always able to understand and speak every regional dialect of a people – a problem that has been observed during several field visits. This can create stress for both the humanitarian worker and the POC. In the worst case, the stress on the part of the POCs might turn into aggression and violence against humanitarian workers.

Information Systems

One *Information Systems*-related challenge discussed by four different humanitarian professionals is the “*unclear description of (non-food) items in the ERP-system catalogue*” (B3). The difficulty lies in keeping track of available supplies such as the type of supplies and the number of items available on stock per product. In this context the example of a European textile corporation has been discussed during several interviews. This company had donated a large amount of clothes to UNHCR in Greece for distribution to POCs arriving from the Middle East. Unfortunately, UNHCR could not make good use of those in-kind donations.

“[...] I think one big reason was due to technical challenges, the ERP-system. In our ERP-system, when we are tracking the different donated items, it should be very much accurate and relate to what really is existing physically in the warehouse.”

Supply Officer, UNHCR Greece, 2017

When entering all donations into the tracking system for accountability purposes, specific in-kind purchase orders (POs) need to be prepared electronically in order to track the donated items appropriately. Referring back to the example of the clothing items donated by the European textile corporation, the following mistake has been made (simplified example). Among others, 300 items have been donated to meet the needs of female POCs: 100 pairs of trousers, 100 shirts and 100 scarfs. When entering the donation into the system, three separate lines have been created in the corresponding PO in compliance with the PO process. However, the different products (trousers, shirts and scarfs) have been mistakenly stored under the same product ID and product description “*women clothes*” in the ERP-system instead of creating a new product ID for every new line. Consequently, when creating a stock report all three lines characterized by one identical product ID and description add up to *one* line indicating “*300 units of women clothes*” available on stock. Meanwhile no member of *Supply* unit has been able to tell with certainty how many trousers, shirts and scarfs have been on stock ready for distribution.

“Everyone is now wondering what is this ‘women clothes’?”

Supply Officer, UNHCR Greece, 2017

With this as an example, it becomes apparent how much impact this challenge can have on the operation. In the actual case the donation has been significantly larger than 300 units. The identified root causes to this challenge appear twofold. First, the time pressure aspect during an *emergency response* situation induces humanitarian workers to hastily enter newly arrived in-kind donations into the ERP-system in order to immediately indicate their availability thereby causing such careless mistakes. The second potential RCC describes a more critical deficit internal to the organization. An overall *silo thinking mentality*, manifested in a *lack of “supply thinking”* in other units, can lead to the aforementioned inefficient management of in-kind donations. For example, the profound knowledge about how supplies and/or donations need to be processed in order to be seamlessly integrated into the ERP-system is essential for units responsible for fundraising. Better knowledge about the process allows them to assess the value of promised donations before the physical delivery to the HO warehouse(s). If the use of a donation appears minimal but comes with considerable organizational effort, these units might even reject a donation in exceptional cases.

Internal Integration

To this category nine challenges have been discussed by seven different practitioners during the interviews. One of them is the perceived “*significant re-work / extra work required from executing units (e.g. Supply) during late stages of a process (e.g. procurement)*” (C2). This challenge appears to be of high topicality since it has been addressed by numerous interviewees. Beyond that, it has been the occasion for a multi-hour training seminar that the authors have attended at UNHCR’s Athens BO (branch office) on 22 March 2017. The seminar, which has been arranged and hosted by *Supply* unit, was aimed at explaining supply processes (i.e. the procurement process) and demonstrating responsibilities throughout the process to colleagues from other units (in this case *Administration* unit) thus the *requestors* of a service. It has been part of a series of training events with the aim of increasing the overall understanding of supply processes and the significant share of requestor responsibilities (especially with regard to product specifications) in order to achieve higher process compliance. Non-compliance with existing processes, usually arising from the aforementioned *silo thinking* phenomenon characterized by a lack of awareness for other colleagues’ work procedures, can lead to leaving out or lapsing important preparatory steps (e.g. technical evaluation). This causes significant extra-work for both *Supply* unit and the requesting unit which would have to re-work their request in order to meet the process requirements. Another form of process non-compliance lies in the circumvention of prescribed procedures and entities, for example when making contact with potential suppliers. This constitutes a particular delicate stage in the procurement process of any HO. HOs are usually spending money that has been donated by private or governmental donors (i.e. taxpayer money). Because of that, they are obliged to follow strict rules and procedures in terms of transparency and accountability. In order to ensure maximum correctness in this regard, requestors are not allowed to make direct contact with potential suppliers. Instead, the order must be tendered publicly by a central department – the *Supply* unit in the case of UNHCR. In this way collusions and the risk of corruptibility of humanitarian workers can be largely avoided and the spending of donated money on the most competitive bid is assured. This “detour” through *Supply* unit apparently has the potential to slow down the process from the viewpoint of the requestor which is why process non-compliance is an issue particularly in ER operations when the speed of deliveries is crucial.

Apart from that, it has become apparent that different units within the organization are unaware of the high share of responsibilities they have along the (procurement) process. Contrary to the general assumption that sees *Supply* in charge of almost the entire process and its related sub steps, *Supply* only handle around 50 percent of all tasks while important preparatory work, such as the aforementioned definition of product specifications or its technical evaluation, falls within the competence of the requesting units and departments. Hence, this situation is a clear example for challenges regarding coordination, collaboration and communication among units within an organization.

External Integration

With regard to *External Integration*, eight out of seventeen interviewees have discussed a total of 21 challenges. Besides problems caused by local implementing partners or the general duplication of activities, leading to waste of resources and unmet needs in other areas of concern, the most commonly mentioned challenge relates to the host government. More specifically, to the “*lack of government coordination of relief actors and efforts*” (D1).

According to the interviewed practitioners, this challenge on the one hand stems from a general uncertainty about the overall coordination responsibility. Normally, the coordination on country-level is done by the *Humanitarian Country Team* (HCT) which consists of a *Humanitarian Coordinator* (HC), who is a qualified professional in the country approved by the *Inter-Agency Standing Committee* (IASC). In many cases the HC is the current *UN Resident Coordinator* in charge of coordinating the development efforts of all UN bodies in a country who is also accredited by the host government. Moreover, the *UN Office for the Coordination of Humanitarian Affairs* (OCHA) and further organizations with a significant operational relevance for the in-country relief-efforts are involved in the HCT. Even the host government and donors might be invited to participate in the HCT (Building a Better Response, 2014). This forum jointly leads the relief efforts in the affected country. However, in the Greece operation the situation is different. UNHCR and other UN agencies such as UNICEF are not granted any official status in the country by the host government. Therefore, their abilities to take over coordination responsibility are extremely restricted. Although UNHCR, unlike the Greek government, has experience in handling large-scale refugee crises, the government in Athens prefers to claim full control of all decisions on Greek sovereign territory. However, as already mentioned, it lacks both the experience and human/financial resources required to appropriately execute the control and coordination functions. The result is a partly inadequate coordination of the multiple relief actors involved in the country and their joint efforts to alleviate human suffering.

Another challenge related to area of *External Integration* has been observed by the authors during a field-trip to a UNHCR warehouse outside Athens. As UNHCR procure large amounts of different products for distribution to POCs, a lot of contracts have to be negotiated and signed. It is therefore important to maintain a clear and regular communication with the different suppliers. The observed case, however, demonstrates the negative effects of a deficient communication thus leading to cumbersome and time-consuming double handling of activities in order to correct the initial mistake (compare D2). In this particular case, UNHCR had ordered a larger quantity of “*Baby Care Kits*” from a supplier in Jordan. The kits contained a pack of 20 diapers, a tube of wound-healing cream and wet wipes, all packed in handy green bags as

shown in Figure 21. After delivery to UNHCR’s central warehouse outside Athens, *Supply* unit has carried out a random sample inspection of kits shipped on different pallets. A representative result of this inspection is presented in Figure 21.



Figure 21: UNHCR Baby Care Kits (personal photographs (Müller, 2017))

The majority of examined kits contained torn diaper packages. The reason for this has become apparent when comparing the order placed by UNHCR with the original quantity of diapers indicated on the package. While UNHCR had placed an order for 20 pieces per “*Baby Care Kit*” the supplier had access to pre-packed diapers in quantities of 22 pieces per unit. However, instead of clarifying with UNHCR whether the additional two diapers per unit would be purchased as well in order to maintain the integrity of the sealed package, the supplier decided to strictly comply with the contract and removed two diapers from each unit by tearing them open and sending the torn packages to Greece. UNHCR representatives have stated that the organization would have accepted the additional two diapers without hesitation in order to guarantee the hygiene of the products as well as their swift delivery (since no additional handling would have been required to re-pack and seal the diapers). The delivered kits including torn packages, however, have been unacceptable for UNHCR. Not only because of hygienic reasons, but also in order to avoid negative media coverage in the event that it became known that UNHCR distributes substandard relief items to infants in need. For this reason and because of the significant size of the defective sample, UNHCR have decided to reject the whole shipment. The supplier had to collect all pallets from the Athens warehouse, control every single unit and replace/re-pack damaged packages before sending them back to Greece – at their own expense. This double-handling has cost the supplier additional money, thus reducing their profit, and UNHCR time until distribution of the “*Baby Care Kits*”.

Processes and Standard Procedures

The most commonly cited challenge related to *Processes and Standard Procedures* during the interviews has been a “*lack of process compliance*” which humanitarian workers experience in their daily work. However, as this challenge is also very much related to aspects of *Internal Integration*, it has already been elaborated under this paragraph. Beyond that, the “*hyper-formalization of procedures and formalities*” (E3) stands out among the remaining challenges that have been discussed in this context.

Hyper-formalization of procedures and formalities is a result of the high overall public and media attention for the operation and the HOs involved in it. This applies in particular for ER situations, when the media presence in the disaster area is high, although it has also been assessed challenging in protracted operations (i.e. OO) by interviewees. Humanitarian practitioners have emphasized the *high level of bureaucracy within HOs* especially with regard to transparency, documentation and certification which is strongly encouraged by donors.

Donors seek to receive as detailed information as possible about the projects their donated money is used for. Thus, in order to avoid spending money on more expensive or even dubious suppliers and to reduce the risk of corruptibility, which might result in negative media coverage regarding both HOs and donors, HOs are required to work as accurate as possible by documenting every decision. *Donor pressure* can therefore be considered the main driver of over-accurate thus *hyper-formalized* procedures and documentation in HOs making routine work more complex and time-consuming.

Funding and Donations

Funding and Donations-related challenges have been among the two most extensively discussed categories throughout the case study, together with *Political Governance*. However, it has to be noted that the challenges discussed in this context diverge widely in terms of content. While some interviewees have addressed the general *uncertainty* on the part of field workers regarding the mere existence and availability of funding (F1) (e.g. Programme Officer, UNHCR Greece, 2017), others have reported on the low usability of too much, yet *inappropriate in-kind donations* (F2) (e.g. Snr. Inter-Agency Coordination Assistant, UNHCR Greece, 2017). A prominent example for this, repeatedly stated by UNHCR practitioners in the Greece operation, has been the aforementioned case of a European textile corporation donating too revealing women's apparel for distribution to female POCs of Muslim faith. The underlying root cause to this challenge suggests a general lack of donor awareness of cultural differences in the needs of POCs.

Another aspect that is perceived as very challenging by humanitarian practitioners is the *influence of some large-scale donors on the selection of projects* at organizations they fund and on the *allocation of money* they provide (F3). While the latter is usually pursued through the common practice of *earmarked funding*, the influence on operational decisions of HOs is normally rarer. In the Greece operation, however, the two main donors are particularly powerful. In 2016 the European Commission has contributed around 90 percent of UNHCR's budget through its departments for civil protection and humanitarian aid operations (ECHO) and migration and home affairs (DG Home).

"[In the beginning] UNHCR set its own plan, its own strategy and fund-raised for this. But [in March 2016] the situation completely changed – with the EU-Turkey Statement and the closure of the border – and the donors were very much involved [...] not only on the ground but also with the [Greek] government itself. [...] ECHO took a role which was very much the role of an agency leading the response in Greece and also influencing very much what the humanitarian actors were supposed to do. [...] This was – as a fund-raiser – very much of a challenge, to make sure that we had activities which were first what we wanted to do and what we thought as UNHCR was important to do. But also what the donor wanted us to do."

Associate Programme Officer (Donor Relations), UNHCR Greece, 2017

The strong influence of few donors has been explained by three underlying factors (RCCs). First, the absence of a broad funding base with only a very limited number of major, *large-scale* contributors to the organization/operation leads to some sort of "*donor monopoly*" with a strong negotiating position on the donor side.

Second, the *political or economic interest* of donors in the crisis region. While some commercial donors pursue a humanitarian engagement within the scope of their *Corporate Social Responsibility* (CSR) goals in order to eventually improve their reputation which, in turn, potentially impacts their revenues, other governmental donors such as the European Commission follow a political agenda. Greece is an EU member state that is suffering from a severe financial crisis with a high unemployment rate, low salaries and pensions and massive debt to the EU which is both the administrative supranational umbrella organization and main contributor to humanitarian relief efforts in the country. Therefore, the European Commission seeks to fund projects that not only support POCs but preferably also contribute to the stabilization of the Greek state.

Third, in doing so, the donor (here European Commission) itself is exposed to strict supervision (thus pressure) from the media and national parliaments of the member states as the provided money to humanitarian aid in Greece is European taxpayer money. Hence, even donors are often committed to transparency regarding the activities they support and pass on this commitment to their implementing partners.

Demand Uncertainty

Most of the challenges discussed with regard to *Demand Uncertainty* in humanitarian operations appear to be related to the fact (and challenge) that the *assessment of demand* is *different in humanitarian SCs compared to commercial SCs* (G3). Nine interviewed practitioners have described an overall *lack of planning and demand forecasting* – especially on project or field level (G1). The main reason (thus RCC) discussed for this is the significant *volatility of external circumstances* in crisis situations. The uncertainty and volatility regarding the number of POCs arriving in the country (or region) compared to their movements both within and outward the country complicate the assessment of *how much* is needed of *what* sort of items in *what place* and for *how long*. In addition, the unpredictability about the temporal expansion of a crisis (long-term/short-term) further increases the difficulties in the determination of needs (e.g. summer or winter supplies needed for shelter and clothing). Finally, slow decision-making processes on the part of the host government, seeking to control all activities without having sufficient capacities (see *External Integration*), as well as long delivery lead-times to often remote crisis regions with poorly developed infrastructure need to be considered in demand assessments to bridge these time gaps.

