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Improving Knowledge in a Prison Without Walls Analysing the effectiveness of the Mine Risk Education Activities of [organisation X] in Syria

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Abbreviations

AOAV	Action on Armed Violence
APMBC	Anti-Personnel Mine Ban Convention
AXO	Abandoned Explosive Ordnance
ERW	Explosive Remnants of War
HMA	Humanitarian Mine Action
IED	Improvised Explosive Device
IMAS	International Mine Action Standards
IS	Islamic State
KAP	Knowledge, Attitude, Practice
MRE	Mine Risk Education
PHI	Public Health Intervention
SPSS	Statistical Package for the Social Sciences
UXO	Unexploded Ordnance

Abstract

The extensive use of mines and explosives in Syria pose a threat on all the lives of the conflict-affected population. To ensure that the population has the necessary knowledge and skills to protect themselves from this existing threat, diverse humanitarian mine action organisations, including [organisation X], design and implement mine risk education (MRE) activities. However, the number of beneficiaries reached with MRE alone does not adequately reflect the impact of the activities. There is a lack of data whether these achievements enhance the well-being of the people in communities that are affected by explosive hazards, especially in the ongoing conflict in Syria. Using the work of [organisation X] as a single case study, the objective for this thesis is therefore to assess to what extent the MRE activities of [organisation X] have increased the knowledge of explosive hazards and influenced positive behavioural change among their beneficiaries. 8.267 surveys have been gathered between 2016 and 2018 that examine the beneficiaries in the north-west and south of Syria both before (pre) and after (post) the risk education on knowledge of explosive hazards and to a limited extent on practices.

Overall, the findings of the pre and post survey show an increase in the knowledge among the beneficiaries as a direct causation of the MRE. This is affirmed by the applied paired-samples t-tests that suggest a significant difference between the levels of knowledge of the beneficiaries pre and post the risk education of [organisation X]. Based on the conceptual KAP framework and the assumption of a direct relationship between knowledge, attitudes and practices, the increased knowledge will most likely also lead to an increase in practices among the surveyed population. However, it should be emphasized that knowledge is only one component of positive behavioural change, meaning that challenges remain to ensure that the acquired knowledge is translated into the right practices.

[Organisation X] is a humanitarian mine action organisation that actively operates in Syria. However, due to security concerns, the organisation is operating anonymously. For reasons of confidentiality, the name of [organisation X] is not mentioned in this thesis.

Key words: behaviour change, explosive hazards, humanitarian mine action, KAP, knowledge, mine risk education, practice, Syria

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This is the dissertation "Improving Knowledge in a Prison without Walls: Analysing the effectiveness of the mine risk education activities of [organisation X] in Syria". It has been written to complete the Master's Degree in Humanitarian Action and Conflict at Uppsala University in Sweden.

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Arnaud Loman
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Chapter 1 – Introduction

1.1 Problem statement

On 13 December 2018, the United Nations Security Council (2018) adopted Resolution 2449 in which the Security Council is "calling for humanitarian mine action to be accelerated as a matter of urgency throughout Syria". Whereas landmines and explosive remnants of war (ERW) pose a threat on the lives of all conflict-affected populations, the situation in Syria is a complicated case on itself. Because the complex conflict is ongoing, the extensive use of mines and explosives might only exacerbate casualties in the future. It is therefore essential to ensure that the affected populations have the necessary knowledge and skills to protect themselves from this existing threat. Different humanitarian mine action (HMA) organisations, among others [organisation X], are currently working in Syria that contribute in bridging this gap with mine risk education (MRE).

While there is in general abundant data of the number of mines destroyed and people receiving MRE, there is a lack in data of whether these achievements enhanced the well-being of the people living in mine-affected communities. This makes that the understanding of the impact of HMA is still poorly grasped (Davies, 2015, pp. 36-37). Nowadays, increasing pressure is being placed on humanitarian organisations to undertake more evidence based evaluations of their work to measure and consider both the positive and negative impact of their actions. Hence it is key to assess the impact of humanitarian interventions for both priority-setting and maximizing the quality of projects (Harpviken, et al., 2003, p. 889). Complementary, since there are limited results in the development of demining techniques, further funding should be considered in research to improve impact measures, which would result in meeting the needs of the affected communities more effectively (Davies, 2015, p. 36). It is then important to know the effectiveness of the undertaken MRE activities, since the number of people reached alone does not adequately reflect the impact of the MRE activities (ICBL, 2004).

1.2 Research objective and questions

The objective of this thesis is to generate information on people's knowledge and practices of explosive hazards and to examine the effectiveness of past MRE activities in Syria. More specifically, the Knowledge, Attitude and Practice (KAP) model will be used

to analyse the effectiveness by drawing on the monitoring of the MRE activities that are organized and implemented by [organisation X] in the north-west and south of Syria since 2016. The analysis will seek to identify to what extent the MRE activities have increased the level of knowledge and influenced positive behavioural change among the beneficiaries. Thus, to assess and identify a change in knowledge regarding explosive hazards among the beneficiaries in Syria before and after the MRE intervention. Different areas of knowledge are assessed including recognition, risk awareness, dangerous and contaminated areas and safe behaviours. The results should justify the need for current (and future) MRE activities.

Research questions

1. To what extent do the MRE activities of [organisation X] in the north-west and south of Syria lead to an increase in the knowledge of explosive hazards among the beneficiaries?
2. Using the KAP framework, to what extent is there a positive relation between change in knowledge and behavioural change in practice among the beneficiaries and how can this be explained?

1.3 Method and design

The primary source of information that is used for this research is a quantitative dataset [of organisation X]. This dataset contains filled in baseline and endline surveys of the beneficiaries that participated in the MRE activities organized by [organisation X] in the north-west and south of Syria. The KAP model is presented and used as the framework within this research. This model aims to encourage positive health behaviour choices and prevent negative ones through increasing the knowledge of individuals or groups of individuals by providing them with information. With the help of the Statistical Package for the Social Sciences (SPSS), the knowledge of the beneficiaries regarding explosive hazards is analysed before (pre) and after (post) the MRE session. The analysis then relies on the data that is conducted and provided by [organisation X] that is based in Syria. Additional relevant information about vulnerable groups, HMA and MRE (in Syria specifically) is obtained through background research. Furthermore, the tools and concepts that are used as the theoretical framework are analysed and discussed via qualitative literature review, meaning that previous relevant academic research is selected, scrutinized and applied in a critical and constructive manner. By using the north-

west and south in Syria as a single case study and the beneficiaries of [organisation X] as the core target group, this research allows a more in-depth analysis of the MRE effects.

1.4 Rational for research and relevance to humanitarian action

While the precise extent of contamination in Syria is unknown as of end 2017, it is estimated as 'extensive' (Landmine & Cluster Munition Monitor, 2018). In 2017 alone, 1.906 mine and ERW casualties were reported in Syria. However, since the conflict started and exacerbated in 2011, annual recorded totals of casualties are thought to be massively undercounted (Ibid.). MRE is one of the pillars of HMA and forms, together with demining (clearance activities), the component that reduce the risk of physical injury from mines and ERW which already contaminate the land. MRE refers to a variety of activities which seek to reduce the risk of injury to people, property and environment from mines and ERW by improving knowledge of mine related risks and strengthen the capacities for safe behaviour. But to what extent do the MRE activities lead to the desired improvement in knowledge and to the broader desired behavioural change? It is important to evaluate the MRE activities. To know to what extent the MRE activities are effective, and to identify to what extent there is margin for potential improvement. This thesis aims to fill this gap by researching a single MRE case study in Syria. Genuine evaluation contributes to justify the need for the current (and future) MRE activities and their funding. And this is necessary. As "new use of landmines, particularly in the Middle East, has created new humanitarian priorities and funding requirements for the mine action community" (Wallen & Loughran, 2018, p. 6).

1.5 Previous and current research

Prior to this survey, there is no baseline to measure whether the MRE activities in Syria have had an impact on the knowledge and practices of the beneficiaries. Mainly because MRE is mostly done in post-conflict settings, which is not the case in Syria. Because it is an ongoing conflict, information and KAP surveys, especially on MRE, are in short supply. Whereas different reports of NGOs have been identified of KAP surveys on MRE in, for example, Afghanistan (DDG, 2018), Somalia (Handicap International, 2007) and South Sudan (Boedicker, 2013), only one KAP survey report on MRE of the Syrian population was found, published by the Danish Refugee Council and the Danish Demining Group in February 2016. However, this report covered a sample of Syrian

refugees that reside in the Sanliurfa and Hatay provinces of Turkey. Two of the main observation were that Syria is highly contaminated with explosive ordnance, of which the majority is located in areas where people live, and that the majority of the respondents (more than 90%) did not have any prior information about explosive hazards to the survey. The report concluded that there is a gap in information dissemination. The main knowledge gaps identified were recognition of mines and ERW; knowing clues for dangerous (contaminated) areas; insufficient information in risks and dangers; and a lack of information regarding formal and informal warning signs (DRC & DDG, 2016, pp. 2-3).