Table 10: Internal Challenges discussed during Interviews in Greece

Category	#	Challenge	Root Cause	No. of People
Personnel	A1	High level of personal stress	<ul style="list-style-type: none"> - Uncertainty about personal future (employment) negatively affects personal commitment to projects - Short-term contracts (months) for employment in HOs - Uncertainty regarding personal legal status in country of service (→ issuance of inappropriate business permits for expat staff members that need to be renewed frequently by leaving and re-entering the country of service) - Lack of confidence in areas like communication (official communication and with POCs) and problem solving skills - Meet the expectations to deliver high quality work in view of demand uncertainty and lack of response time - Aggressions towards (field) personnel and general security risks faced in crisis regions 	6
	A2	Lack of experienced staff in humanitarian operations	<ul style="list-style-type: none"> - Difficulties and delays in bringing the "right" international staff (e.g. Arab staff when Arab refugees involved) into the country of service - Lengthy visa processes if UN Laissez-Passer (UNLP) is not available - No permanent work permits for expat staff (→ expats not coming at all or frequently leaving to renew business permit) - Staff of some nationality/religious group not welcome / not allowed to enter different countries (e.g. American citizens or people of Jewish confession in some Arab states) - Lack of (organization specific) training - Inappropriate recruiting strategies → experience often more important than diplomas and certificates 	6
	A3	Loss of information and (experience-based) knowledge	High staff turnover rates (→ including also exchange of supervisors) due to short-term/temporary contracts in HOs	3
Information Systems	B1	Conflicting information: Same aspects discussed with different results depending on the issuing party (e.g. number of camp inhabitants different according to police vs. NGOs)	<ul style="list-style-type: none"> - All parties (donor, host government, HOs) have own interests (political/economical) and often want their own numbers to support this interest (e.g. very high // very low numbers) - Goal: attract more funding 	3
	B2	Over-reporting: Too many reports and too much detail ("Reporting for reporting")	<ul style="list-style-type: none"> - Donor pressure to constantly provide detailed reports – but no clear definition <i>how</i> to report - Inconsistent reporting standards between different donors (i.e. no standard template) - Donors themselves being under pressure/supervision from superordinate authorities or media – especially when distributing taxpayer money 	3
	B3	Unclear description of (Non-Food) Items in ERP-system catalogue (e.g. "women clothes" as one position with one ID) → Difficulties to keep track of available supplies (type of supplies and number of items on stock per product)	<ul style="list-style-type: none"> - Hasty entry of in-kind donations into ERP-system to indicate availability - Silo thinking: lack of "supply thinking" in other units (e.g. fundraising) → Lack of knowledge how supplies/donations need to be processed for seamless integration into ERP-system 	4
Internal Integration	C1	Internal incomprehension and frustration in the organization	<ul style="list-style-type: none"> - Organization's budget depending on the region - Willingness to donate higher when crisis enters wealthy communities (e.g. European Union) - High budget for low number of POCs (e.g. Europe) compared to other operations by the same organization in different regions where humanitarian workers of the same HO have to work with much lower resources for higher numbers of POCs 	2
	C2	Significant re-work/extra work required from executing units (e.g. Supply) during late stage of a process (e.g. procurement)	<ul style="list-style-type: none"> - Silo thinking: lack of awareness for other colleagues' work procedures leads to leaving out or lapsing important preparatory steps (e.g. product specification/technical evaluation) - Non-compliance with existing processes (e.g. procurement) (- Unclearity about roles/responsibilities of other units within the same organization) → see 1st point 	5
	C3	Difficulties in having/maintaining a common and constant culture within the organization	High staff turnover rates	2

Table 10 continued

Category	#	Challenge	Root Cause	No. of People
External Integration	D1	Lack of government coordination of relief actors and efforts	<ul style="list-style-type: none"> - Unclear coordination responsibility - Lack of preparedness for large refugee crises on national (e.g. Greece) and supra-national (e.g. EU) level - Lack of host government capacities and capabilities while concurrently seeking to be in full control 	5
	D2	Duplication of activities leading to waste of resources and unmet needs in other areas of concern	Lack of coordination among humanitarian and other implementing partners	3
	D3	Lack of experienced (local) implementing partners	<ul style="list-style-type: none"> - No experience with humanitarian crisis situations - Language barriers - Low budget / different budgets among implementing partners - High level of bureaucracy at HOs regarding transparency, documentation and certification (→ high level of detail) - Assignment of local implementing partners through government officials not based on competence but personal relationships 	4
Processes & Standard Procedures	E1	Indirect communication procedures	<ul style="list-style-type: none"> - Unclearity about roles/responsibilities of other units within the same organization - Units speak too complicated between each other → functional silos (silo thinking within HO) 	3
	E2	Lack of process compliance (e.g. procurement process)	<ul style="list-style-type: none"> - Involvement and coordination of multiple instances between order on project/field-level and delivery to regional warehouse - Long supply/delivery lead-times - Length of processes - High level of bureaucracy within HO regarding transparency, documentation and certification to comply with donor requirements (→ high level of detail) - Lack of awareness in humanitarian world that Standard Operating Procedures (SOPs) really make work life easier 	5
	E3	Hyper-formalization of procedures and formalities	<ul style="list-style-type: none"> - Public and media attention - High level of bureaucracy within HO regarding transparency, documentation and certification to comply with donor requirements (→ high level of detail) 	3
Funding & Donations	F1	Uncertainty about availability of funding	<ul style="list-style-type: none"> - High-level negotiations and decision-making between HO and donor(s) → late information to unit/field level employees - Competition among humanitarian actors for the same donor money → decreasing funding while needs are increasing and more and more actors are getting involved - Announcement of US government to significantly reduce contribution to humanitarian aid 	4
	F2	Inappropriate in-kind donations	<ul style="list-style-type: none"> - Lack of donor awareness for cultural differences in the needs of POCs (e.g. too revealing clothes for Muslim women) - Lack of donor awareness for lifestyle, culture and law in the receiving country (e.g. condom distribution to male prison to prevent HIV spread in country where homosexuality is illegal) 	3
	F3	High donor influence on project selection and money allocation (e.g. through earmarked funding)	<ul style="list-style-type: none"> - Very limited number of (large-scale) donors to the organization/operation ("donor monopoly") - Political/economic interest of donor(s) in the crisis region - Donors themselves being under pressure/supervision from superordinate authorities or media – especially when distributing taxpayer money 	4
Demand Uncertainty	G1	Lack of planning / demand forecasting (especially on project/field level)	<ul style="list-style-type: none"> - Volatility of external circumstances - High level of bureaucracy (lengthy/cumbersome ordering process) within the HO - Long delivery lead-times - Slow government decision-making process 	9
	G2	Uncertainty about <i>how much</i> of <i>what</i> sort of items is needed <i>where</i> and for <i>how long</i>	<ul style="list-style-type: none"> - Volatility of external circumstances - Handover of projects 	7
	G3	Uncertainty and assessment of demand differ largely between humanitarian SCs and commercial SCs	Volatility of external circumstances: <ul style="list-style-type: none"> → volatility of POC influx → volatility of POC movements (in the country, leaving the country) → volatility of requirements (long-term/short-term; winter/summer) 	6

4.1.2 Challenges external to HOs and the SCs they operate in

Similar to Table 9, Table 11 below provides an overview of the five *external* challenge categories identified in Chapter 2. Beyond that, they have been complemented by a sixth category, *Community/Public* (see M1, M2 and M3 in Table 12), that has been identified during the case study. Furthermore, the number of challenges discussed per category as well as the number of interviewees discussing them are compared. The fourth column gives information about the official job titles of interviewees discussing the respective challenge category.

A total of 54 challenges emanating from the external environment of humanitarian operations have been discussed during the interviews conducted in Greece. Again, the set of three CCs and various underlying RCCs that have been addressed most commonly are presented for each category. The only exception to this are *Infrastructure*-related challenges. Due to the extremely small number of challenges discussed in this category, the authors have been unable to derive three individual CCs. Hence, only two CCs are presented (L1 and L2) in Table 12.

Table 11: Overview of External Challenge Categories covered during Interviews

Category	Number of Challenges discussed	Number of Interviewees discussing Challenges	Practitioner Job Titles in the Organization
Physical Elements of Disaster Environment	4	3	Supply Officer; Supply/ Procurement Assistant; Field Safety Advisor
Socio-Economical	8	5	Snr. Technical Officer; Supply/ Procurement Assistant; Snr. Supply Assistant (1); Mental Health Activity Manager (MSF); Field Safety Advisor
Political Governance	24	10	Field Safety Advisor; Supply/Procurement Assistant; Snr. Inter-Agency Coordination Assistant; Associate Programme Officer (Donor Relations); Snr. Supply Assistant (1); Associate External Relations Officer; Mental Health Activity Manager (MSF); Assistant Representative (Ops); Snr. Programme Assistant; Snr. Supply Assistant (2)
Security	10	5	Supply Officer; Snr. Field Assistant (2); Snr. Technical Officer; Snr. Supply Assistant (1); Field Safety Advisor
Infrastructure	4	3	Mental Health Activity Manager (MSF); Assistant Representative (Ops); Snr. Field Assistant (2)
Community/Public	4	4	Associate Programme Officer (Donor Relations); Snr. Inter-Agency Coordination Assistant; Snr. Field Assistant (1); Associate External Relations Officer

The most extensively discussed category by far is *Political Governance*, with 24 challenges addressed by 10 different interviewees. This represents almost half of the discussed challenges for the external categories. In contrast to that, *Physical Elements of the Disaster Environment* and *Infrastructure*-related problems and disruptions have been mentioned by less than 17 percent of interviewed practitioners. The new category *Community/Public* has been added to the framework due to corresponding observations that have been made during a field-trip to unofficial urban refugee housing in Athens (squats) and discussions with UNHCR Field Associates engaged in this environment. All six categories including selected examples are explained below.

Physical Elements of Environment

Challenges related to this category have been among the least commonly addressed issues throughout the case study with no more than four references by three practitioners. Originally intended to cover problems caused by extreme weather conditions or topographical characteristics of the crisis region that might affect its accessibility, only few of those aspects have been touched during some interviews. In all of these cases, however, extreme weather has played an important role. During the winter 2016/2017 both HOs and the Greek government have been surprised by the fiercest winter in many years which had come with persistent sub-zero temperatures and snowfall – even on the Aegean Islands – causing several casualties among POCs. Atypical weather phenomena in the crisis region, such as snowfall on the Greek islands, have been described as main root cause (RCC) for the *spontaneous, unforeseen need for specific products and measures* that are usually not prepared or pre-positioned in the region (H1) thus demanding short-term creative solutions. In the Greece operation this has meant to procure large quantities of heaters as well as weatherproof shelter (e.g. containers) and to distribute them all over the country in a short time.

In contrast to that, another interviewee has pointed out to the *detention of shelter material* (i.e. tent fabric) (H2) during summer months due to the sustained exposure to extreme sunlight, dust and low air humidity. Such extreme deviations between the weather conditions in the same region further complicate the selection of appropriate shelter and relief items, especially in light of uncertainty about the duration of the crisis.

Socio-Economical

Socio-Economical challenges in a humanitarian operation emerge from the interrelation of economic activity and social customs practiced in the society of the disaster region. Since the concept of socioeconomics in general leaves a lot of room for interpretation, practitioners have not been particularly consistent when discussing challenges in this regard. Therefore, no more than three explicit CCs have been derived from the interviews.

First, the socio-economical imbalance between local and international implementing partners within the same operation that leads to *envy and mutual incomprehension* (I3). The main reasons for this (RCCs) are usually the unequal working conditions among relief workers. Local staff, employed by local or governmental implementing partners, reportedly receive lower salaries less frequently than expats employed by international HOs – even for doing the same work. Furthermore, local staff is often accommodated under poorer conditions compared to their expat counterparts at international HOs.

Second, the *lost revenues in local tourism industry* as a result of a humanitarian crisis in the country or region (I2). This is particularly true for the economy of the Aegean Islands which is highly dependent on income generated by tourism. When the crisis had reached its peak in 2015, thousands of POCs arrived to the islands per day. The images of overcrowded initial reception sites and beaches covered in deflated rubber boats, life vests and personal belongings of refugees, as presented in the media, have largely deterred potential visitors from travelling to the Aegean since then.

Third, *corruption issues in the country of service* (I1). In the current *Corruption Perception*

Index (CPI) for the year 2016, issued by Transparency International (2017), Greece scores 44 out of 100 points, where a score of 100 indicates “very clean” countries. This result (Rank 69) is the second worst performance of all European Union member states, apart from Bulgaria, ranked 75th, and 34 places behind Botswana as the highest ranked African country.

Political Governance

Other than the challenges emerging from *collaboration* with government bodies as implementing partners (discussed under *External Integration*) the challenges addressed in this paragraph relate to political decisions and procedures within the host government of the crisis region and how they affect the work of HOs. Among all external challenge categories, *Political Governance*-related challenges have been discussed most extensively throughout the interviews. In fact, practitioners have particularly emphasized the high degree of *government interference in humanitarian operations* (J1) as well as the often *lengthy decision-making processes within the apparatus of state* (J2).

Several reasons (RCCs) for governmental interference in the work of HOs have been argued. In some cases local authorities refuse the import of items (relief items, equipment for search and rescue, etc.) into the country in order to *protect the local markets*. Hence, the import of rice or cereals might be restricted to avoid a decline in prices for local products. However, in many cases the products in question are unavailable in the country. Therefore *political reasons such as the diplomatic relations* between the receiving country and a product’s country of origin are decisive for import ban decisions. In fact, the same political reasons might also affect the host government’s willingness to accept POCs from another country or region. The greater the tensions between two countries, the less supportive their governments are when it comes to offer refuge to the other citizens. Beyond that, governments usually claim full control over all decisions made on their *sovereign territory* (see *External Integration*).

“UNHCR is not a body that precedes over the government, you know we help the government to make decisions and we advocate for the rights of refugees. But once the government says no and a ‘full stop’, that’s it! [...] The government was a challenge though they were hindering the very foundation of our existence in Sudan. To register 25 000 refugees took over one and a half years, compared to the two months it took to register over 50 000 in Greece. This is simply because the government did not let us do our job without their constant involvement as they did not agree on who was a refugee and who was not.”

Associate External Relations Officer, UNHCR Greece, 2017

Another government practice that has caused great dissent among UNHCR practitioners interviewed in Greece is the retention of 24 percent VAT on all humanitarian revenues in the country. Some of them have suspected this to be a method of generating profit through the investment of the money and siphoning off the interest before returning the VAT after a couple of years.

Finally, governments not only obstruct the work of HOs by imposing policies and restrictions, but also through delaying the decisions-making process. Owing to frequent changes of priority and the postponement of decision-making in order to evaluate all facts while at the same time lacking experience in handling refugee crises and qualified human resources in general,

governments are usually perceived to work unnecessarily slow.

Security

While, in theory, *Security*-related challenges comprise all potential dangers and threats that humanitarian workers but also relief items, equipment and HO facilities are exposed to, the focus of discussion throughout the interviews has been on staff security. Here, two major CCs are distinguished – *inflicted* (K1) and *self-inflicted security threats to humanitarian workers in the field* (K3). While the latter largely refers to individual carelessness (“*Won’t happen to me-mentality*”, Field Safety Advisor, UNHCR Greece, 2017) and unawareness of the dangerous surrounding environment, the inflicted security threats stem from more diverse RCCs. However, the awareness of self-inflicted security threats among humanitarian practitioners has to be increased. Especially since a high degree of individual alertness appears to be the easiest way to reduce accidents and losses of humanitarian staff. Addressing external (thus inflicted) threats, in turn, is potentially more difficult, as the underlying RCCs are more complex and HOs usually only have limited or no means to influence them. RCCs that have been discussed in this context are *religious affiliation, origin or skin color* of humanitarian workers which make them more easily recognizable as foreigners, thus lucrative targets for abductions and extortions for both political and financial motives.

A terrifying example of the substantial dangers faced by UN personnel in the field is the case of murdered Swedish politician and UN investigator Zaida Catalán. Catalán, an American colleague and a local interpreter had been kidnapped on 12 March 2017 on a mission to the Democratic Republic of Congo. Two weeks later all three had been found dead. Shortly thereafter, a video had appeared showing the execution and mutilation of the hostages (The Guardian, 2017). The case has remained in the authors’ memories as it emerged during the time of their internship at UNHCR in Greece. During subsequent conversations with practitioners at Athens BO, the more experienced UN officers among them have explained that the security threats have dramatically increased since they had started working for the UN system.

“Before, the UN flag was held up high in war zones – to secure our safety. During the night they would even illuminate it with spotlights. But nowadays, every gunman would just say ‘Thanks for making it easier to shoot you in the dark!’”

Snr. Supply Officer, UNHCR Greece, 2017

Apart from that, in exceptional cases, security threats to humanitarian workers may also arise from POCs. Especially when different factors such as language barriers and lengthy, complicated registration processes prevent them from moving on to their desired destination. Aggravated anxieties and frustrations may then erupt in aggressions against humanitarian staff.

Infrastructure

Infrastructure is among the two least discussed challenge categories of the whole framework. No more than three interviewees have addressed a total of four challenges which have been combined into the two CCs “*outdated infrastructure*” (L1) and “*access restrictions to certain (remote) areas*” (L2).

When talking about *outdated infrastructure*, practitioners have usually referred to the old transportation network in the country of service that has not been destroyed in the course of a

disaster but rather has been decaying for many years. Two interviewees have also remembered the poor conditions of the sewage system that they had encountered. In one case, when setting up a refugee camp on abandoned former military premises in Greece, the sewers had to be refurbished and significantly expanded in order to supply the camp with fresh water. In another case, during an operation in Southern Africa, even the housing area of humanitarian workers had been cut off water supply for days due to an outdated water pump had which eventually failed completely. The reasons for the poor conditions of local infrastructure have been the same in most of the cases. The local governments are lacking financial resources to afford restoration measures.

The access restrictions to certain areas (often located away from conurbations) which have been discussed as the other CC regarding *Infrastructure*, also relate to the aforementioned poor conditions of the local transportation network. In many developing countries roads are unsurfaced. During the rainy season, however, many of these roads are flooded thus impassable. In consequence, the distribution of relief supplies needs to be re-routed (if possible) or HOs have to resort to alternative – often very costly – means of transport (e.g. helicopters) for handling last mile deliveries.

Community / Public

Community and Public is a new category which has been identified by the authors at an early stage of the case study in Greece. On 29 March 2017 the authors accompanied a group of UNHCR Field Associates to so-called “*urban housing*” sites in the city center of Athens. *Urban housing* sites are basically abandoned buildings, such as schools or office buildings, which have been occupied by different leftist or anti-authoritarian groups in order to live in them. Since the beginning of the refugee crisis and especially since the closure of the *Balkan Route*, forcing refugees to stay in Greece, these squats have become home to a growing number of POCs. Although they are eligible for shelter in official camps (usually located in the countryside), some of them prefer to move to Athens and try to make a living there. While few of them get access to proper apartments by support of fellow countrymen (e.g. through Syrian associations in Athens) many other end up in *urban housing* supported by the aforementioned leftist/anti-authoritarian communities who provide them with food, voluntary education programs (e.g. language courses, day care) and to a certain degree also protection.

However, communities are not exclusively welcoming and do not always have a positive attitude towards immigrants. *Urban housing* sites occupied by refugees have been under attack by nationalist and right-wing groups repeatedly in the past. While some attacks have been verbal, other incidents included violent assaults using Molotov cocktails.

Finally, the media as major opinion leaders contribute significantly to the public perception of immigrants and refugees. Thus, positive and compassionate media coverage increases the chances for POCs to be treated respectfully and to find support from local communities. Apart from that, HOs themselves are very dependent on frequent positive reports about their work and contribution to resolve crises in order to attract donors to fund their programs. Negative and sensational reports, however, have the opposite effect.

Against this backdrop, three CCs have been identified from the interview contributions of four humanitarian practitioners. For example, the *lack of goodwill and sense for integration* on the

part of local communities and authorities (M2) has already been indicated above. It usually stems from a lack of understanding and empathy for the POCs and the situation they are in. This has been especially problematic in parts of the Greek society, which had been severely affected by the financial crisis, and therefore had little sympathy for the misery of refugees. Sensational news reports in the media have only increased the fear of foreigners coming and taking the rare jobs and welfare benefits.

Table 12: External Challenges discussed during Interviews in Greece

Category	#	Challenge	Root Cause	No. of People
Physical Elements of Environment	H1	Spontaneous/unforeseen need for products and measures atypical in the crisis region (e.g. heaters for refugee camps in Greece; need to re-locate refugees to houses)	Occurrence of atypical weather phenomena (e.g. heavy snowfall on Greek islands)	1
	H2	Detention of shelter (i.e. tent) material	Sustained exposure to sunlight, dust, wind and no humidity (especially in summer months)	1
	H3	Inappropriate shelter for prevailing weather conditions (e.g. inside temperature of tents in Greece during summer months between 50 and 60 degrees Celsius)	Distribution of cheap and simple tents from army supplies that were available to meet urgent needs for a short time	1
Socio-Economical	I1	Corruption issues in the country of service		1
	I2	Lost revenues in local tourism industry	- Large influx of refugees on tourist sites - Pollution of tourist sites with unused NFIs, packaging waste, life vests, deflated rubber boats	1
	I3	Envy and jealousy among implementing partners	- Local staff (employed by local/governmental implementing partners) receive lower salaries than expats employed by international NGOs for doing the same work - Local staff receive less frequent payments (e.g. 3 months not paid) than expats employed by international NGOs - Local staff accommodated under poor conditions compared to expats employed by international NGOs - Different working conditions (e.g. payment, pension) among different organizations (salary gaps among expats)	2
Political Governance	J1	Host government interference in humanitarian operation	- Protection of local market - Government does not want to lose control/influence on their sovereign territory - Government seeks to make national profit from crisis situation (e.g. Greek government withholds 24% VAT on all revenues made by HOs to collect interest for that money) - Government pursues own interests and seeks to support them by conducting own assessments and publishing own figures (e.g. number of refugees per site / in the country)	7
	J2	Lengthy/slow decision-making process at host government	- Frequent changes of priority - Postponement of decision-making - Wish to evaluate and control every activity - Lack of government capacities and capabilities - Lack of experience and preparation for large refugee crisis - Contradictory: decentralized vs. centralized decision-making	7
	J3	Tensions between host government and HOs	- Defending the rights and protecting the lives of refugees, that may be on the run for political reasons, leads HOs into political opposition to certain groups/ governments - Taking a position by showing a certain reaction or taking no position by showing no reaction exposes HOs to criticism from different directions - Negative experiences made during previous missions - HOs defining emergencies themselves and coming into a country without official invitation - Perception that HOs are only coming to help the needs of foreign POCs while the domestic population continues to suffer	4

Table 12 continued

Category	#	Challenge	Root Cause	No. of People
Security	K1	Inflicted security threats to humanitarian workers in the field	<ul style="list-style-type: none"> - Religious affiliation of humanitarian workers - Country of origin of humanitarian workers - Skin color of humanitarian workers - Stress of POCs (abusive environment, exhaustion, lack of understanding due to language barriers, length of processes keeping refugees from moving forward towards destination) - Humanitarian workers became lucrative targets for abductions and extortions (political and financial motives) 	4
	K2	Looting/robbery of relief supplies and vehicles	<ul style="list-style-type: none"> - Misery and lack of (good) prospects of local community - Armed groups seeking to convey a (political) message (e.g. "Leave the country!") or follow financial motives 	1
	K3	Self-inflicted security threats to humanitarian workers	<ul style="list-style-type: none"> - Carelessness of humanitarian workers and "Won't happen to me"-mentality - Unawareness of dangerous environment 	2
Infrastructure	L1	Outdated infrastructure	No financial resources from local government to improve conditions (e.g. water supply and sewer system)	2
	L2	Access restrictions to certain (remote) areas	<ul style="list-style-type: none"> - Destroyed infrastructure (e.g. flooded during rainy season) - Poor/simple existing local infrastructure (unsurfaced roads) 	3
Community / Public	M1	Public/community reluctance/reservation towards operation	<ul style="list-style-type: none"> - Lack of understanding and empathy ("We are suffering under a crisis and need support ourselves!") - No understanding of in-kind and earmarked donations → humanitarian aid comes from international humanitarian funds and is not deviated from/cannot be deviated to local population 	1
	M2	Lack of goodwill and sense for integration of local communities and local authorities	<ul style="list-style-type: none"> - Lack of understanding and empathy - Sensational news reports in the media create fear and do not create / even hinder the creation of empathy with POCs 	2
	M3	Negative public perception/media exposure ("bad publicity")	<ul style="list-style-type: none"> - Large supply with funding (e.g. taxpayer money) - Lengthy discussions and decision-making processes with host government causing casualties among POCs due to unmet needs (e.g. frozen in a tent during winter) 	2

4.2 Findings from the Questionnaire related to the Challenges Assessment Framework

Below the findings from the questionnaire with UNHCR practitioners are presented. For all challenge categories – internal to HOs and the SCs they operate in and external to them – the respective assessments of i) *how common* they are, ii) *what impact* they have and iii) if they *can be solved* are indicated, while the orange bar shows ER and the green bar shows OO results. This reflects on the three related dimensions in the *Challenge Assessment Framework* (Figure 13) which are i) probability of occurrence, ii) impact on the operation and iii) probability to overcome/mitigate the category related challenges.

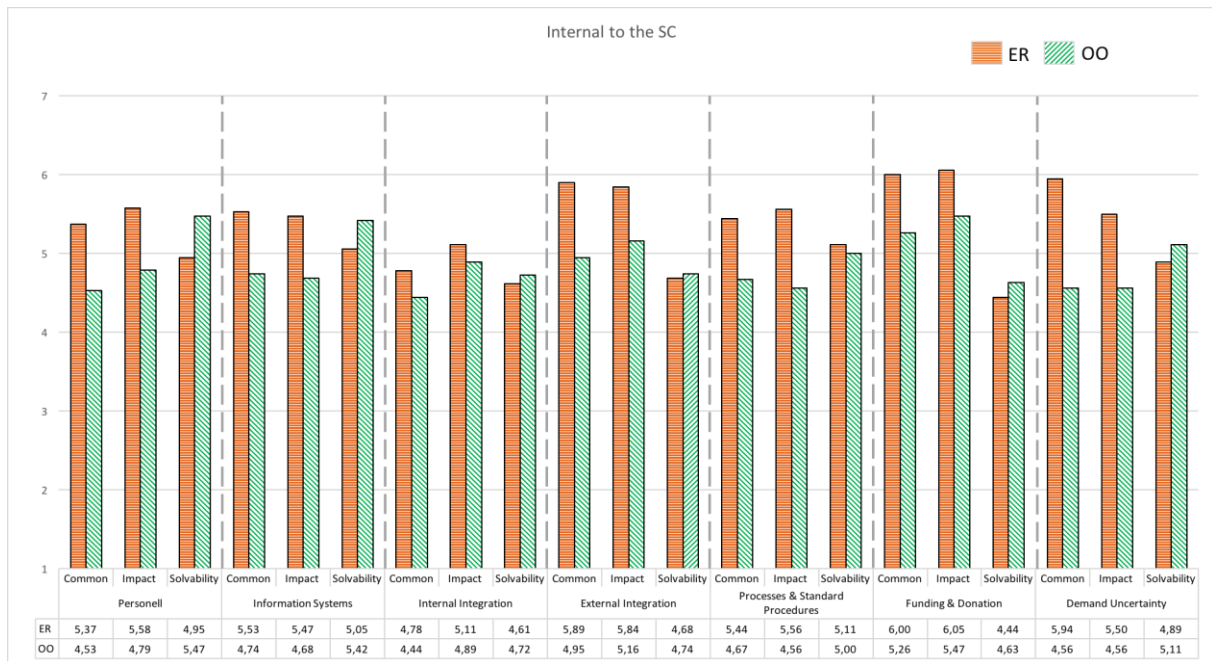


Figure 22: Results from Questionnaire with UNHCR Practitioners – Internal Challenge Categories

While the bars indicate the mean value from the total result for the respective internal challenge categories, the numerical values for each assessment can be viewed in the tabular data presentation at the bottom of each chart. As an example, for *Personnel*-related challenges the practitioners assess the probability of occurrence (*how common they are*) on average 5,37 in ER and 4,53 in OO. The impact on the operation is estimated on average 5,58 in ER and 4,79 in OO. Finally, the probability to overcome/mitigate (*can they be solved*) *Personnel*-related challenges amount to 4,95 in ER and 5,47 in OO on average. This means, that with regard to *Personnel* on average all values for ER range within *likely/ considerable impact* (5) and *very likely/ serious impact* (6) and for OO within *medium likely/ medium impact* (4) and *likely/ considerable impact* (5).