Although there are different KAP studies on a variety of public health issues in the academic literature, only a few academic KAP studies have been found on the topic of MRE (not in Syria). The main point that is argued in the literature of the latter is that an increase in awareness and knowledge is a prerequisite for behavioural change, but that this alone is not enough to reduce risk behaviour (Andersson, et al., 2003, p. 874) (Durham & Ali, 2008, pp. 27, 32). This is further elaborated in chapter 3.

1.6 Research limitations

For both limitations in time and word count, this thesis focuses only on the beneficiaries of the MRE activities of [organisation X] in the north-west and south of Syria. Nonetheless, due to the amount of filled in surveys, recommendations are also drawn for the broader mine action community in Syria. Due to the same limitation, not each question of survey could be analysed in the discussion. Furthermore, due to the ongoing conflict, limited data was available over the exact amount of contamination of explosive hazards across Syria and over the status of the mine action community and MRE activities in the country. Accordingly, [organisation X] is operating anonymously in Syria because of security reasons. For reasons of confidentiality, it is therefore decided to not mention [organisation X] by its name in this thesis.

The obtained data of [organisation X] could not be checked and validated. Hence, it is assumed that the surveys are conducted in an accurate, transparent and fair manner towards the beneficiaries and that the collected data is clean and objective. Another limitation was the lack of available retention data in both knowledge and practice. The only component that was measured before and after the MRE in the same manner and

therefore suitable for a comparison was knowledge. It would be interesting to indicate to what extent the beneficiaries achieved to retain the level of knowledge over a longer period of time and how the knowledge affected their future practices. So, while this thesis also sought to identify to what extent the MRE activities influenced positive behavioural change, the analysis is mainly focused on the component knowledge. As discussed in chapter 3, knowledge is only one component that influences behavioural change. The results and conclusions of this thesis do thus not guarantee that there will be an actual change in future practices among the beneficiaries.

1.7 Thesis outline

The thesis is divided into six chapters. This first chapter elaborate on the problem statement and the objectives of the research. In addition, it explains the rationale and relevance to humanitarian action and draws the research limitations. The second chapter introduces the mine action community and gives an overview of important background information which is relevant to the case of Syria. The next chapter elaborates on the KAP model that is used as the conceptual framework for this research. It also contains different limitations and critical notes of the academic field towards this framework. Subsequent, the fourth chapter is about methodology and elaborates on the used dataset and the different analyses that are applied within this research. The fifth chapter is the analysis itself. Social demographics and the most important results on knowledge and practice related to the MRE are discussed. The thesis ends with the sixth chapter in which the conclusions are drawn. This chapter also suggest different research recommendations, based on the data analysis, in order to guide the future work of [organisation X] and the broader mine action community in Syria.

Chapter 2 – Background

To understand the current situation in Syria and the challenges of MRE, we first need to take a step back, and lay out the wider issues involved. The first part explains what mines and ERW are and what the problem worldwide is. The following section elaborates on the current situation in Syria. After that, attention will be drawn to the people who are most vulnerable to those explosive hazards. The fourth part is about how to reduce the impact of explosive hazards, elaborating on the term HMA and its contemporary issues. The last section explains one of the pillars of HMA that is researched within this thesis, MRE.

2.1 Landmines, ERW and the problem worldwide

A lot of conflict and post-conflict countries are still widely contaminated with landmines and explosive remnants of war (ERW), approximately 61 countries according to the International Campaign to Ban Landmines (2019). This contamination is a legacy of many armed conflicts that threatens the environment and human security in which landmines and ERW form an obstacle towards (post-conflict) peacebuilding and socio-economic development (Hofmann & Rapillard, 2017, pp. 396-398) (Shimoyachi-Yuzawa, 2012, p. 181). Landmines (anti-personnel mines) are indiscriminate weapons that are "designed to be exploded by the presence, proximity or contact of a person and that will incapacitate, injure or kill one or more persons" (UN, 1997). They have been declared as illegitimate weapons that causes unnecessary injury to civilians. ERW predominantly consists out of Unexploded Ordnance (UXO), Abandoned Explosive Ordnance (AXO) and cluster munition. UXO refers to munitions that have been used but failed to detonate as intended. AXO refers to the explosive ordnance that has not been used during an armed conflict, but which is left behind or dumped, and therefore no longer under the control of a party to the armed conflict (GICHD, 2014, p. 18). To stay consistent within this research, the term 'explosive hazards' will mainly be used.

Explosive hazards do not only harm civilians during conflict, but also in the years after reaching a settlement (GIHCD and swisspeace, 2016, p. 8). They do not only expose the current local population to fatal risks regarding human life, they also form a threat for future generations to come. Peace agreements may be signed, and hostilities may cease, but explosive hazards remain underground (ICBL, 2018, p. i). Landmines and ERW are not simply 'things'. They are 'dangerously vibrant matter'. They are simultaneously there

and not there. Beyond the direct threat to physical security, the contamination of explosive hazards forms a major impediment to social and economic development efforts; they delay the return and resettlement of refugees and internally displaced persons; and they block access to vital resources and social services, such as water, land, health care and education (GIHCD and swisspeace, 2016, p. 8) (Shimoyachi-Yuzawa, 2012, p. 181). In 2016, over 8.605 people around the world were injured or killed by landmines and ERW. This makes it an average of 23 people every day that lost their life or limb due to landmines and ERW (ICBL, 2019). If those are the consequences of the contamination problem worldwide, how is the situation in Syria?

2.2 The situation in Syria

The Syrian Arab Republic is contaminated by landmines of the successive Arab-Israeli wars since 1948. However, the current situation in Syria, especially since the start of the conflict in 2011, makes the contamination of explosive hazards even more problematic (Landmine & Cluster Munition Monitor, 2018). 8.2 million inhabitants are living in communities that report explosive hazards (Ibid.). Although it is believed to be very extensive, it is unclear what the precise extent of contamination across Syria is. What is certain is that the contamination is considered to be so large that the work that is required need to be measured in decades (HALO Trust, 2018, p. 1). Due to ongoing hostilities and the lack of reliable information and reports, no clear determination of the extent and type of contamination can be given (DDG, 2019).

There is also no national mine action authority nor programme for survey and clearance. Most of the mine action is conducted by a wide range of organisations. Since 2015, the United Nations Mine Action Service (UNMAS) is based in the country and coordinates support for 27 mine action organisations which undertake contamination impact surveys, marking, risk education and clearance. Many of those organisations operate anonymously in Syria because of security concerns (Landmine & Cluster Munition Monitor, 2018).

The increased mobility and insufficient awareness and knowledge about the risks, types of explosive hazards and their location, complicate the issues. Since the conflict started, reports of ERW-related accidents have increased (DRC & DDG, 2016, p. 3). Between 2011 and 2018, Action on Armed Violence (AOAV) (2019, p. 4) recorded 79.206 casualties of explosive weapons of which 85% civilians. The report emphasizes that the

direct casualties from explosive violence only account for a minority of the total casualties that is caused by the impact of this violence. Through the use of explosive weapons, key infrastructure is destroyed; communities are deprived from clean water, sanitation and medical care; and education is interrupted leaving many in poverty (Ibid.).

Both the pro- and anti-government forces are reported of the continuing use of landmines and other explosive hazards. The dynamics of the conflict, which was initially a struggle between the Syrian Government and internal opposition forces, changed as Islamic State (IS) and other actors became involved (HALO Trust, 2019). Contamination is likely to be dense in former occupied areas of IS, since retreating IS forces left massive improvised explosive hazards behind that have taken a heavy toll on returning civilians. MSF (2018) reported that the number of victims it treated due to explosive hazards doubled between November 2017 and March 2018 in north-east Syria. In addition, Turkish authorities reportedly claimed that the Syrian Government had laid mines along their borders (Landmine & Cluster Munition Monitor, 2018). The southern governorates of the country are also affected. Although unconfirmed, open-source reports of mine casualties are suggestive of significant contamination left by all sides during the years of the conflict (Ibid.). According to the report of AOAV (2019, p. 8), the worst locations with most casualties of explosive weapons are the governorates Aleppo and Idlib in the north-west of the country and the governorate Rif Dimashq in the south of Syria.

While the contamination of explosive hazards across Syria is considered to be very extensive, it should be noticed that some groups tend to be more vulnerable to explosive hazards than others. The next section will elaborate on this in more detail.

2.3 Vulnerable groups

All people that are living in areas contaminated with explosive hazards are exposed to the dangers and effects of those hazards on a daily basis and therefore more vulnerable in becoming a victim. Of all casualties related to explosive hazards in 2017, civilians continued to be the vast majority (87%). With 47%, most civilian casualties were children (ICBL, 2018, p. 2). Children are in particular vulnerable due to their natural inquisitiveness and lack of knowledge (WNN, 2013). Moreover, they are smaller and much more apt to receive sever injury than adults. Even humanitarian actors are inhibited with the delivery of critical emergency response activities as they cannot always access

some of the most penurious areas due to the risks posted by explosive hazards (DDG, 2019).