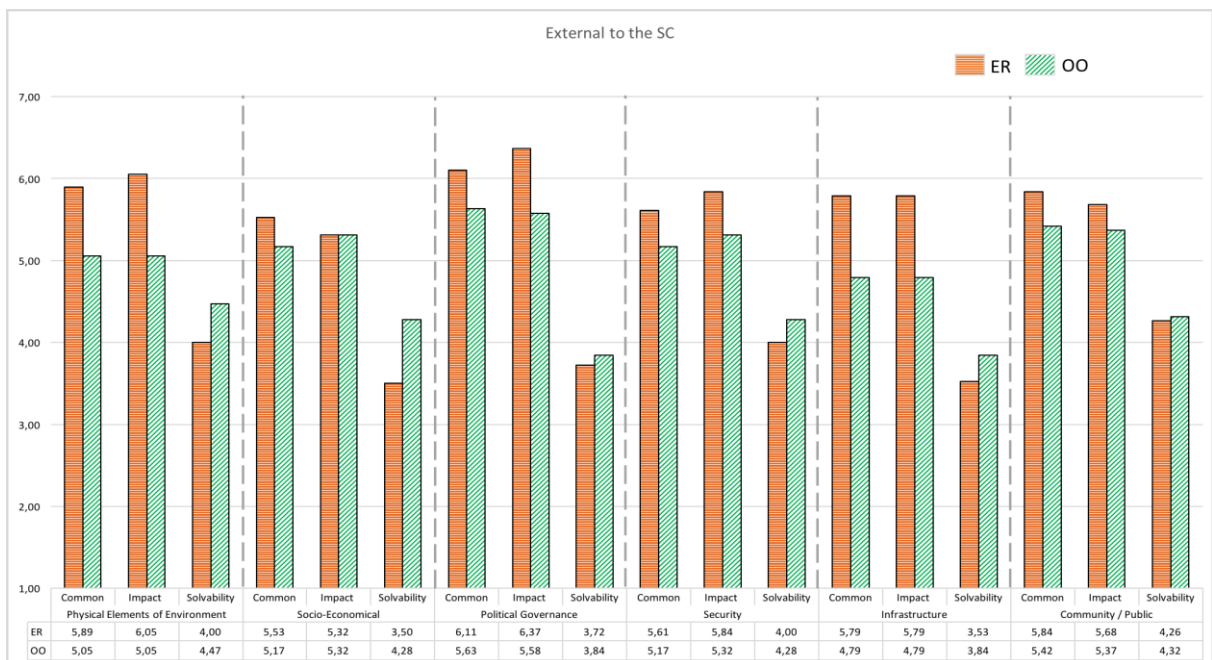


Figure 23: Results from Questionnaire with UNHCR Practitioners – External Challenge Categories

5. Analysis

In this chapter, the findings from the literature review (Phase I) and the empirical study (Phase II) are brought together in order to develop a comprehensive overview of challenges in humanitarian operations as perceived by UNHCR practitioners and scientific researchers.

Apart from that, the analysis results of the challenges assessment are presented unveiling the most critical challenge categories in ER and OO on the basis of nineteen practitioner responses to the online questionnaire conducted with UNHCR. Furthermore, by employing risk matrices well-established in the UN system and specifically in UNHCR, the authors propose an approach to address challenge categories at different criticality levels.

The structure of the following chapter supports this dichotomous presentation of analysis results. While the first section presents deliverables for RQ1 and RQ2, such as a *Combined Challenges Framework* composed from both literature and empirical findings (Figure 24), the second section answers to RQ3 by incorporating internal UN/UNHCR risk management policies as well as recent publications on the mitigation of SC risks in the humanitarian context.

5.1 RQ1 and RQ2 – Challenges, contextual Variations and Interrelations

In Chapter 2.1 a framework for categorizing challenges, internal and external to HOs and the SCs they operate in, has been presented and applied to the findings from the initial literature review of this study (Figure 9). The same *Challenges Framework* is further utilized to illustrate the *combined* findings from the aforementioned review of scientific publications and the empirical case study conducted with UNHCR in Greece. In accordance with research questions one and two, the *Combined Challenges Framework* (Figure 24) lists challenges in humanitarian operations and indicates how they vary – or conform – between ER and OO scenarios (RQ1). Furthermore, the interrelations of challenges are highlighted with the help of multiple arrows connecting RCCs from supposedly different areas (e.g. *Funding and Donations* or *Personnel*-related) to all relevant CCs as discussed by practitioners or in scientific papers (RQ2). However, it has to be mentioned at this point that the allocation of certain RCCs to the ER-side or the OO-side of the framework does not necessarily mean that those RCCs can be found in either context exclusively. Whenever it has been possible based on literature or practitioner evidence, RCCs have been assigned to one side according to higher relevance. Hence *low HO budgets* and *lack of funding* RCCs are perceived more critical in OO (Yadav and Barve, 2016; L’Hermitte et al., 2016; Jahre and Heigh, 2008) and can be found on the right side of the framework, while *Demand Uncertainty*-related RCCs such as *response generated demand* (Holguín-Veras et al., 2012) and *biased forecasting* (van der Laan et al., 2016) are deemed more disruptive in ER (van der Laan et al., 2016; Yadav and Barve, 2016) and consequently assigned to the left side. However, in many cases a clear separation has not been reasonable or even possible. Sometimes, neither authors nor practitioners have clearly assigned RCCs to either side (e.g. *donor pressure* or *local staff receiving lower salaries less frequently*) while CCs are distinctly positioned. In other cases, such as *over-reporting* (CC 2/ER, 1/OO – *Information Systems*) and *inflicted / self-inflicted security threats to field workers* (CC 1/ER/OO, 2/ER/OO – *Security*), when CCs are likely to appear in both ER and OO contexts, it has been particularly complicated to assign RCCs to one side of the framework explicitly. In those cases as described last, RCCs have been arranged in a pragmatic, space-optimizing way. This means that RCCs tend to be

positioned on the OO-side as fewer challenges have been discussed in this context exclusively. Consequently, RCCs found on either side of the framework also apply for the other side (i.e. in the other context) when related CCs are deemed critical in both contexts as discussed above. The authors are aware of this inaccuracy. However, the framework presented in this study does not claim encompassing preciseness in the depiction of the rather abstract concept of mutual challenge interrelations, presumably interpreted differently by various individuals and organizations. It has been developed in order to increase the awareness of RCCs in humanitarian operations and there are possibilities for further improvement which will be indicated in the concluding chapter.

Apart from that, the focus of the analysis is on the findings from the empirical study, thus challenges discussed by practitioners during interview sessions and observations made in Greece. Those insights are supported by references from literature. However, this does not mean that literature is of subordinate importance for this study. As explained in earlier chapters, insights from literature have been used to *develop* the Challenges Framework and thus have been largely considered in the conceptualization of the data collection approach. Furthermore, the knowledge about challenges described in literature has enabled the authors to ask precise follow-up questions during the interview sessions, give thought-provoking impulses in situations when interview partners have been unsure about how to interpret a challenge category and finally facilitated the identification of relations among challenges discussed. Whenever possible, the CCs and RCCs mentioned by practitioners have been compared to and merged with literature elaborations in a comprehensive Excel spreadsheet. Apart from CCs and RCCs including the respective authors and practitioners discussing them, this data file also contains *sporadic* practitioner estimates about diverging characteristics (i.e. criticality) of different challenges in various contexts such as i) different *regions/countries*, ii) different *cultures*, iii) different *sizes of operation* (i.e. the number of involved actors) and iv) different *time elapsed* since occurrence of the disaster (early/mid/late ER/OO). Finally, solutions to different challenges as proposed by practitioners and researchers are included.

Figure 24 visualizes an excerpt of the main findings (from the data file) with a focus on ER and OO as they form the core of this study. Moreover, the authors consider the inclusion of additional contexts or the solutions to be detrimental to the quality of the framework for two main reasons. First, due to the aforementioned incomplete data situation regarding the different contexts (especially natural vs. man-made disasters) no extensive comparisons can be made for all challenges or challenge categories. Second, by including additional contexts in the framework, coming along with additional boxes and arrows to clarify relations, the complexity of the figure would increase significantly and thus adversely affect its comprehensibility. Hence, it appears that the only feasible way of presenting *all* combined analysis results for CCs, RCCs, various contexts and solutions is in tabular form. However, due to the extent of 38 columns and 40 rows, the comprehensive data set not only exceeds the limits of presentability in this chapter but even in the appendix. The authors therefore refer readers, interested in all details, to an additional (Excel) data file which can be requested from the authors directly.

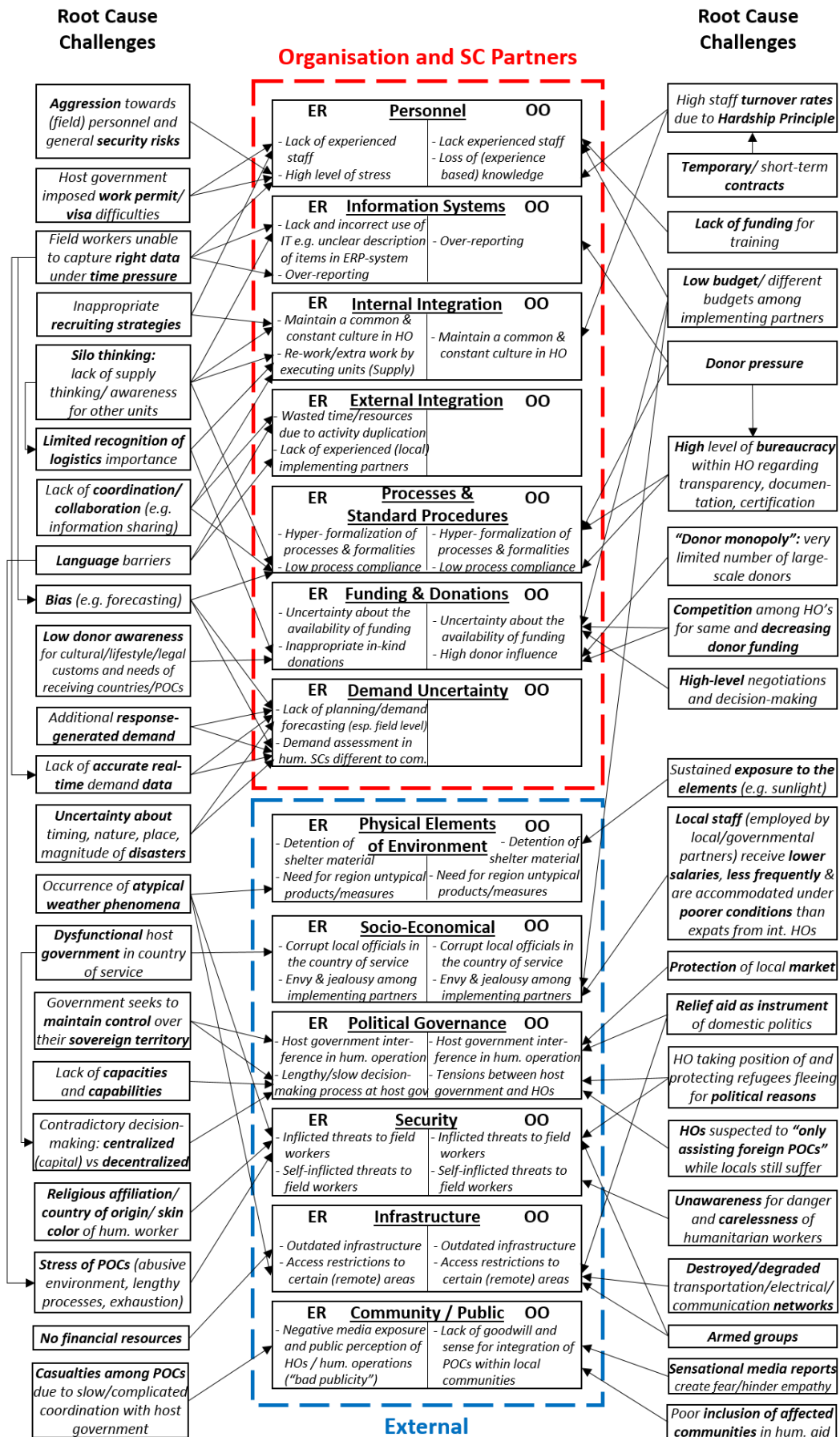


Figure 24: Combined Challenges Framework (from Literature Review and Empirical Study) (Christofferson and Müller, 2017)

Discussion of Framework Excerpts

Comparing both the *Challenges Framework* (Figure 9) presented in Chapter 2.1 and the *Combined Challenges Framework* (Figure 24) a number of differences become apparent. First, the aforementioned underrepresentation of OO-related challenges in extant literature, leading to more and larger gaps on the right side of the *Challenges Framework* as recognizable in Figure 9. In reality, however, practitioners tend to assign more challenges (both CCs and RCCs) to both ER and OO operations (e.g. *over-reporting*). This second observation – the higher number of challenges that have been rated critical in multiple contexts (primarily ER and OO) during the empirical study (15 in the combined framework compared to 5 in the literature-based framework) – might be explained by the difficulties to delineate the different contexts properly. Following the definitions of ER and OO discussed in Chapter 2.1, the current UNHCR operation in Greece has to be classified as ER. However, during multiple interviews, practitioners (e.g. Field Safety Advisor, UNHCR Greece, 2017) emphasized the almost stable character of the operation since the number of new arrivals to Greece has been reduced significantly (due to the *EU-Turkey statement* and the closure of the *Balkan Route* in March 2016) and the majority of POCs has been relocated into more weather resistant (containers) or even permanent (apartments) accommodations. Hence, the immediate emergency character of the operation has been alleviated which is why many interviewees referred to the Greece operation as *late ER*. This differentiation between late ER and early OO complicates a clear delineation of both contexts and might explain the increased allocation of challenges to both sides.

Third, the thirteenth challenge category in Figure 24 (*Community/Public*) has been added during the interviews, as discussed in the empirical findings chapter, in order to accurately include the challenges emanating from the host community as well as the public (including the media) into the analysis. This gap in extant research has thus been closed with this study, allowing for more accurate categorization of external challenges in the future.

Fourth, the number and degree of inter-RCC linkages is larger in the combined framework. The main reason for this is basically, that interrelations between challenges have not been investigated to a greater extent throughout previous studies with the exception of the noteworthy research by Yadav and Barve (2016). In interview situations, however, researchers are given the possibility to ask specific follow-up questions in order to uncover causalities and interdependencies which has facilitated a more accurate illustration of inter-RCC linkages in Figure 24. Although probably more linkages exist than have been uncovered in this study. One remaining issue in this regard is the limited connectivity of RCCs listed on opposite sides of the framework. However, as explained earlier there are cases when CCs appear in both ER and OO contexts and RCCs are positioned in a space-optimizing way, thus distributed on both sides. Although for example *the high level of bureaucracy within HOs* pursued in order to meet transparency and documentation requirements imposed by donors might potentially also be an issue in ER and further interrelated with CCs such as the *lack of experienced (local) implementing partners* (CC 2/ER – *External Integration*), who are unfamiliar with bureaucratic documentation and certification practices in HOs, the illustration of such connections appears restricted. The same applies to connections to other RCCs. While *deficient coordination and collaboration among implementing partners* can be traced back to the aforementioned *intra-*

organizational bureaucracy, this linkage unfortunately cannot be emphasized by arrows between the right and the left side of the framework. However, to the best of the authors' knowledge no better alternative solutions exist to illustrate challenges interrelations (both CCs and RCCs) in *different contexts*, such as ER and OO in this case.

The chosen presentation method in the *Challenges Framework*, using arrows to point out relations, reveals that *field workers' inability to capture the right data when working under time pressure* can be the source of multiple disruptions in a humanitarian operation. For example, time pressure in ER situations together with the aspiration to deliver high quality work while being aware of potential human losses due to own decisions can be responsible for *high levels of personal stress* among humanitarian workers (CC 2/ER – *Personnel*). Furthermore, both the *incorrect use of IT systems*, e.g. when entering unclear product descriptions such as “women clothes” for a vast selection of items ranging from trousers to shirts and scarfs into the inventory list of the ERP system (CC 1/ER – *Information Systems*) as well as constant *over-reporting* (CC 2/ER, 1/OO – *Information Systems*) can be traced back to *data capturing inability in the field*. According to a Senior Technical Officer at UNHCR Greece (2017), many reports are created as an end in themselves rather than to inform their recipients. There are numerous interest groups (e.g. donors) frequently requesting status updates but no common standards for reporting or instructions for humanitarian workers – especially those new to the humanitarian sector – on how to report concisely. As a consequence, irrelevant data is assembled in comprehensive reports that miss their original purpose.

However, it can also be shown that even other RCCs are attributable to *field workers' data capturing inability under time pressure*. Among them the *lack of accurate real-time demand data*, as direct consequence of the data capturing failure, negatively effects the ability to *plan or forecast demands* – especially on field level (CC 1/ER – *Demand Uncertainty*) and further adds to the generally *difficult demand assessment process in humanitarian SCs compared to their commercial counterparts* (CC 2/ER – *Demand Uncertainty*). Eventually, even problems and disruptions relating to *bias* of field workers, especially in terms of accurate *demand forecasting*, might potentially stem from *data capturing inability under time pressure* as well. Faced with uncertainty about the determination of correct demand/order quantities and the fear to risk human lives due to a lack of adequate supplies because of under-forecasting, field workers tend to order more than is likely to be needed in order to be prepared for unforeseen events (van der Laan et al., 2016). Since these practices are usually carried out in addition to logistical optimization methods pursued by the central logistics/supply unit (e.g. reorder points or optimal order quantities), large quantities of relief items are frequently dispatched to areas where they are not needed to the full extent. Instead, they rather congest the local supply network in the disaster region by taking up limited warehouse space and binding rare competent workforce. This is largely comparable to *material convergence* (as indicated in Figure 9) although the latter describes the phenomenon of mass arrivals of *useless, unsolicited* (in-kind) donations in the aftermath of a disaster thus creating congestions and complications in logistics handling/distribution systems and facilities in the disaster region (e.g. Holguín-Veras et al., 2012). Finally, over-forecasting leads to tied up HO capital in so-called “dead stock” (Jahre et al., 2016) which could be used more effectively elsewhere. *Biased forecasting* is therefore a prominent example for *lack of process compliance* (CC 2/ER, 2/OO – *Processes & Standard*

Procedures) and also contributes to the already mentioned unpredictability of demand assessment and forecasting in humanitarian SCs (CC 1/ER, 2/ER – *Demand Uncertainty*).

Having pointed out the complexity of mutual challenges interrelations, it seems advisable to first focus on the identification of RCCs that show numerous connections to other challenges and to develop strategies for counteracting them in order to approach the multitude of challenges in humanitarian operations in a systematic way.

5.2 RQ3 – Challenges Criticality Assessment

In this section the analysis of the answers to the online questionnaire, submitted by UNHCR practitioners involved in the Greece operation, is presented. For this purpose, the pursued analysis process is described based on selected examples (i.e. challenge categories) before the most critical challenge categories in ER and OO are unveiled in the end of Chapter 5.2.1. Finally, the results are embedded in the current UN/UNHCR risk management approach in order to derive solid management strategies, depending on the level of challenge criticality.

5.2.1 Challenges Criticality in ER and OO

The responses of nineteen UNHCR practitioners with sufficient experience in both ER and OO are included in the analysis of this study. Figures 22 (internal) and 23 (external) in Chapter 4.2 summarize the average assessment results regarding i) the *probability of occurrence*, ii) the (negative) *impact on the operation* and iii) the *probability to overcome* category-related challenges *or mitigate* their negative impact in the respective contexts. Following the design of the *Challenges Assessment Framework* (Figure 13) introduced in Chapter 2.2.3, these results should be presented in two three-dimensional matrices – one displaying the ER, the other one displaying the OO context – in order to facilitate mutual comparability. However, this initial endeavor has already been rejected at an early stage when it had become apparent that many points within the matrix, each representing a challenge category, would overlay due to the relative proximity of the mean values (all in the range between 3.5 and 6.5 of total 7.0). Hence, the informative value of the figures would be insignificant. The authors have therefore decided to plot the criticality of each challenge category individually. Two-dimensional matrices, indicating the *probability to overcome/mitigate* category-related challenges (x-axis) and the *probability of their occurrence* in the course of a humanitarian operation (y-axis), are supplemented by two color-coded discs of which the orange one indicates the impact on ER operations and the green one the impact on OO, accordingly. Figures 25 and 26 illustrate two exemplary challenge categories with rather “extreme” assessment results. Furthermore, both groups of challenges are represented by this selection – those *internal* to HOs and the SCs they operate in (Figure 26) as well as those emanating from the *external* environment (Figure 25).

Although the *two-dimensional-matrix* presentation method preserves a reference to the *Challenges Assessment Framework* defined in Chapter 2.2.3 (although strongly abstracted), it appears to be only conditionally suited to provide a comparison between the different categories and even complicates the compilation of an *exact ranking* of the most critical challenge categories in ER compared to OO.

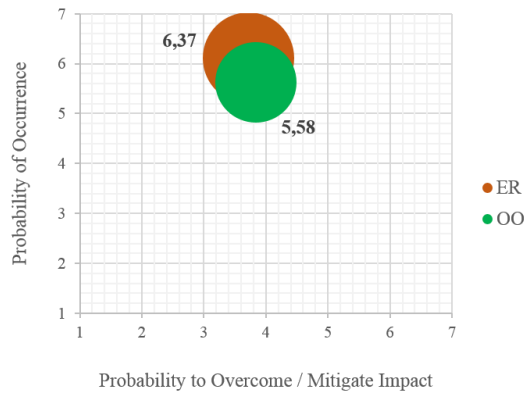


Figure 25: Political Governance-related Challenges (Christofferson and Müller, 2017)

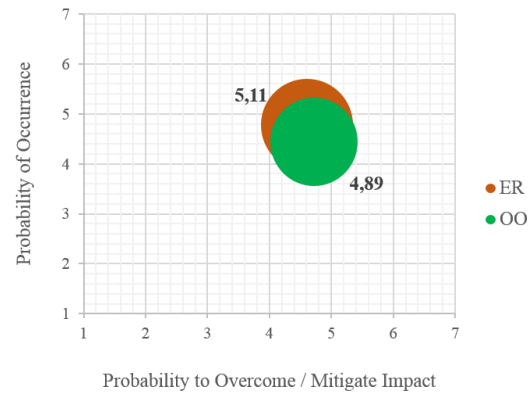


Figure 26: Internal Integration-related Challenges (Christofferson and Müller, 2017)

For this reason, the authors have decided to reject the *exclusively graphic* evaluation and presentation of results in favor of tabular display. However, in order to allow for sorting the different internal and external challenge categories according to their level of criticality in a humanitarian operation, an auxiliary value – the *Challenge Value* – needs to be computed first.

$$\text{Challenge Value} = \text{Likelihood of Occurrence} * \text{Impact on Operation} * \text{Likelihood to Overcome or Mitigate Impact}$$

It has to be noted, however, that the values assigned to the *Likelihood to Overcome or Mitigate Impact* (same as the aforementioned *Probability to Overcome or Mitigate Negative Impact on Operation*) differ from those assigned to the remaining dimensions *Likelihood of Occurrence* (same as *Probability of Occurrence*) and *Impact on Operation*. Although all three dimensions are measured using the same 1 to 7 Likert scale, one significant difference regarding the interpretation of assessment values needs to be considered. While for the *Likelihood of Occurrence* and the *Impact on Operation* the highest value (“7” – extremely likely / catastrophic impact) constitutes the most negative and unfavorable result for an operation, its meaning with regard to the *Likelihood to Overcome or Mitigate Impact* (“7” – extremely likely) is diametrical. Hence, in order to reflect the practitioners’ assessment correctly, the assigned values regarding the *Likelihood to Overcome or Mitigate Impact* need to be inverted in the following way before multiplying them with the *Likelihood of Occurrence* and the *Impact on Operation*.

Assessment Value:	1	2	3	4	5	6	7
Multiply with:	7	6	5	4	3	2	1

This guarantees that a high possibility/likelihood to solve a challenge (thus a positive characteristic) does not overly multiply the *Challenge Value* but rather keeps it low compared to other challenges with minor prospects of solutions.

Potential misunderstandings on the part of participants have been prevented by providing unmistakable explanations for each assessment that has been requested throughout the questionnaire (see full questionnaire in Appendix C). Apart from that, the review of all questionnaire responses suggests that the participants have been aware that the highest value (“7”) related to the *Likelihood to Overcome or Mitigate Impact* indicates the best chances of solving the respective challenge.

Applying the formula defined above, the *Challenge Values* have been computed for each respondent (nineteen respondents), challenge category (seven internal, six external) and context (two – ER and OO). The mean value has then been determined for each challenge category and context. This allows to contrast ER and OO and compare the criticality levels (corresponds to *Challenge Value*) of different challenge categories in each context as perceived by humanitarian aid practitioners. The results are summarized in the following tables (Table 13 and Table 14).

Table 13: Criticality of Challenge Categories in ER, sorted by highest Challenge Value, descending

Rank	Category	Challenge Value	Common	Impact	Solvability
1	Political Governance	171,28	6,11	6,37	3,72
2	Infrastructure	163,00	5,79	5,79	3,53
3	Physical Elements of Environment	148,26	5,89	6,05	4,00
4	Socio-Economical	144,11	5,53	5,32	3,50
5	Security	132,76	5,61	5,84	4,00
6	Community / Public	126,53	5,84	5,68	4,26
7	Funding & Donations	125,00	6,00	6,05	4,44
8	External Integration	118,74	5,89	5,84	4,68
9	Demand Uncertainty	98,22	5,94	5,50	4,89
10	Personnel	90,58	5,37	5,58	4,95
11	Information Systems	88,95	5,53	5,47	5,05
12	Processes & Standard Procedures	87,28	5,44	5,56	5,11
13	Internal Integration	82,00	4,78	5,11	4,61

Table 14: Criticality of Challenge Categories in OO, sorted by highest Challenge Value, descending

Rank	Category	Challenge Value	Common	Impact	Solvability
1	Political Governance	131,21	5,63	5,58	3,84
2	Community / Public	109,16	5,42	5,37	4,32
3	Funding & Donations	100,84	5,26	5,47	4,63
4	Infrastructure	99,42	4,79	4,79	3,84
5	Security	97,35	5,17	5,32	4,28
6	Socio-Economical	97,17	4,79	4,74	3,94
7	Physical Elements of Environment	87,79	5,05	5,05	4,47
8	External Integration	78,58	4,95	5,16	4,74
9	Internal Integration	73,61	4,44	4,89	4,72
10	Processes & Standard Procedures	62,28	4,67	4,56	5,00
11	Information Systems	56,68	4,74	4,68	5,42
12	Demand Uncertainty	56,67	4,56	4,56	5,11
13	Personnel	54,74	4,53	4,79	5,47

The entries of Tables 13 and 14 are color-coded. In compliance with the design of the *Challenges Framework*, red represents those challenge categories *internal* to HOs and the SCs they operate in while blue indicates *external* challenge categories. Apart from that, the columns *Common*, *Impact* and *Solvability* correspond to the simplified diction used in the questionnaire in order to avoid participant confusion due to overly complicated formulations, including vocabulary such as “probability” or “likelihood” that remind of statistical analyses rather than the *experience*-based assessment the authors have aimed at. For this reason, the *Common* column is representative for the aforementioned *Probability/Likelihood of Occurrence*, while the *Impact* column represents the *Impact on Operation* and the *Solvability* column stands for the *Probability/Likelihood to Overcome or Mitigate Impact* dimension of the initial Challenges Assessment Framework (Figure 13).