The mine action community that focus on MRE emphasizes five groups of people that are recognized as risktakers and therefore more vulnerable (UNICEF, 2005, p. 11). (1) The unaware. Those are the persons who do not know about the dangers. This group consist typically out of young children, refugees, returnees and internally displaced persons. The latter often move through conflict affected areas with high levels of contamination of explosive hazards. In addition, the movement of people is a difficulty that HMA organisations are facing. They have no control over them, and it influences impact assessments (Davies, 2015, p. 153). (2) The uninformed. Those are the persons that know about the explosive hazards, but who do not know about safe behaviours. (3) The misinformed. Those people have been given wrong messages or they think wrongly about safe behaviours. Former soldiers are an example of this group. (4) The reckless. Those persons know about the explosive hazards and about safe behaviours concerning those hazards, but they deliberately ignore them. Adolescent boys are an example that belong to this group. (5) The forced. The last group that is more at risk are the people who are forced to. They have no other option than intentionally adopt unsafe behaviour in order to survive. Those persons often have a problematic social-economic status (Samuel Hall Consulting, 2012, p. 28).

Based on all the information above, the next two sections will discuss what is and can be done to reduce the impact of those explosive hazards.

2.4 Humanitarian mine action

Humanitarian Mine Action (HMA), defined by the UN International Mine Action Standards (IMAS), is the *"activities which aim to reduce the social, economic and environmental impact of mines and ERW including cluster munitions"* (GICHD, 2014, p. 26). HMA is not only about demining, it is just as much about people and societies, and how they are affected by the contamination of explosive hazards. The objective of HMA is to reduce the risk from explosive hazards to a level where people can live safely and in which economic, social and health development can occur freely without constraints imposed by the contamination of explosive hazards (Ibid., p. 27). The UN divides HMA

in five fundamental pillars, five complementary groups of activities, of which demining and MRE are the two components that reduce the risk of physical injury from explosive hazards which already contaminate the land (UNICEF, 2005, p. 16). (1) Demining, including survey, mapping, marking, clearance and handover of the cleared land; (2) MRE, raising awareness and promoting behavioural change to improve the safety and efficiency of HMA; (3) victim assistance, including rehabilitation and reintegration; (4) stockpile destruction; and (5) advocacy against the use of explosive hazards.

HMA has its roots in the Afghan context in 1989 when the first humanitarian response to the landmine problem was initiated (Harpviken, 2003, p. 777). Since then, HMA has come a long way and reached massive achievements on the ground as well as politically. One major achievement of the latter is the Anti-Personnel Mine Ban Convention (APMBC), better known as the Ottawa Treaty. In 1997 states and civil society came together to put an end to the harm inflicted by anti-personnel mines. This resulted in the APMBC which obliges states' parties to clear all anti-personnel mines in their territories within ten years of becoming party to the treaty, and prohibits the use, stockpiling, production, and transfer of anti-personnel mines. Syria is not a state party to the APMBC and therefore does not have a specific deadline for clearance. Nonetheless, Syria has, just like any other state, obligations under international human rights law to protect life, which require the clearance of explosive hazards in areas under its jurisdiction or control as soon as possible (Mine Action Review, 2018, p. 360) (Mine Action Review, 2018, p. 134). Due to the continued use of explosive hazards, the mine action sector will most likely not be dismantled anytime soon. Continued effort to improve the sector and its practices remains important (Harpviken, 2003, p. 780).

Frustration mounted during the mid-1990s when critics saw the emerging sector as overly focused on technicalities rather than affected populations, as well as failing to co-ordinate with the larger humanitarian assistance community (Ibid., p. 777). The HMA sector has changed a lot since. Its professional composition changed from an almost exclusive reliance on military competence towards personnel with a development background (Bottomley, 2003, p. vii). One of the challenges of today is that local people and mine action actors understand the effects of explosive hazards differently. While the former conceptualises the impact in a more holistic way, referring to its social, emotional, spiritual, psychological and physical meaning, the latter focus predominantly on the

material impact (Davies, 2015, p. i). Local communities do participate in the decision-making processes, but their information, which is gleaned from the needs assessments, is often unused and not considered in the planning and prioritisation processes (Ibid., p. 240). In addition, research shows that there is an inherent focus on outputs and outcomes, rather than on impact. A lack in donor funding to implement effective post impact evaluations is one of the underlying reasons (Ibid., p. 241).

2.5 Mine risk education

Mine risk education (MRE) is defined by the IMAS (2019, pp. 26-27) as "activities which seek to reduce the risk of injury from mines or ERW by raising awareness of men, women, and children in accordance with their different vulnerabilities, roles and needs, and promoting behavioural change including public information dissemination, education and training, and community mine action liaison". All MRE programmes share the same three goals (GICHD, 2014, p. 173). Those are (1) to minimise deaths and injuries caused by mines and ERW. The main strategies used here are information provision and exchange, advocacy and capacity development. (2) To facilitate other mine action activities. Meaning that MRE helps to improve the other pillars of HMA as well. In addition, community liaison, the process of linkages and advocacy between the mine action sector and affected communities should improve information exchange. (3) To reduce social and economic impacts from explosive hazards and support community development.

MRE shifted and has undergone a significant evolution in theory and practice. From simply raising awareness and disseminating information, based on the assumption that accidents occur because people are not aware of the risks, towards a more dominant paradigm that relies heavily on socio-cognitive theory, which focuses on individual behaviour and lifestyle choices. Another trend is a shift towards multi-level interventions and participatory communication. Nonetheless, most MRE programmes are based on public awareness and educational approaches (Durham, et al., 2005, p. 215). MRE messages, including the one of [organisation X], are usually based on UN guidelines and include recognition of explosive hazards, recognition of areas that are likely to be contaminated, safe behaviours and emergency procedures in the event of finding oneself in a contaminated area (Ibid.).

One of the practical issues is that the impact of the MRE activities are not always easy to measure. Boyd *et al*. (2018, p. 2) emphasizes that evidence of the effectiveness of MRE alone to reduce injury is lacking. Risk behaviours are not a one-time output, but rather a series of decisions and actions that are influenced by a wide range of risk determinants. Intentional risk takers are often unable to change their behaviour despite increased awareness. This is not always out of ignorance or irresponsibility, but often due to socio-economic factors that make the risk of not entering a hazardous area appear greater than that of doing so. For example, to collect water, firewood, food or the ordnance itself for its scrap metal value. The problem is then not a lack of awareness, which is why MRE must look beyond basic awareness raising to developing community-based mechanisms for problem-solving and risk reduction (Andersson, et al., 2003, p. 886). It is therefore argued that the exogenously planned MRE is likely to be limited, but that "MRE that takes into account the endogenous culture, building on risk-adverse behaviour and providing alternatives to risk-taking behaviour within this culture, could have a direct positive impact on individual practice" (Ibid., p. 875).

Another concern, expressed by different MRE organisations, lies in flawed methodology that can, and often does, undermine the message being delivered. This is the case when, for example, military MRE instructors or touching or holding the explosive hazards during the presentation. This concern enlarges when those soldiers are in full uniform and armed. They do not represent the best role model for impressionable children (UNICEF, 2005, p. 24). While MRE has undergone a significant evolution in theory and practice, so have the explosive hazards. A new trend is the increasing use of Improvised Explosive Devices (IEDs). The use of those IEDs is making the past and current risk education difficult, as they are a completely different set of problems to deal with compared to conventional mines and ERWs. MRE need to be changed accordingly.

Chapter 3 – Theoretical Framework

This chapter will firstly describe the background and relevance of KAP. After that, critical views and limitations of the framework are discussed. Lastly, a conceptual framework for analysing the effectiveness of the MRE activities of [organisation X] using KAP is laid out.

3.1 Knowledge, Attitude and Practice (KAP)

MRE can be seen as a public health intervention (PHI), in which the latter is "an act performed for, with or on behalf of a person or population whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions" (WHO, 2019). PHIs have followed often a top down approach perpetuating 'a-one-size-fits-all' mentality while structurally ignoring social, political and cultural context (Muleme, et al., 2017, pp. 1-2). A common tool that is widely used by humanitarian agencies, including organisations in the field of HMA, to gather such context-specific information are Knowledge, Attitude, and Practice (KAP) surveys. KAP surveys aim at identifying indicators that can inform and improve the development and implementation of PHIs (Ibid., p. 2). The information is gathered via a standardized questionnaire containing predefined questions that provide access to quantitative and qualitative information. It is used to facilitate an adequate understanding and action by focusing on identifying knowledge gaps, cultural beliefs or behavioural patterns (Wang, et al., 2015, p. 1836).