At first sight, it can be seen that external challenge categories are assessed more critical in both contexts. Among them *Political Governance* shows the highest *Probability/Likelihood of Occurrence* and the highest negative *Impact on Humanitarian Operations* of all challenge categories in both ER and OO. Apart from that, the *Probability/Likelihood to Overcome or Mitigate the Impact* of *Political Governance*-related challenges is deemed the third lowest in ER and lowest in OO (together with *Infrastructure*-related challenges). In essence this means that *Political Governance*-related challenges constitute a significant problem in humanitarian operations, regardless of emergency or prolonged assistance, where humanitarian workers see only marginal potentials for positive influence. The selection of appropriate strategies to deal with such, as well as other, unfavorable situations in the best possible way, is subject to further research. An outlook at the applicability of risk management strategies and tools well-established in the UN/UNHCR system is therefore given in the concluding section of this chapter.

The criticality of external factors is also made clear by the assessment of supposedly internal *Funding and Donations*-related challenges. They are deemed the second most probable disruption in ER operations (Common = 6,00) but since the *Probability/Likelihood to Overcome them or Mitigate their Impact* (Solvability = 4,44) is assessed higher than for all external challenge categories in ER, their overall criticality in ER operations ranks in the middle field. With a *Challenge Value* of 125,00 *Funding and Donations*-related challenges are the most critical internal challenges in ER and close to the least critical external challenge category, *Community/Public* (Challenge Value = 126,53).

In OO, *Funding and Donations*-related challenges are the third most common (Common = 5,26) disruption with the second highest impact (Impact = 5,47) on the operation. Therefore, they rank among the top three critical challenge categories in this context. The high criticality of *Funding and Donations*-related challenges in OO concurs with the findings discussed above. Like no other internal challenge category, *Funding and Donations* is dependent on external factors. Donations are managed within HOs and it is their task to attract funding and to comply with donor requirements. However, the actual money (or in-kind donations) comes from outside the organization where their influence on decision-making is restricted. Aspects such as donor pressure to constantly submit reports, the earmarking of funding for specific use or the announcement of the largest donor to humanitarian aid in the world, the United States of America, to reduce their contribution significantly (Associate Programme Officer (Donor

Relations), UNHCR Greece, 2017) are just a few, yet highly topical, examples of external factors impacting on the management of *Funding and Donations* in humanitarian operations.

Finally, the fact that external challenges are – without exception – perceived less likely to be overcome than internal challenges in either context, accounts for their high criticality in both ER and OO. This emphasizes the important role of solutions and mitigation strategies. If humanitarian workers do not see a chance to overcome a problem, they assess the respective challenge (or challenge category) accordingly. The results of this research have shown that humanitarian practitioners apparently do not see sufficient ways to overcome *external* challenges at the moment. It is therefore important to find solutions for these problems, emanating from the external environment, or at least strategies to mitigate their negative impact on the operation.

5.2.2 Managing Challenges in Humanitarian Operations

With challenge categories ranked according to their criticality in different types of humanitarian operations (i.e. ER and OO), the next essential step of the SCRM process (Figure 10) involves the selection of appropriate risk management strategies. Jahre (2017) has recently compiled a comprehensive list of SC strategies and compares their application in commercial and humanitarian settings (Table 4).

In order to propose a *structured* approach towards the selection of *appropriate* SC strategies, depending on the level of challenge criticality, the authors of this study have decided to apply elements of different risk management policies well-established in the UN/UNHCR system. For this purpose, parts of the *Security Risk Assessment* (SRA) included in the UN *Security Risk Management* process (SRM) are merged with the risk analysis approach presented in the UNHCR *Preparedness Package for Refugee Emergencies*. The applicability of the matrix derived from this fusion for the purposes of this study is then discussed and a *preliminary* decision support tool is presented for managing challenges in humanitarian operations.

“SRM is the process of identifying future harmful events (“threats”) that may affect the achievement of United Nations objectives. It involves assessing the likelihood and impact of these threats to determine the assessed level of risk to the United Nations and identifying appropriate response. SRM involves four key strategies, namely controlling, avoiding, transferring and accepting security risk. Security risks are controlled through prevention (lowering the likelihood) and mitigation (lowering the impact).” (UN, 2016, p.16)

Similar to common practice in commercial SCRM, discussed for example by Hallikas et al. (2002), Norrman and Jansson (2004) and Manuj and Mentzer (2008), *risk* is defined as follows in the UN/UNHCR system:

- *“The likelihood of a harmful event occurring and the impact of the event if it were to occur (Risk = Likelihood x Impact).”* (UN, 2016, p.16))
- *“The degree of risk [...] is called the level of seriousness of a potential refugee scenario. This seriousness is defined by the Impact of the scenario [...] multiplied by the Likelihood of the influx scenario actually occurring within a given timeframe.”* (UNHCR, 2014, p.2.5)

Four *key strategies* for managing risk to the UN system are discussed in connection with SRM (WFP, 2017).

- Accept:** The risk is accepted without having taken any mitigation measures before and with no further measures being required.
- Control:** The risk needs to be reduced to an acceptable level by implementing prevention and/or mitigation measures
- Avoid:** The exposure to the risk needs to be evaded by temporarily distancing potential targets (e.g. UN staff) from the risk.
- Transfer:** The risk is shifted to an insurance company or a sub-contracted implementing partner who can operate safely.

These categories rather appear to be high-level recommendations than case-related strategies. Therefore, further research is needed to accurately assign *specific* SC strategies, such as the ones presented by Jahre (2017) (see Table 4), to the aforementioned ACAT (Accept, Control, Avoid, Transfer) key recommendations. However, in the rest of this section, the authors discuss the potential integration of the ACAT concept into a challenges management approach. Apparently even for this solution further research is needed. For example regarding the rather vague concept of an *acceptable risk level* as indicated under the *Control* strategy above. The determination of acceptable risk in the UN system involves a complex process considering various factors such as the *Programme Criticality Level* of different activities which needs to be balanced against security risks faced by UN personnel involved in these activities (UN, 2016). However, the analysis of this process surpasses the scope of this report and might have to be subject to subsequent studies.

The following remarks are intended to illustrate the application possibilities of different UN/UNHCR risk management policies and tools. Used in combination with the ACAT strategies and extended by further, more specific SC strategies, this approach can be used as guideline to effectively manage challenges in humanitarian operations depending on their individual level of criticality.

The *Security Risk Analysis Table* is a two-dimensional matrix indicating the impact (x-axis) and likelihood (y-axis) of a threat and displaying particular risk levels in the intersections (Field Safety Advisor, UNHCR Greece, 2017; personal photography, Müller, 2017). In their *Preparedness Package for Refugee Emergencies* UNHCR (2014) propose a similar model. Their *Risk Matrix* also indicates the impact and likelihood of a (refugee) scenario on the respective coordinate axes. Beyond that, values on a scale from one to five (one: least likely/least impact and five: most likely/most impact) are assigned to the impact and likelihood stages. The *Seriousness of Risk* is determined by multiplying both values. Finally, depending on the value of the computed product, different levels of risk seriousness (also referred to as *risk levels* (UN, 2016)) can be defined (e.g. ranging from very low to unacceptable). Those risk levels, in turn, can be used to prioritize different risks and, when assigned specific mitigation measures (also *management/mitigation strategies*), also to provide guidance for management decisions. Figure 27 combines the two models discussed in this paragraph, highlighting the different color-coded risk levels.

Impact Likelihood	Negligible (1)	Minor (2)	Moderate (3)	Severe (4)	Critical (5)
Very Likely (5)	Low (5)	Medium (10)	High (15)	Very High (20)	Unacceptable (25)
Likely (4)	Low (4)	Medium (8)	High (12)	High (16)	Very High (20)
Moderately Likely (3)	Very Low (3)	Low (6)	Medium (9)	High (12)	High (15)
Unlikely (2)	Very Low (2)	Low (4)	Low (6)	Medium (8)	Medium (10)
Very Unlikely (1)	Very Low (1)	Very Low (2)	Very Low (3)	Low (4)	Low (5)

Figure 27: Combined UN Security Risk Analysis Table and UNHCR Refugee Emergency Risk Matrix (based on a personal photography (Müller, 2017) and UNHCR, 2014)

The underlying concept of the *Seriousness of Risk* is equivalent to the *Challenge Value* discussed in this report. Although the latter has been computed also taking into account the probability/likelihood to overcome or mitigate the negative impact of a challenge category. Therefore, in order to illustrate all *three* dimensions of the challenges assessment (occurrence, impact, overcome/mitigate) accurately, a potential *Challenge Matrix* equivalent to Figure 27 actually has to be a three-dimensional cube with a side length of seven units and 343 fields in total. This does not appear to be feasible. However, it is not needed either. The *Challenge Values* have already been computed (Tables 13 and 14) which is why the matrix is not necessarily needed any more. The *Challenge Values* should be rather assigned to the four *key strategies* (ACAT). The following classification in the style of a traffic light appears sufficient as decision support tool (Figure 28).

Avoid	CV 261-343	very high seriousness	Evacuate potential targets from challenge exposure.
Transfer	CV 174-260	high seriousness	<ul style="list-style-type: none"> • Shift risk to insurance company • Outsourcing
Control	CV 87-173	medium seriousness	<ul style="list-style-type: none"> • Strategic stock • Postponement
Accept	CV 1-86	low seriousness	No additional measures needed.

Figure 28: Preliminary Strategy Light (Christofferson and Müller, 2017)

The “*Strategy Light*” in Figure 28 only shows exemplary CV values (CV = Challenge Value) and management/mitigation strategies. However, further research is needed in order to determine the *optimal* sizes of the ACAT groups (determined by the size of the respective CV group) as for simplicity reasons in this example all groups are of (almost) equal size. Moreover, in this configuration only the *Control* and *Transfer* groups can be reasonably sub-divided into more specific strategies. The examples displayed in Figure 28 have been taken from Table 4 (thus Jahre, 2017). However, other strategies, such as *training* internal personnel and external implementing partners, have been discussed by several humanitarian practitioners (e.g. Snr. Supply Assistant (2), Field Safety Advisor, UNHCR Greece, 2017) and should be considered in this context too. By adding more SC strategies from Table 4 as well as solutions discussed by literature and practitioners (see Excel data file), the *Strategy Light* might be extended into a comprehensive decision support tool to be applied by humanitarian workers in the field and at headquarters.

6. Conclusion

The purpose of this study has been to develop a structured approach to challenges management in humanitarian operations.

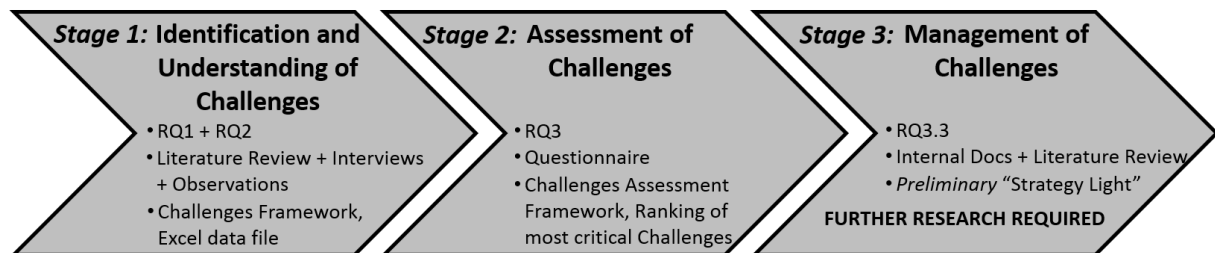


Figure 29: Challenges Management Process (Christofferson and Müller, 2017; inspired by the SCRM Process presented by Manuj and Mentzer, 2008)

For this purpose, a framework – the *Challenges Framework* – has been developed based on the findings from a comprehensive review of scientific literature in the field of humanitarian logistics, supply chain and operations management. This initial model has served as foundation for the interview guide that has been used during seventeen interview sessions with humanitarian practitioners most of which have been involved in the current UNHCR operation in Greece. However, in order to also include and compare experiences of humanitarian workers involved with NGOs, thus adding more value to the study results, an interview with a MSF practitioner has been conducted as well. The authors are aware that the inclusion of a single NGO representative does not allow to provide the full picture of challenges experienced by those kinds of organizations. Therefore, further research needs to be done, applying the suggested *Challenges Framework* in more NGOs, preferably with different mandates and ranges of service such as *food provisioning* or *children*. Furthermore, it needs to be considered to select primarily those organizations that are involved in different crisis regions all around the globe during both ER and OO, to allow for more differentiated assessments of challenges in various contexts. Also the inclusion of organizations of different size is important, since smaller HOs might be stronger affected by lack of qualified workforce and financial resources than larger (international or supranational) HOs falling back on well-established structures and networks. The latter appears to be particularly relevant as this study almost exclusively focuses on UNHCR, being part of the UN-system.

The comprehensive insights gained through the practitioner interviews have been supplemented by observations of humanitarian occupational routine both in field situations, when visiting refugee camps and strategic stockpiles, as well as in the head office (*Branch Office*) environment during internal training sessions and in the open-plan office. The empirical study has not only delivered significant input for the extensive compilation of core and root cause challenges as perceived by academic researches and humanitarian practitioners (see Excel data file) which constitutes a major deliverable of this thesis project. It has further inspired the extension of the initial *Challenges Framework* (Figure 8) by a thirteenth category (*Community/Public*) that has, as such, not been covered to greater extent by extant literature, to the best of the authors' knowledge. The enhanced *Challenges Framework* (Figure 24) together with the extensive Excel data file constitute the output of the first stage of the *Challenges Management Process* (Figure 29) depicted above.

Following the original SCRM process, the next step after the identification of risks would be the assessment and evaluation phase. The same applies for the *Challenges Management Process* submitted in this report. Stage 2 is entirely dedicated to answer on RQ3 and a new framework, intended to assess the criticality of challenges in humanitarian operations, has been developed (Figure 13) inspired by commercial SCRM tools. Although the graphical realization of the framework's three dimensions has turned out to be inexpedient in practice, the *Challenges Assessment Framework* serves as a *conceptual model* to emphasize the importance of taking into account *all three* dimensions in challenges assessment – i) the probability of occurrence, ii) the impact on the operation and particularly iii) the probability to overcome challenges or mitigate their negative impact on the operation. The latter appearing under-represented in reviewed SCRM literature. Fortunately, the graphical visualization is not needed for determining the criticality level of different challenges (or challenge categories as in this study). Instead, only the respective assessment values assigned to the individual dimensions (in form of the Likert scale numeric values) have to be multiplied in order to obtain the *Challenge Value*. This value appears useful to indicate and compare the criticality levels of different challenges (or challenge categories) and thus facilitates the creation of a ranking. These rankings of the most critical internal and external challenge categories in ER and OO contexts constitute the output of the second stage of the *Challenges Management Process*.

Similar to the original SCRM process, the third stage of the *Challenges Management Process* finally relates to the selection of appropriate management strategies. Within this stage, the authors propose *preliminary* findings to answer to the sub-question of RQ3.3 that seeks to identify ways to manage challenges in humanitarian operations. However, these examinations are not encompassing yet and require further research. What has been able to show is, that there are risk management policies and tools currently in use in the UN/UNHCR system which are similar to the challenges assessment and analysis process explained in Stage 2. Potential applications have been identified and a *preliminary* decision support tool – the “*Strategy Light*” – following the principle of a traffic light has been derived (Figure 28). The tool employs the four – color-coded – key strategy groups *Accept*, *Control*, *Transfer* and *Avoid* (ACTA) suggested in the UN Security Risk Management process (SRM) and the afore-calculated *Challenge Values* are assigned to each group. Thus, depending on the *Challenge Value* computed for a challenge category, the main strategy is either accepting the challenge and the impact it has on the operation, controlling it by e.g. building up strategic stock or training staff, transferring it to implementing partners or avoiding it completely, if the high level of criticality is disproportionate to the potential benefits of the operation. Further research is needed to accurately determine the sizes of the color-coded groups and to assign appropriate sub-strategies, for example the mitigation strategies collected by Jahre (2017) (Table 4), to the key strategies (ACTA) in order to suggest tailor-made solutions for the different levels of criticality computed in the previous stage of the *Challenges Management Process*.

Apart from the structured approach presented above, the study has also revealed a number of findings and provides valuable contributions to the field of humanitarian logistics research.

First, although the research project has been conducted with UNHCR, all frameworks as well as assessment and analysis approaches presented above are fully transferrable to other HOs. The internal and external challenge categories that have been identified throughout this project

are universal. However, depending on the examined HO (i.e. size, dispersion, mandate), the core challenges and root cause challenges discussed may vary from those presented in Figure 24, which only shows an excerpt of the extensive findings that have been obtained in the course of this project (compare Excel data file). Furthermore, the three-dimensional challenges assessment conducted by means of a questionnaire is applicable in the challenges/risk assessment process in various SC contexts, not only in humanitarian relief environments. In this regard, the design of the questionnaire can be used as a template for further surveys of larger scale. Beyond that, the presented formula for calculating the *Challenge Value* as an indicator of the criticality level of any internal or external challenge (or challenge category) is applicable without contextual restrictions just as the concept of matching individual solution strategies to predefined values.

Second, a mismatch appears between the numbers of internal/external challenges discussed by practitioners during interview sessions and the perceived criticality of those internal/external challenges as identified through the questionnaire. While *internal* challenge categories have been discussed twice as extensively as external challenge categories, almost all internal categories have been assessed less critical than any external category in both ER and OO contexts. (Except for *Funding and Donations*-related challenges which are perceived highly critical in OO; Table 14.) However, this mismatch does not have to be a contradiction. Many factors might have contributed to this phenomenon. First, the same (simplified) *Challenges Framework* has been presented to interviewees in the beginning of each interview session (see Appendix B). Apparently, internal challenge categories are presented in the upper part of the framework followed by the external categories in the lower part. Since most people start reading a document from the top, the majority of associations and memories related to certain categories might have appeared with regard to internal challenges. The authors have tried to counteract this tendency by explicitly asking interviewees for experiences with external challenges. However, the overall coverage of those categories has been lower compared to internal categories. Another plausible explanation for this phenomenon is the aforementioned low level of experience in different international operations among local UNHCR staff members. Since six out of seventeen interviewees have stated that the current Greece operation was their first engagement in humanitarian relief (see Table 6), their knowledge of challenges is confined to the Greek environment. However, compared to other operations in e.g. developing countries, many external factors such as security threats or poor local infrastructure are not as striking in Greece, being a European Union member state after all. Consequently, these local UNHCR staff members could not report about as many external factors as their more senior colleagues. In order to ensure informed assessments based on extensive experience in different contexts, only those responses to the *questionnaire* have been considered in the final analysis that fulfil the requirement of having participated in at least one ER and one OO operation. Hence, the following conclusion from the analysis of the valid questionnaire responses is well-founded.

External factors are perceived more challenging in both ER and OO than internal factors.

Among them, *Political Governance*-related challenges (e.g. host government policies, decision-making, slowness and disturbing interference in HO work) are perceived by far the most critical challenges in humanitarian operations, especially since many practitioners do not see much potential to overcome them. Furthermore, *Funding and Donations*, a supposedly *internal*

challenge category, is also perceived considerably critical with a *Challenge Value* of 125,00 in ER (most critical internal category) and particularly in OO where *Funding and Donations*-related challenges are ranked third among the most disruptive challenge categories. Due to the existential dependence on external sources to support their program, HOs run the risk of being/becoming dependent on large-scale donors pursuing their own – often politically motivated – agenda. The concept of “*political logistics*”, occasionally used by some humanitarian practitioners (Snr. Supply Officer, UNHCR Greece, 2017) and academic researchers when referring to “humanitarian logistics” therefore appears justified – despite its slightly sarcastic undercurrent.

Other Areas for further Research

The *Challenges Framework* presented in this thesis study can neither claim completeness nor absolute clarity about all dimensions of RCCs. However, it increases the awareness of the existence of RCCs which need to be identified and understood (Stage 1 of the *Challenges Management Process*) in order to make accurate assessments of their criticality (Stage 2) and eventually develop sustainable solutions (Stage 3) for current challenges in humanitarian operations. Preferably, a combination of the hierarchical TISM approach proposed by Yadav and Barve (2016) and the framework presented in this report should be developed in order to take different *tiers of RCCs* into account and to map them correctly (e.g. 1st Tier RCCs, 2nd Tier RCCs and 3rd Tier RCCs). This, however, requires further analyses of the collected core challenges and root cause challenges including the aforementioned *Total Interpretive Structural Modelling* approach. Instead of the bottom-up presentation method that has been chosen by Yadav and Barve (2016), the *Challenges Framework* of this study might be adapted accordingly, indicating first, second and third tier RCCs on either side (i.e. ER and OO context) of the framework thus extending the current presentation method of only one level of RCCs per side.

Apart from that and with regard to the second framework presented in this study, the *Challenges Assessment Framework* (Figure 13), few aspects need to be revisited or further researched throughout subsequent studies. First of all, with regard to the assessment of the criticality of different challenges (here challenge categories), the research presented in this report should be understood as a *pilot study*. For this research project, the input of nineteen respondents involved in the current UNHCR operation in Greece has been analyzed. Their eligibility to participate in the questionnaire has been accurately assured by requesting their involvement in at least one ER and one OO scenario thus allowing them to make informed evaluations of the scrutinized situations. However, there is a need for more data (i.e. larger data sets) to review and confirm the results of this challenges assessment with UNHCR practitioners. In doing so, as many and versatile HOs as possible, characterized by different sizes, mandates and geographical dispersion (i.e. local representations), should be involved in the assessment in order to increase the accuracy of results.

Finally, more research is needed in order to assess the criticality and interrelations of challenges (i.e. RCCs among each other and in relation to CCs) in *other contexts* apart from ER and OO which have been covered in this study. The authors’ attempts to induce interviewed practitioners to also make assessments regarding the criticality of challenges (discussed by them) in different contexts have not been fully successful. Therefore, the study might need to

be repeated with other HOs. In doing so, researchers should use the same challenge categories but ask participants specifically to explain the criticality of discussed challenges in:

- i) different regions/countries
- ii) different cultures
- iii) different sizes of operations (i.e. the number of actors involved)
- iv) different time elapsed since occurrence of the disaster (early/mid/late ER or OO)
- v) different types of disasters (man-made vs. natural).

However, potential researchers have to be aware that they will not receive the full assessment for every challenge discussed. Constraints regarding the timeslots that humanitarian workers are able to clear for interviews during relief operations as well as their individual experience in the different contexts to be assessed will always affect the extent and quality of interview findings.

7. References

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8. Appendices

8.1 Appendix A – List of Authors for Figure 9

Category	Authors to the Challenges	Authors to the RCCs
Personnel	Abidi et al. (2015); Baldini et al. (2012); Bealt et al. (2016); Kovács and Spens (2009); L'Hermitte et al. (2016); van der Laan et al. (2016); Kovács and Spens (2011); Majewski et al. (2010); Stapelton and van Wassenhove (2010); Sheppard et al. (2013); Goffnett et al. (2013); Maon et al. (2009)	Abidi et al. (2014); Dahl and Lindén (2016); Jahre and Heigh (2008); Kovács and Spens (2009); Majewski et al. (2010); Maon et al. (2009); Sheppard et al. (2013); Tatham and Pettit (2010); Tomasini and van Wassenhove (2009)
Information Systems	van der Laan et al. (2016); Yadav and Barve (2016)	Abidi et al. (2014); Kovács and Spens (2009); Majewski et al. (2010); Dahl and Lindén (2016); van der Laan et al. (2016)
Internal Integration	Holguín-Veras et al. (2012)	Akhtar et al. (2012)
External Integration	Balcik et al. (2010); Goffnet et al. (2013); Jahre et al. (2009); Kovács and Spens (2007); Majewski et al. (2010); Maon et al. (2009); Noori and Weber (2016); Holguín-Veras et al. (2012); Rodon et al. (2012); Sandwell (2011); Serrato-Garcia et al. (2016); Sheppard et al. (2013); Sienou and Karduck (2012); Simpson and Hancock (2009); Simpson et al. (2009); Starr and van Wassenhove (2014); Tatham and Pettit (2010); Tatham (2012); Tatham and Spens (2016); Tatham et al. (2017); van der Laan et al. (2016)	Abidi et al. (2015); Adivar and Mert (2010); Apte (2009); Balcik et al. (2010); Balcik and Beamon (2008); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); van der Laan et al. (2016); Yadav and Barve (2016)
Processes & Standard Procedures	Adivar and Mert (2010); Baldini et al. (2012); Bealt et al. (2016); Jahre and Fabbe-Costes (2015); Kovács and Spens (2009); Kovács and Spens (2011); Majewski et al. (2010); van der Laan et al. (2016)	Adivar and Mert (2010); Balcik et al. (2010); L'Hermitte et al. (2016); Kovács and Spens (2009)
Funding & Donations	Abidi et al. (2014); Alem et al. (2016); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Holguín-Veras et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); Majewski et al. (2010); Maon et al. (2009); Yadav and Barve (2016)	Abidi et al. (2014); Alem et al. (2016); Apte (2009); Balcik et al. (2010); Dahl and Lindén (2016); Holguín-Veras et al. (2012); Jahre et al. (2016); Kovács and Spens (2009); Majewski et al. (2010); Maon et al. (2009); Sandwell (2011); Starr and van Wassenhove (2014); Toyasaki and Wakolbinger (2011)
Demand Uncertainty	Adivar and Mert (2010); Anaya-Arenas et al. (2014); Holguín-Veras et al. (2012); L'Hermitte et al. (2016); van der Laan et al. (2016); Yadav and Barve (2016)	Abidi et al. (2015); Alem et al. (2016); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); van der Laan et al. (2016); Yadav and Barve (2016)
Physical Elements of Environment	Balcik et al. (2010)	Akhtar et al. (2012); Abidi et al. (2015); Apte (2009); Alem et al. (2016); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Kovács and Spens (2009); L'Hermitte et al. (2016); van der Laan et al. (2016); Balcik et al. (2010); Yadav and Barve (2016); Holguín-Veras et al. (2012)
Socio-Economical	L'Hermitte et al. (2016)	Balcik et al. (2010); Holguín-Veras et al. (2012); Yadav and Barve (2016)
Political Governance	Balcik et al. (2010); Holguín-Veras et al. (2012); Kovács and Spens (2009)	Balcik et al. (2010); Holguín-Veras et al. (2012); Kovács and Spens (2009); Yadav and Barve (2016)
Security	Baldini et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); Maon et al. (2009); Noori and Weber (2016); Starr and Van Wassenhove (2014); Van Wassenhove and Pedraza Martinez (2010)	Baldini et al. (2012); Bealt et al. (2016); Komrska et al. (2013); L'Hermitte et al. (2016)
Infrastructure	Abidi et al. (2015); Akhtar et al. (2012); Alem et al. (2016); Apte (2009); Balcik et al. (2010); Baldini et al. (2012); Bealt et al. (2016); Holguín-Veras et al. (2012); Kovács and Spens (2009); L'Hermitte et al. (2016); Majewski et al. (2010); Maon et al. (2009); Sandwell (2011); Serrato-Garcia et al. (2016); Starr and Van Wassenhove (2014); van der Laan et al. (2016); Van Wassenhove and Pedraza Martinez (2010); Yadav and Barve (2016)	Balcik et al. (2010); Baldini et al. (2012); L'Hermitte et al. (2016)

8.2 Appendix B – Interview Guide



Department of Industrial Management and Logistics
Engineering Logistics
Johan Christofferson & Erik Müller
(Master Students and Interns at Supply Unit UNHCR Greece)

Challenges in Humanitarian Operations Interview Guide

Place & Time	
Name of Interviewee	
Title/Affiliation	
Name of Interviewer	

1. Introduce ourselves, purpose and background of this study and thank interviewee for their time and contribution to the study.