Studies that apply KAP as a conceptual framework for the design and implementation of PHIs fundamentally assume a linear relationship between knowledge, attitude and practice, meaning that an awareness campaign will result in the desirable societal behavioural change (Muleme, et al., 2017, p. 2) (Rav-Marathe, et al., 2016, p. 4). PHIs that are based on KAP data are about changing human behaviour and work in the following steps. It is believed that people change their knowledge if they are provided with the correct information. It is believed and expected that targeting the knowledge of the beneficiaries through providing correct information via awareness campaigns, good attitudes and beliefs will develop among the beneficiaries, which will lead to the desired positive behavioural change in (daily) practices. This tool encourages positive health behaviour choices and prevent negative ones.

Within the field of HMA, the KAP survey is used to gather information on which (future) MRE programmes are established (Boedicker, 2013, p. 83) (DDG, 2018, p. 6). The data pre and post the MRE session of [organisation X] in Syria are collected with a KAP survey, in which:

- Knowledge is defined as "the capacity to acquire, retain, and use information: a mixture of comprehension, experience, discernment and skill" (Badran, 1995, p. 8). Knowledge in this study assesses the extent to which individuals know about the risks of explosive hazards; can recognize explosive hazards; and know how to behave safely in situations when they encounter explosive hazards.
- Attitude is defined as "inclinations to react a certain way to certain situations; to see and interpret events according to certain predispositions…" (Ibid.). Attitudes in this study characterizes the feelings and inclinations of individuals regarding explosive hazards.
- Practice is defined as "the application of rules and knowledge that leads to action" (Ibid.). The practice documents the actions related to explosive hazards. From recognition, to behave and handle in a safe prescribed manner to reporting it the explosive hazard to the right authorities.

In the clinical world, a similar framework, modified by Cabana (1999), is used that systematically reviews the barriers to physician adherence to clinical practice guidelines. The model follows the same path from knowledge towards practices. A variety of barriers undermines the process that lead to the improved outcomes of behaviour (Lang, et al., 2007, p. 360). Regarding explosive hazards, a lack of awareness and a lack of familiarity affect the beneficiaries knowledge. In terms of attitudes, lack of agreement, self-efficacy and outcome expectancy are potential barriers. Despite adequate knowledge and attitudes, external and internal barriers can affect the ability of individuals to execute the desired practices. Schouten *et al.* (2007, p. 145) emphasizes that by not analysing the full spectrum of barriers, important interventions to improve the behaviour of beneficiaries might not be investigated or implemented.

3.2 Criticism and limitations

KAP studies are popular because they are easy to design and easy to conduct. In addition, they are cost-effectively, even nationwide, and the data output, the 'hard numbers', is

quantifiable and the utility is generalizable for context specific problems. KAP studies are also important tools for political persuasion which can be used to show progress to funding agencies (Launiala, 2009, pp. 1-3) (Muleme, et al., 2017, p. 2). However, there is not a complete consensus over the usefulness of the KAP survey among experts. The tool is also a source of historical and contemporary criticism. It is argued as to be simplistic and flawed (Ibid.). While the KAP survey is easy to conduct, it is taken for granted that the data automatically provides accurate information about knowledge, attitude and behaviour. The interpretation is robust if both qualitative and quantitative aspects are used. Muleme *et al.* (2017, p. 2) emphasizes that there are remarkably few KAP studies that both combine those types of data. A limitation is then to rely solely on KAP survey data, which is not always holistic and realistic on itself. Do people really tell what they practice in reality?

There is also discussion that raising awareness and improving the knowledge of individuals does not necessarily lead to a change in behaviour, to the desired attitudes and practices. Multiple studies have shown that knowledge is only one factor that influences treatment seeking practices, arguing that the direct relationship between knowledge, attitudes and practices is based on a false assumption (Launiala, 2009, p. 4). That there is no robust framework for testing the linear relationship between knowledge, attitudes and practices before and after the intervention (Muleme, et al., 2017, p. 2). Even when it is in one's own self-interest, some individuals tend to not change their behaviour due to a multitude of reasons that extend beyond knowledge. As mentioned in subchapter 2.5, larger contextual socio-cultural, environmental and economic aspects can be overlooked (Ibid.) (Durham, et al., 2005, p. 219). Therefore, one should use participant observations and conduct group discussions or in-depth interviews in addition to observe people's daily practices (DDG, 2018, pp. 7, 66).

Other models, which are outside the scope of this research, exist that take more factors into account that enable the desired behavioural change. For example, the socio-economic system model which is based on the posits that health and risk adverse behaviour is a product of interdependence between individuals and their environment. Within this model, there are three risk determinants that explain behavioural change. Predisposing factors, such as knowledge, attitude, beliefs and values. Enabling factors, factors that will facilitate the action, and reinforcing factors, which are positive and negative feedback

(Durham, et al., 2005, p. 216). Only the first determinant will be partly investigated. The problem is that there are many health behaviour theories, which form the foundation for programme planning and development, but that no single theory fits all situations. Different theoretical frameworks are practical and appropriate for different scenario's. Despite criticism, KAP studies are still popular and used with varied consideration for integrating both qualitative and quantitative data (Muleme, et al., 2017, p. 2).

3.3 Conceptual framework

This study aims to evaluate the impact of a KAP based interventional MRE programme in Syria on the knowledge of the beneficiaries. The KAP model, based on the linear relationship between knowledge, attitude and practices, functions as the conceptual framework within this study. As one can observe in figure 1, the lack of knowledge is based on the lack of awareness and/or familiarity with explosive hazards. This is further characterized by attitudes that are centered on a lack of outcome expectancies. Such a scenario can only be reversed by creating awareness, familiarity and knowledge among the targeted population (Muleme, et al., 2017, p. 2). Other literature (Rav-Marathe, et al., 2016, p. 16) suggests that educational interventions improve knowledge and attitudes, which enhances self-care practice. Improved practices lead to improved outcomes. The MRE intervention of [organisation X] is then expected to produce the desirable actions and behavioural change. Applying this framework with a pre- and post-test study of a single case, enables discovery of whether the hypothesized pathways are consistent with the data (Ibid.). As stated in the objectives, the quantitative data that is collected by [organisation X] is analysed to assess a potential increase in knowledge and awareness among the beneficiaries, what will lead, based on the framework, to improved practices. The second research question therefore tries to investigate to what extent this linear relationship between KAP exist.

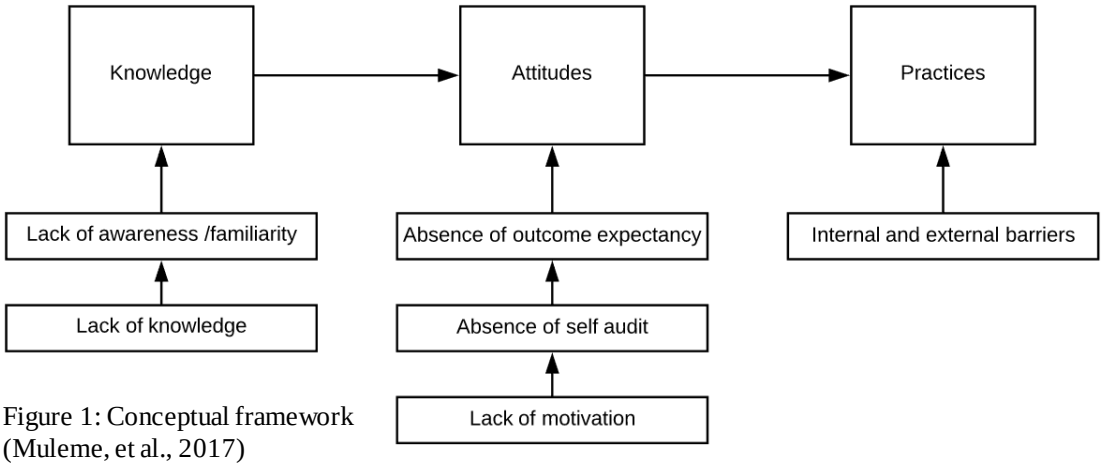

Figure 1: Conceptual framework (Muleme, et al., 2017)

Chapter 4 – Methodology

The following chapter outlines the methodological decisions that are made and the strategies that have been applied to analyse the data. It starts with explaining how the data is gathered.

4.1 Collected data

This research uses data, collected by [organisation X] between the last three months of 2016 – all of 2017 – and the first six months of 2018, in the form of standardized pre and post surveys, see appendix I. The data comes from different locations in the north-west and south of Syria where [organisation X] is mainly operating. The collected data is a sample size of all the data that is collected over time and contains 8.267 filled in surveys. The survey is a [organisation X]-internal survey for the purpose of measuring change in knowledge and retention of knowledge resulting from the participation in the MRE sessions. A standardized form, tailored to the context of the country, is designed so it can be used on a tablet or smartphone. [organisation X] has three different types of MRE sessions. The most common one is a 45 - 60 minute interactive session in which the teams go to different locations. The session starts with an introduction of [organisation X]. After that, different topics will be discussed such as: recognition of dangerous items, safe and dangerous behaviours, areas where explosive hazards exist and what to do in case you are in a minefield or near a dangerous item. Before the session starts, some of the participants are selected for the pre survey. An employee of [organisation X] reads the questions to the participant and fills the form in according to the answers of the participant. When the MRE session is finished, the post survey is conducted in the same way. The other two types of MRE sessions are safety briefing to INGO or health workers, for those who cannot attend the 45 – 60 minute session, and community focal point training. For both those types of sessions, no pre and post survey is conducted.

[Organisation X] is targeting all at risk populations in their areas of implementation. This means that the beneficiaries are consisting out of all men, women, boys and girls that are under the threat of being exposed to the dangers of explosive hazards, including but not limited to internally displaced persons, returnees, host communities, NGO workers, teachers, students (formal and informal education), farmers, metal collectors and religious leaders. The MRE sessions are done in different locations and settings such as mosques, schools, farms, shops and roadsides. Of all the MRE sessions that [organisation X] is

conducting, at least 10% of the total audience is pre- and post-surveyed. Those are randomly selected. 201.786 beneficiaries have been reached in total in the north-western and southern part of Syria by [organisation X], of which 72.870 boys, 72.252 girls, 23.990 men and 32.674 women. Including the other regions in Syria where [organisation X] is actively carrying out MRE sessions, approximately 1 million beneficiaries in total are reached.

4.2 Validity and reliability

Using surveys for this kind a research has been popular for several reasons. Surveys are relatively easy to administer, and they gather relatively large amounts of data efficiently at a low cost. In addition, the responses can be generalized for the whole population when random sampling is used (Sivo, et al., 2006, p. 352).

It is important that the research guarantees a certain degree of validity and reliability, to prevent the findings of the research from being biased. The sample size can be inadequate (sampling error), the surveys can be imperfect (measurement error) or there could be an inability to contact some people of the population (coverage error). However, the most notorious problem using surveys is the failure of (the right) recipients to respond (nonresponse error). This error refers to the condition where people of a particular group are systematically not represented in the sample (Ibid.). Subsequent it becomes more difficult to generalize the sample to the intended population. The sampling, covering and nonresponse errors are countered by the 8.267 randomly selected individuals who participated in the survey. As one can see in the results, the individuals are divided by gender and age into six different groups of the population. The measurement error is countered because the results of the survey can be used for this research.

4.3 Research design

The pre survey exist out of the questions 1 to 6, that are about general background information and current behaviours and practices, and questions 7 to 14, that are about knowledge including recognition and safe behaviour practices. After the pre survey, the MRE session takes place. The post survey takes place directly after the MRE session and consists again out of questions 7 to 14 and in addition out of questions 15 and 16. The

latter two questions are about projected behaviour change. The research design then looks like the figure below.

	Questions 1 to 6	Questions 7 to 14	Questions 15 and 16
Pre survey	X	X	
MRE session			
Post survey		X	X

Table 1: Research design

4.4 Analyses

To analyse to what extent the MRE activities of [organisation X] in the north-west and south of Syria have led to an increase in the knowledge among the beneficiaries, descriptive statistics were applied via the Statistical Package for the Social Sciences (SPSS) version 20.0. The answers pre and post the MRE session to the questions that cover the theme knowledge, are stated in frequencies, percentages and graphs. An increase in knowledge is enabled by reducing the number of incorrect responses. Each of those tables is shortly explained. The increase is measured when it is calculated how much the beneficiaries gained out of the total possible that they could have gained from pre to post survey. It should be considered that the beneficiaries already have a certain level of pre-existing knowledge. One wants to find out how much of an increase in knowledge can be attributed to the MRE session. The actual gain is therefore divided by the potential gain, which lead to the following formula.

$$\text{Increase in knowledge (\%)} = \frac{\text{Score post survey (\%)} - \text{Score pre survey (\%)}}{\text{100\%} - \text{Score pre survey (\%)}} \times 100\%$$

After that, the pre- and post-survey data is tested for statistical significance by applying the paired-samples t-test. One wants to know with at least a 95% if the difference in the knowledge pre and post the MRE session exist. Two hypotheses are generated for the t-test that determine if there is a relationship or difference between the two analysed groups. Those are the ones beneath. The null hypothesis refers to a general statement that there is no relationship or difference between two groups. It is generally assumed to be true until evidence indicates otherwise. The statement that is hoped or expected to be true is called the alternative hypothesis. The outcome is measured in the p-value, which is the probability of obtaining similar findings if the null-hypothesis is true. The smaller the p-value, the stronger the evidence against the null hypothesis.

- H0 (null hypothesis): There is no difference between the level of knowledge of the beneficiaries before and after the MRE session.
- HA (alternative hypothesis): There is a difference between the level of knowledge of the beneficiaries before and after the MRE session.

Because the interviewees could indicate multiple answers for most questions, not all questions could be analysed with the paired-samples t-test. Only the questions in which the answers were either correct/safe (which received a value of 1), incorrect/unsafe (which received a value of 0) or don't know (which received a value of 0) could be analysed for statistical significance.

Chapter 5 – Analysis/Discussion

By applying KAP as the conceptual framework, light is shed on the outcomes of the MRE activities of [organisation X] in Syria. While the focus is predominantly laid on the knowledge of the beneficiaries, the last section takes a look at practices. Based on the findings of the analysis, conclusions will be drawn and presented in the next chapter as well as some research recommendations.

5.1 General social demographics

General social demographics of the researched population are summarized in frequencies and percentages in table 2. Within the variable age and sex of the interviewee, there are six categories. Of all the 8.267 subjects, the two categories that are most targeted are boys (22,7%) and girls (20,5%) respectively, both within the age between 6-10 years. This is interesting since the background indicated that especially young children fall within the group that is most vulnerable to explosive hazards. The second variable shows the highest education level of the interviewees, which is an important factor in determining the channels of communication for MRE materials (Boedicker, 2013, p. 20). More than 85% of the interviewees indicated that they had only primary education or no education at all, while only 5% attended a University Degree or higher. To put in contrast, 43,2% of all the interviewees are children between the age of 6-10 years. Logically it follows that their highest level of education cannot be above primary education, since they have not reached the age yet to attend secondary or university education. Almost half of the interviewees (49%) indicate that their primary occupation is a student, followed by a housewife (16%). The third largest primary occupation of the interviewees is other (14.1%). The data suggest that most of those are non-school children (813), NGO workers (97) and construction workers (56).

	Categories	Frequency	Percentage
Age & Sex of Interviewees	Boy (6-10)	1873	22,7%
	Boy (11-17)	806	9,7%
	Girl (6-10)	1694	20,5%
	Girl (11-17)	874	10,6%
	Man (18+)	1337	16,2%
	Woman (18+)	1682	20,3%
	Missing	1	,0%
	Total	**8267**	**100,0%**

Highest Education Level of Interviewees	None	2322	28,1%
	Primary	4797	58,0%
	Secondary	730	8,8%
	University Degree or higher	417	5,0%
	Missing	1	,0%
	Total	**8267**	**100,0%**
Primary Occupation of Interviewees	Farmer	397	4,8%
	Herder	162	2,0%
	Housewife	1325	16,0%
	Occasional Worker	166	2,0%
	Other	1165	14,1%
	Public Sector Employee	81	1,0%
	Soldier	27	,3%
	Student	4053	49,0%
	Teacher	288	3,5%
	Trader	93	1,1%
	Unemployed	509	6,2%
	Missing	1	,0%
	Total	**8267**	**100,0%**

Table 2: General social demographics of the researched population

5.2 Knowledge

Knowledge is one of the components of the KAP framework and various questions in the survey tested the participants on knowledge regarding explosive hazards. The graphs and tables below show the resulting data that those questions returned. Overall, knowledge was higher on all the topics in the post survey compared with the level of knowledge pre the MRE. This outcome is in line with the expected results of MRE in general. One can be certain of this causation since the surveys are carried out directly before and directly after the MRE session. The impact of future MRE interventions can by assessed by using this data as a baseline moving forward. Since not all the questions can be analysed and exemplified, only the most significant results are discussed.

5.2.1 Recognition (explosive hazards and warning signs)

The first question that is asked in both the pre and the post survey on the theme knowledge is about recognition. While showing multiple pictures, the interviewees are asked which picture the landmine is. In the pre survey, only 23,8% of the interviewees gave the correct answer, while more than half (58,3%) gave an incorrect response. In the post survey, 99,5% gave the correct answer, and only 0,5% gave an incorrect response. After applying

the calculation as explained in subchapter 4.4, the results indicate on an increase in knowledge of 75,9% that can be attributed to the MRE session.

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
7.1 Which picture is a landmine?	Correct	1971	23,8%	8224	99,5%
	Incorrect	4816	58,3%	38	0,5%
	Don't know	1479	17,9%	4	0,0%
	Total	**8266**	**100,0%**	**8266**	**100,0%**

Table 3: Results question 7.1

7.1 Average learning gain score	75,9%

Question 11.3 is about recognition as well. Again, the interviewees are showed multiple pictures with signs that indicate a dangerous area. Afterward they are asked what this sign means for them. While in the pre survey 3565 (43,1%) interviewees gave a correct answer, in the post survey this number raised to 8222 (99,5%). When calculating how much the interviewees gained out of the total possible that they could have gained from pre to post survey, the results indicate an increase in knowledge of 56,6% that can be attributed to the MRE session.