- a. The purpose of this interview is to increase our understanding of internal and external challenges to humanitarian operations (in terms of problems/disruptions), how they differ between short-term and long-term operations as well as other contexts and eventually how they might be overcome in the future.
- b. We will present to you 7 organizational and SC partner-related factors and 5 external factors affecting humanitarian operations and ask you to think of potential challenges related to each factor. We also kindly ask you to assign each challenge to one of the three categories – Emergency Response (ER), Ongoing Operation (OO) or Emergency Response AND Ongoing Operation – depending on your experiences.
- c. We define Emergency Response (ER) as...
...short-term measures taken in the aftermath of a disaster (such as transportation of supplies and equipment for search and rescue and material for emergency repair of infrastructure);
as well as
...short-term recovery activities (such as management of donations and volunteers, damage assessment, provisioning of temporary housing, restoring lifelines and clearing debris).
- d. We define Ongoing Operations (OO) as...
...long-term recovery activities that may continue for years after a disaster and that support affected populations to return to normality or improved quality of life (such as restoration of infrastructure, medical supplies for routine disease prevention and food supplies for hunger and malnutrition prevention).

The aspect of development aid is excluded from this study!

- e. Furthermore, we seek to identify whether – and if, to what extend – challenges differ between various contexts such as regions, local cultures, size of operations, time elapsed in operation and among different types of disasters (man-made vs. natural).
- f. We would like to discuss as many of the 12 aforementioned factors with you as possible since we seek to capture various insights/experiences (i.e. from different departments/units) with the different areas we identified. However, we would like to encourage you to set your own focus on the area(s)/topic(s) you would like to discuss in more detail due to your role and experiences.
- g. Is it okay if we tape the conversation to be able to transcribe it later? (A summary of the transcribed interview will be sent to you for verification and comments. If you like, we will also send you the final report after completion.)
- h. Do you have any questions before we start?

2. Interviewee’s role in the current UNHCR operation in Greece and professional background.

- a. What is your role in the current UNHCR operation in Greece?

- b. How many years of experience in this role? _____
- c. What professional background do you have? (e.g. military forces, private sector, humanitarian sector [other UN agencies, NGOs or GOs (i.e. national disaster agencies)])

- d. What regions/countries have you been working in / sent to?

- e. Employed by UNHCR, and due to its mandate, you are involved in operations in the aftermath of man-made disaster. Do you also have any experiences with natural disasters in previous work for another UN agency or NGO / GO?

- f. How many ER operations have you been involved in? _____
- g. How many OO operations have you been involved in? _____

3. Presentation of organizational and SC partner-related factors and discussion of challenges, where to find them (ER, OO, ER/OO), different contexts (e.g. region, culture, operation size) and strategies/approaches to overcome/mitigate them.

a. What challenges related to 'Personnel' would you like to discuss?

Challenge: _____

Did you ever come across this challenge (personally or meeting)? Yes No

Would you say this challenge you mentioned is more challenging/critical in...

... ER operations ... OO operations ... both ER and OO

Would you say that this challenge has different characteristics in ...

...different regions / countries: _____

...different cultures: _____

...different sizes of operations (i.e. # of involved actors):

...different time elapsed since beginning of operation

early ER / OO mid ER / OO late ER / OO

...different types of disaster (i.e. man-made vs. natural):

Solution(s) / Approach: _____

- b. What challenges related to 'Information Systems' would you like to discuss?
- c. What challenges related to 'Internal Integration' (i.e. different organizational functions) would you like to discuss?
- d. What challenges related to 'External Integration' (with e.g. suppliers, commercial/ implementing partners) would you like to discuss?
- e. What challenges related to 'Processes and Standard Procedures' would you like to discuss?
- f. What challenges related to 'Funding and Donations' would you like to discuss?
- g. What challenges related to 'Demand Uncertainty' would you like to discuss?
- h. Do you think that we missed any important organizational and SC-related factor?

4. Presentation of external factors and discussion of challenges, where to find them (ER, OO, ER/OO), different contexts (e.g. region, culture, operation size) and strategies/approaches to overcome/mitigate them.

- a. What challenges related to the 'Physical Elements of the Disaster Environment' (weather/ geography) would you like to discuss?
- b. What challenges related to the 'Socio-Economic' setting of an operation (e.g. logistics resources/ skills/fuel price) would you like to discuss?
- c. What challenges related to the local 'Government' of the affected country would you like to discuss?
- d. What challenges related to 'Security' would you like to discuss?
- e. What challenges related to local 'Infrastructure' (transportation/communication/energy) would you like to discuss?
- f. Do you think that we missed any important external factor?

5. Is there anyone else in the organization that you think we should talk to concerning the topics discussed above?

6. Finish. Thank you and contact information.

- a. Thank you for your participation, this was really valuable! To finish we would like to confirm that we have your correct contact information.
- b. What is your full name? _____
- c. What is your title? _____
- d. What is your email address? _____
- e. What telephone number can you be reached on? _____

Appendix to Interview Guide

Organisation and SC Partners

ER	<u>Personnel</u>	OO
ER	<u>Information Systems</u>	OO
ER	<u>Internal Integration</u>	OO
ER	<u>External Integration</u>	OO
ER	<u>Processes & Standard Procedures</u>	OO
ER	<u>Funding & Donations</u>	OO
ER	<u>Demand Uncertainty</u>	OO

ER	<u>Physical Elements of Environment</u>	OO
ER	<u>Socio-economical</u>	OO
ER	<u>Government</u>	OO
ER	<u>Security</u>	OO
ER	<u>Infrastructure</u>	OO

External

8.3 Appendix C – Questionnaire to UNHCR Greece

1. Welcome To This Survey

Dear participant,

We thank you very much for taking a moment of time to contribute to our joint study on “*Challenges in Humanitarian Operations*” between Lund University and UNHCR. This research is an essential part to our master thesis project aiming at identifying the criticality and interdependence of challenges from different areas (e.g. ‘*Personnel*’, ‘*Funding and Donations*’ or ‘*Security*’) in an operation.

This survey is the second phase of our case study and builds on the findings from interviews and observations gathered during our internship at the *Supply Unit* in Athens BO (Greece) in March 2017.

We kindly ask you to make an assessment to what extend challenges differ between Emergency Response and Ongoing Operations. However, in order to increase the validity of the study it is important that you have actually been involved in both kinds of operations during your career in the humanitarian sector.

We define Emergency Response (ER) as short-term measures and activities taken in the aftermath of a disaster such as transportation of supplies and equipment for initial treatment, management of donations/volunteers, damage assessment or provisioning of temporary housing.

Ongoing Operations (OO) involve long-term recovery activities that may continue for years after a disaster and support affected populations to return to normality or improved quality of life by, for example, restoring local infrastructure or supplying medical and food supplies for routine disease and malnutrition prevention.

The completion of the survey will take approximately 15 minutes. If you are interested in the survey results, please leave your e-mail address before finally submitting your answers.

Thank you very much for your contribution!

Johan Christofferson & Erik Müller

2. 'Personnel' related Challenges

Such challenges can be:

- **Loss of information and (experience-based) knowledge, due to high staff turnover rates.**
- **Lack of experienced staff in humanitarian operations.**

* Personnel related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know / No experience
How common are <i>Personnel</i> related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Personnel</i> related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Personnel</i> related challenges in ER be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Personnel related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know / No experience
How common are <i>Personnel</i> related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Personnel</i> related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Personnel</i> related challenges in OO be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. 'Information Systems' related Challenges

Such challenges can be:

- **Over-reporting. Too many reports and too much detail.**
- **Unclear description of (Non-Food) items in the ERP system (e.g. "children's clothes" under only one ID number).**

*** Information System related challenges in Emergency Response operations**

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Information Systems related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Information Systems related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Information Systems related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** Information Systems related challenges in Ongoing Operations**

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Information Systems related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Information Systems related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Information Systems related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. 'Internal Integration' related Challenges

Such challenges can be:

- **Silo thinking: Strong focus on performance of own department and lack of awareness for processes and responsibilities of other departments.**
- **Internal incomprehension and frustration in the organization about unequal distribution of attention and funding for different operations (e.g. Europe vs. Africa).**

* Internal Integration related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Internal Integration related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Internal Integration related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Internal Integration related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Internal Integration related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Internal Integration related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Internal Integration related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Internal Integration related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. 'External Integration' related Challenges

Such challenges can be:

- **Lack of coordination of relief actors and efforts by the host government.**
- **Lack of experienced (local) implementing partners.**

* External Integration related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are External Integration related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do External Integration related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can External Integration related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* External Integration related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are External Integration related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do External Integration related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can External Integration related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. 'Processes and Standard Procedures' related Challenges

Such challenges can be:

- *Time-consuming customs clearance processes for relief supplies.*
- *Lack of process compliance (e.g. bypassing relevant entities).*

* Processes and Standard Procedures related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Processes and Standard Procedures related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Processes and Standard Procedures related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Processes and Standard Procedures related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Processes and Standard Procedures related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Processes and Standard Procedures related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Processes and Standard Procedures related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Processes and Standard Procedures related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. 'Funding and Donations' related Challenges

Such challenges can be:

- **High donor influence on project selection and money allocation (e.g. through earmarked funding).**
- **Inappropriate in-kind donations (e.g. too revealing clothing donations).**

* Funding and Donations related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are <i>Funding and Donations</i> related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Funding and Donations</i> related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Funding and Donations</i> related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Funding and Donations related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are <i>Funding and Donations</i> related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Funding and Donations</i> related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Funding and Donations</i> related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. 'Demand Uncertainty' related Challenges

Such challenges can be:

- **Uncertainty about *How Much* of *What* sort of items is needed *Where* and for *How long*.**

- **Biased forecasts: Tendency to forecast more than actually needed to prepare for potential disruptions.**

* Demand Uncertainty related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Demand Uncertainty related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Demand Uncertainty related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Demand Uncertainty related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Demand Uncertainty related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Demand Uncertainty related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Demand Uncertainty related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Demand Uncertainty related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. 'Physical Elements of Environment' related Challenges

Such challenges can be:

- **Detention of shelter material (e.g. tents) due to sustained exposure to sunlight, dust, wind, dryness (weather).**
- **Inaccessibility of terrains and POCs due to regional topography and prevailing weather conditions (e.g. steep slopes and heavy rainfall)**

* Physical Elements of Environment related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Physical Elements of Environment related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Physical Elements of Environment related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Physical Elements of Environment related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Physical Elements of Environment related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Physical Elements of Environment related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Physical Elements of Environment related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Physical Elements of Environment related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. 'Socio-economics' related Challenges

Such challenges can be:

- **Corruption issues in the country of service.**
- **Lost revenues in local tourism industry due to large influx of refugees on tourist sites and pollution with relief supply packaging.**

* Socio-economics related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Socio-economics related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Socio-economics related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Socio-economics related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Socio-economics related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Socio-economics related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Socio-economics related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Socio-economics related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. 'Political Governance' related Challenges

Such challenges can be:

- Lengthy/slow decision-making process at host government.
- Host government interference in humanitarian operation (e.g. import ban on certain (relief) items to protect local market)

* Political Governance related challenges in Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Political Governance related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Political Governance related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Political Governance related challenges in ER be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Political Governance related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Political Governance related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Political Governance related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Political Governance related challenges in OO be solved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. 'Security' related Challenges

Such challenges can be:

- **Looting/robbery of relief supply and vehicles.**
- **Humanitarian workers exposed to threats by armed conflict parties in the country of service (e.g. kidnapping).**

* Security related challenges in **Emergency Response** operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are <i>Security</i> related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Security</i> related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Security</i> related challenges in ER be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Security related challenges in **Ongoing Operations**

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are <i>Security</i> related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Security</i> related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Security</i> related challenges in OO be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. 'Infrastructure' related Challenges

Such challenges can be:

- Access restrictions to certain (remote) areas due to destroyed / non-existent roads.
- Non-existent / incapable logistics infrastructure in the country of service (e.g. no cranes/forklifts for loading/unloading)
- Limited availability and capacity of information technology and communication infrastructure in the country of service.

* Infrastructure related challenges in **Emergency Response** operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are <i>Infrastructure</i> related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Infrastructure</i> related challenges have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Infrastructure</i> related challenges in ER be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Infrastructure related challenges in **Ongoing Operations**

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are <i>Infrastructure</i> related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do <i>Infrastructure</i> related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can <i>Infrastructure</i> related challenges in OO be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. 'Community / Public' related Challenges

Such challenges can be:

- **Community / public reluctance towards the operation (e.g. "We are suffering under a crisis and need support ourselves! Why is all the money/support going to the refugees?").**
- **Negative public perception of the operation due to negative media coverage.**

* Community / Public related challenges to Emergency Response operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Community/Public related challenges in ER?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Community/Public related challenge have on ER operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Community/Public related challenges in ER be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* Community / Public related challenges in Ongoing Operations

	Not possible / No impact (1)	Very unlikely / Very low impact (2)	Slightly likely / Low impact (3)	Medium likely / Medium impact (4)	Likely / Considerable impact (5)	Very likely / Serious impact (6)	Extremely likely / Catastrophic impact (7)	Don't know/ No experience
How common are Community/Public related challenges in OO?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What impact do Community/Public related challenges have on Ongoing Operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can Community/Public related challenges in OO be solved ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Finally...

Thank you very much for your participation in our study!
Please answer two more questions in order to complete the survey.

* In total, how many **years of experience** do you have in Humanitarian Aid?

- Less than **3** years
- Between **3** and **6** years
- Between **6** and **10** years
- More than **10** years

* How many operations have you been involved in?

	0	1	2	3	4	5	More
Number of Emergency Response operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of Ongoing Operations ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please enter your **email address** if you would like to receive the results of the survey.