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
11.3 What does this sign mean to you?	Correct answer	3565	43,1%	8222	99,5%
	Incorrect answer	2519	30,5%	35	0,4%
	Don't know	2182	26,4%	9	0,1%
	Total	**8266**	**100,0%**	**8266**	**100,0%**

Table 4: Results question 11.3

11.3 Average learning gain score	56,6%

To prevent subjective judgement, a paired-samples t-test was conducted via SPSS to compare the level of knowledge of the interviewees pre and post the MRE session regarding the questions about recognition, see the tables below. There is a significant difference in the scores for question 7.1 between the pre survey (mean = 0,24, SD = 0,43) and the post survey (mean = 0,99, SD = 0,07); $t(8265) = 160,1$, $p < 0.05$. There is also a significant difference in the scores for question 11.3 between the pre survey (mean = 0,43, SD = 0,50) and the post survey (mean = 0,99, SD = 0,07); $t(8265) = 103,0$, $p < 0.05$. These results together suggest that the MRE session of [organisation X] had a positive

impact on the recognition of landmines and warning signs, measured as part of the knowledge, among the beneficiaries. Specifically, the results suggest that the amount of correct responses to the question that entails the recognition of landmines and warning signs increased as a result of the MRE session. Similar results are measured for the other questions that are about recognition of explosive hazards and safe paths, see the tables in appendix II.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
7.1	Post survey	,9949	8266	,07110	,00078
	Pre survey	,2384	8266	,42616	,00469
11.3	Post survey	,9947	8266	,07277	,00080
	Pre survey	,4313	8266	,49529	,00545

Table 5: Paired-samples statistics

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
7.1	Mean post survey – mean pre survey	,75647	,42952	,00472	,74721	,76573	160,125	8265	,000
11.3	Mean post survey – mean pre survey	,56339	,49746	,00547	,55267	,57412	102,968	8265	,000

Table 6: Paired-samples t-test

5.2.2 Perceived threat

While in the pre survey more than 75% of the interviewees indicated that explosive hazards can kill people, only 40% said that they can also injure people, see the graph below. In the post survey 98,4% of the interviewees indicated that explosive hazards can

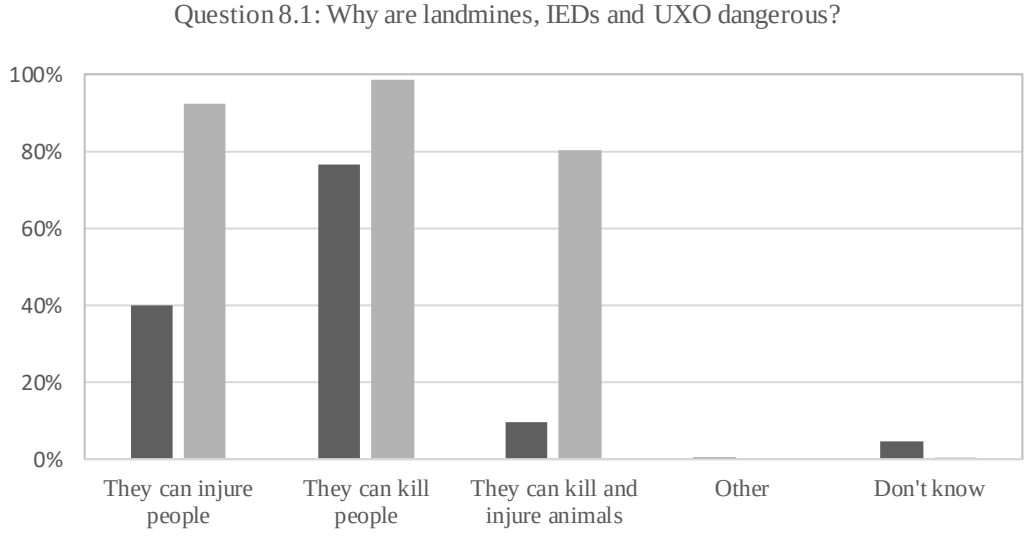

Figure 2: Results question 8.1

kill people and 92% indicated that they can injure people. In addition, while in the pre survey nearly 10% of the interviewees indicated that explosive hazards can also kill and injure animals, such as cattle, in the post survey more than 80% of the interviewees indicated that explosive hazards are also dangerous for animals.

In question 8.2, the interviewees are asked how a landmine, IED or UXO-injury could affect them. One can see that all the answers increased in percentage from pre to post survey with the exception of 'it would not affect me/others'. Although it a good sign that this indicator is crossed less in the post survey than in the pre survey, still almost 10% of the interviewees indicate that such an injury would not affect them.

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
8.2 In your opinion, how could a landmine/IED/UXO-injury affect you/others?	It would not affect me/others	928	14,3%	608	9,4%
	Negative socio-economic effects (i.e. loss of earning potential)	1590	24,5%	5101	78,5%
	Physical effects	2513	38,7%	4918	75,7%
	Prevent me/others from returning home	2497	38,4%	3767	58,0%
	Psychological effects	993	15,3%	5175	79,7%
	Other	177	2,7%	209	3,2%
	Total	**6497**	**100,0%**	**6497**	**100,0%**

Table 7: Results question 8.2

For the question what causes explosive ordnance to explode, the reason that was most mentioned in the pre survey was playing (40,4%). Interesting to point out is that of all the

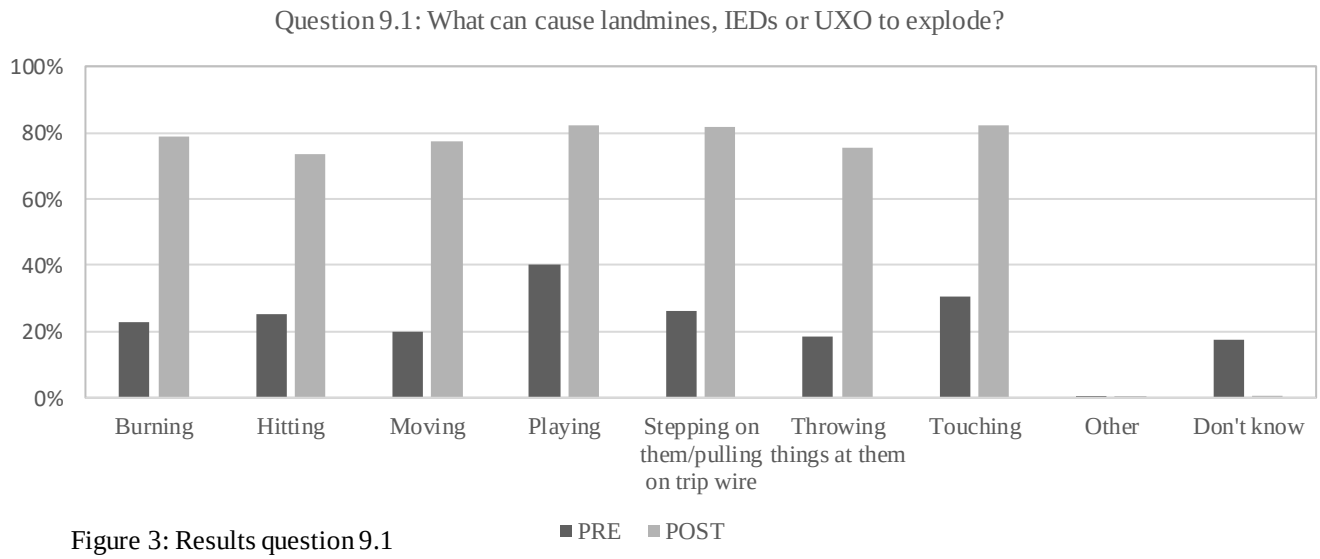

Figure 3: Results question 9.1

2.728 interviewees that answered question 5.4, see next subchapter, most interviewees indicated that playing (52,7%) was also the main reason why they or others touched explosive hazards. Additionally, in the pre survey 17,5% of the interviewees did not know what could cause explosive hazards to explode. In the post survey only 0,7% did not know. The results indicate on an increase in knowledge of what can cause explosive hazards to explode.

5.2.3 Dangerous and contaminated areas

With question 10.1, the interviewees are asked in which common areas explosive hazards might be found. Interesting to see is that the largest increase from pre (6,2%) to post (76,3%) survey is the answer 'areas with local or international warning signs'. This indicates, combined with question 11.3, that the interviewees do not only recognize warning signs better, but that there is also an increased awareness that those areas might be contaminated with explosive hazards. While in the pre survey 15,1% of the interviewees indicated that they did not know what the common contaminated areas are, in the post survey only 0,1% did not know. This suggest that almost all the interviewees increased their knowledge for this topic.

	Categories	**PRE survey**		**POST survey**	
		Frequency	Percentage	Frequency	Percentage
10.1 What are common areas where landmines, IEDS or UXO might be found?	Abondoned areas	1664	20,3%	5952	72,0%
	Areas marked with local or international warning signs	510	6,2%	6306	76,3%
	Borders	1490	18,2%	3952	47,8%
	Conflict or battle areas	3361	41,0%	6662	80,6%
	Destroyed buildings	2871	35,0%	6638	80,3%
	Everywhere	1045	12,7%	238	2,9%
	Farms	1705	20,8%	4852	58,7%
	Military camps/barracks	2434	29,7%	6069	73,4%
	On roads	803	9,8%	3524	42,6%
	Places of former landmine/IED/UXO accidents	870	10,6%	5092	61,6%
	Places with signs of an explosion, craters or animal skeletons	501	6,1%	4981	60,3%
	Roadsides	1023	12,5%	4559	55,2%
	Other	5	0,1%	3	0,0%
	Don't know	1238	15,1%	11	0,1%
	Total	**8202**	**100,0%**	**8266**	**100,0%**

Table 8: Results question 10.1

5.2.4 Safe behaviour

Through question 13.1 the beneficiaries are asked what the safest thing is they could do when they suspect themselves of walking in a mined area. A safe answer contains the instructions stop, stand still and call for help. The answer is considered unsafe or incomplete when something else is mentioned or part of the instructions are missing. As one can see in table 9, the safe answers of the interviewees increased from 6,4% to 97,2%. An increase of 90,9% can be attributed to the MRE session after applying the calculation as explained in subchapter 4.4.

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
13.1 Imagine you are out walking and suddenly think you might be in a mined area. What would be the SAFEST thing you could do?	Safe answer	533	6,4%	8031	97,2%
	Unsafe or incomplete answer	7733	93,6%	235	2,8%
	Total	**8266**	**100,0%**	**8266**	**100,0%**

Table 9: Results question 13.1

13.1 Average learning gain score	90,9%

A paired-samples t-test was conducted via SPSS to compare the level of knowledge of the interviewees pre and post the MRE session regarding the question above, see the tables below. There was a significant difference in the scores between the pre survey (mean = 0,06, SD = 0,25) and the post survey (mean = 0,97, SD = 0,17); $t(8265) = 280,5$, $p < 0.05$. These results suggest that the MRE session had a positive impact on knowledge about safe behaviour among the beneficiaries, as the amount of safe answers increased from pre to post survey.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
13.1	Post survey	,9716	8266	,16621	,00183
	Pre survey	,0645	8266	,24562	,00270

Table 10: Paired-samples statistics

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
13.1	Mean post survey – mean pre survey	,90709	,29405	,00323	,90075	,91343	280,462	8265	,000

Table 11: Paired-samples t-test

Table 12 reveals that most interviewees after the MRE indicate that the best way to protect themselves from injuries or accidents caused by explosive hazards, is to not touch the explosive hazards. This was also the most indicated reason prior to the MRE session. The largest increase from pre to post survey is the answer to look out for warning signs. This affirms the results of questions 10.1 and 11.3 that indicate similar results. Although the indicator 'sharing information on landmines/IEDs/UXOs' increased to almost 60%, it is the second last indicator that scored the highest. This could be an alarming result, since sharing information can lead to the actual demining activities. More focus could be laid on this point.

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
14.1 What do you think are the best ways to protect yourself from landmine, IED or UXO injuries/accidents?	Ask for local advice on safe areas	862	10,4%	5150	62,3%
	Avoid traveling in the dark	780	9,4%	4656	56,3%
	Do not touch landmines, IEDs or UXOs	4695	56,8%	7638	92,4%
	Look out for warning signs	573	6,9%	5799	70,2%
	Share information on landmines/IEDs/UXOs	607	7,3%	4876	59,0%
	Stay away from known contaminated areas or areas likely to be contaminated	2141	25,9%	6315	76,4%
	Stay on common, frequently used paths	843	10,2%	5592	67,7%
	Other	17	0,2%	3	0,0%
	Don't know	1872	22,6%	26	0,3%
	Total	**8266**	**100,0%**	**8266**	**100,0%**

Table 12: Results question 14.1

5.3 Practice

Practice is the third and most important components of the KAP framework. Various questions in the survey tested participants' current and future practices of explosive hazards. The graphs and tables below show the resulting data that those questions returned. Overall, the results show that almost all interviewees will behave differently in future practices as a result of the MRE. Since not all the questions can be analysed and exemplified, only the most significant results are discussed.

5.3.1 Current practice (before MRE)

As one can see in the table below, only a fifth up to a third of the interviewees have seen a landmine or an IED/UXO respectively in their community. When asked in the pre survey what they did if they saw an explosive hazard, the most mentioned response was informing others of the location of the explosive hazards, followed by calling for help, see the tables in appendix II. The third most mentioned reaction was 'nothing, keep going on my way' with 24,7% for landmines and 31,7% for IEDs/UXOs respectively.

	Categories	Frequency	Percentage
2.1 Have you ever seen a landmine in your community?	Yes	1736	21,0%
	No	6530	79,0%
	Total	**8266**	**100,0%**
3.1 Have you ever seen an IED/UXO in your community	Yes	2672	32,3%
	No	5594	67,7%
	Total	**8266**	**100,0%**

Table 13: Results question 2.1 and 3.1

18,6% of the interviewees indicated that they have entered an area that they knew or thought to be contaminated with explosive hazards. The three largest reasons why someone entered an area that they knew or thought to be contaminated with explosive ordnance are fleeing from conflict (67,8%), farming (46,1%) and searching through rubble (35,7%). This indicate on external forces that influence behavioural practices rather than individual choices. This insight is important when it comes to address risky behaviours.

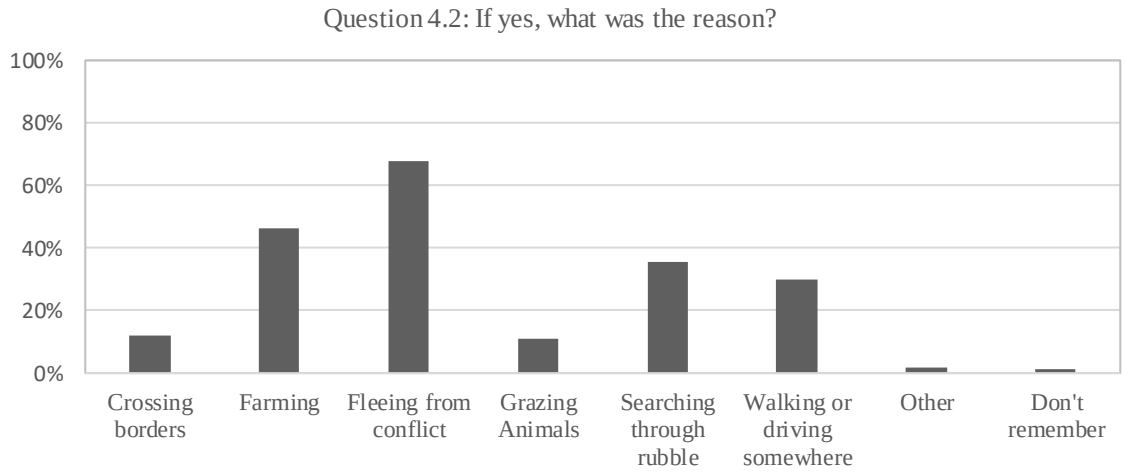

Figure 4: Results question 4.2

Of all those people who said that they had ever touched explosive ordnance (17,6%) or saw others touch the explosive ordnance (33%), most indicated that playing was the main reason why they or others touched the explosive hazards. In relative percentages, children within the age of 6-10 mentioned this most often. This is coherent with subchapter 2.3 that emphasizes that (especially young) children are in particularly vulnerable.

	Categories	Adults (18+)		Youth (11-17)		Children (6-10)		Total	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
5.4 If yes, why did you/anyone else touch landmines/ IEDs/UXO?	Burning	141	4,4%	93	4,7%	41	4,1%	275	10,1%
	Collecting for souvenir	418	13,0%	232	11,7%	96	9,6%	746	27,3%
	Curiousity	255	8,0%	189	9,5%	98	9,8%	542	19,9%
	Dismantling or defusing it	535	16,7%	282	14,2%	92	9,2%	909	33,3%
	Giving away or selling	512	16,0%	285	14,4%	100	10,0%	897	32,9%
	Moving for safety reasons	402	12,5%	193	9,7%	102	10,2%	697	25,5%
	Playing	622	19,4%	506	25,5%	309	31,0%	1437	52,7%
	Unknown	29	0,9%	24	1,2%	66	6,6%	119	4,4%
	Using the metal	287	9,0%	171	8,6%	82	8,2%	540	19,8%
	Other	5	0,2%	7	0,4%	12	1,2%	24	0,9%
	Total	**1276**	**46,8%**	**859**	**31,5%**	**593**	**21,7%**	**2728**	**100%**

Table 14: Results question 5.4

Almost 80% of the interviewees stated in the pre survey that they would inform others if they thought an area might be mined or if they find explosive ordnance. Of those people, most indicated (61%) that they would inform family or household members.

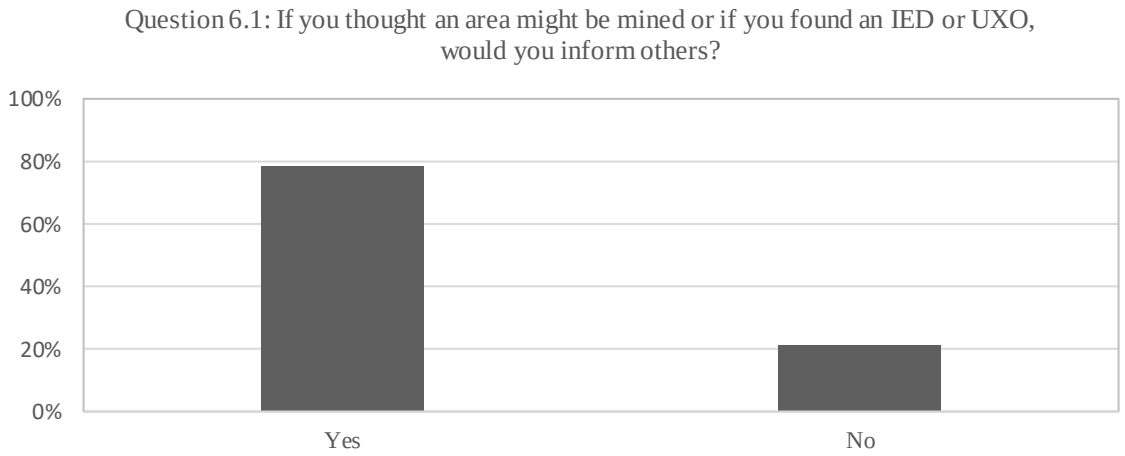

Figure 5: Results question 6.1

5.3.2 Future practice (after MRE)

With the second last question of (only) the post survey, the interviewees are asked if they would behave differently in the future if they encounter an explosive hazard. Almost all interviewees (99,6%) indicate that they will behave differently. If they genuinely mean and do it, then this is a positive result.

	Categories	Frequency	Percentage
15.1 After receiving MRE today, will you behave differently if you see a landmine/IED/UXO?	Yes	8229	99,6%
	No	37	,4%
	Total	**8266**	**100,0%**

Table 15: Results question 15.1

The most indicated response to the follow-up question, is informing others (93,1%). This is notably since only 59% of the interviewees in the post survey indicated that they would share information on explosive hazards as a way of protecting themselves. It could mean that informing others is not perceived the same as sharing information. Only 24 interviewees (0,3%) indicate that they do not know how they will behave differently in the future. This is a positive result.

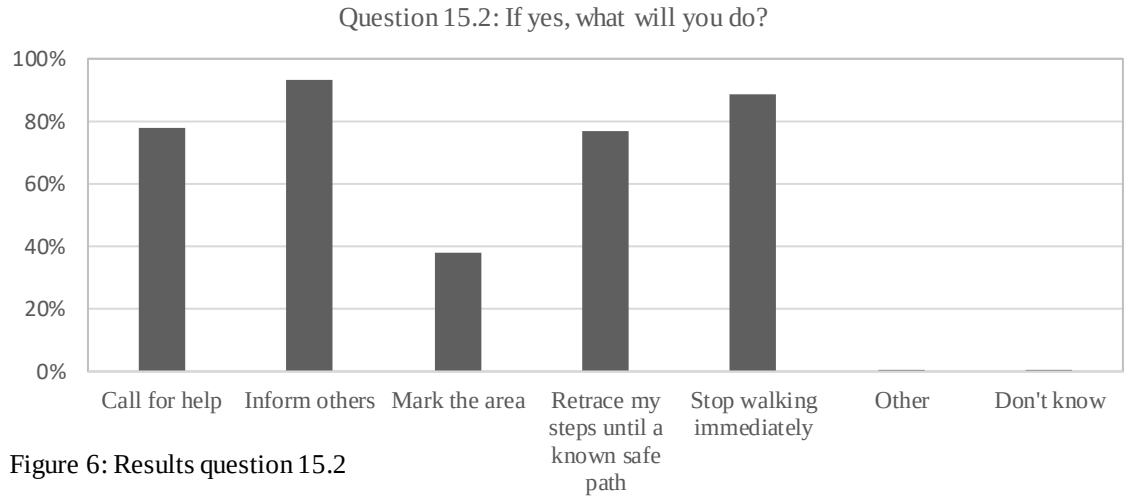

Figure 6: Results question 15.2

Chapter 6 – Conclusion

6.1 Conclusion

The objective of this research was to assess to what extent the MRE activities of [organisation X] in the north-west and south of Syria lead to an increase in the knowledge of explosive hazards among the beneficiaries. In addition, using KAP as the conceptual framework, this research also tried to identify and explain to what extent there is a positive relation between the change in knowledge and behavioural change (future practices) among the beneficiaries.

The KAP survey of [organisation X] generated a large amount of data, 8.267 surveys in total, which will be useful for the entire mine action community in Syria moving forward, especially in setting a baseline for future projects. Overall, the findings of the pre and post survey show an increase in (the different analysed topics of) knowledge among the beneficiaries as a direct causation of the MRE. The paired-samples t-test suggest that there is a significant difference between the level of knowledge in recognition and safe behaviour of the beneficiaries before and after the MRE session of [organisation X], supporting the alternative hypothesis as stated in subchapter 4.4. When combining all the results, it can be said that the MRE of [organisation X] in the north-west and south in Syria leads to an increase of knowledge of explosive hazards among their target group.

Based on the KAP framework and the assumption of a direct relationship between knowledge, attitudes and practices, the increased knowledge will most likely also lead to an increase in practices among the surveyed population. Since the knowledge of the surveyed population is significantly higher after the MRE and since almost all interviewees indicate that they will behave differently in the future when they see an explosive hazard, the presupposition that the MRE will have a positive impact on future practices is probable. The question of course is, will this be true? Related to the wider KAP studies of MRE as mentioned in the introduction, an increase in awareness and knowledge is only part of a positive behavioural change, meaning that the identified increase in knowledge is not a guarantee for an increase in practices. The MRE activities are designed to focus on giving people facts, such as advantages of certain behaviours. Hence challenges remain for translating the acquired knowledge into the right practices.

Finally, it can be argued that those beneficiaries are representative for the overall vulnerable population, since some of the worst governorates with most casualties of explosive weapons are located in the north-west and south of Syria. In addition, the social demographics indicated that 43,2% of the interviewees were children between the age of 6 and 10 years. This is in line with the background information which argues that children are in particular vulnerable to explosive hazards. However, as mentioned before as well, due to a lack of reliable information and reports, no clear determination of the extent and type of contamination across Syria can be given.

6.2 Research recommendations

I have been very fortunate and grateful to be allowed to do the first academic analysis of this dataset. Nonetheless, there are some recommendations for future research that could be drawn.

For similar studies in the future, a more detailed analysis of a potential change in behaviour of the beneficiaries via the KAP framework is achievable if the survey contains more questions regarding attitudes and practices as well as other issues that are underlying for behavioural change. In addition, both retention surveys and investigations in the broader socio-economic, political and cultural context could also improve the research. Lastly, as mentioned in the introduction, information and KAP studies on MRE in Syria are in short supply. Whereas this thesis is a start, it would be valuable for the wider mine action community if others start studying the data collected by NGOs in Syria as well, since this is not studied by academics so far.

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Appendices

I. Syria Pre & Post Risk Education Survey

Section I: General Information

Name of Community/village	
Location details	
Total No. of RE participants	
Survey Form number	

Date	
Name of Interviewer	
Team Name	

Guidance notes to interviewer:

- Remember to ask only the questions. (Do not read the answer options to the interviewee.)
- Remember to interview a balanced selection of boys, girls, men and women

Please go through this statement with the interviewee before commencing the survey

[Insert organization information]

In order to inform our activities, we are conducting a short survey relating to our Risk Education activities. We would like to ask you some questions now and immediately after the Risk Education session.

If you choose to participate in this survey your responses will be treated with confidence and any information you provide will not be linked in any way to your identity. Your participation in this survey will be of great help in informing future programming, we therefore request for your participation. If you choose not to participate at this time it will not affect your ability to participate in any other activities that our organization may provide in your community in the future.

Do you agree to please spare some time for the survey?

☐ Yes (Staff to continue to Section II)
☐ No (Staff to end survey – please note reasons for non-participation):
……

Section II: Interviewee Information

Questions 1-6 to be asked pre-RE only

	1.1 Age & Sex of Interviewee	
Question 1	Man (18+)	
	Woman (18+)	
	Boy (11-17)	
	Girl (11-17)	
	Boy (6-10)	

	Girl (6-10)	
	1.2 Primary Occupation of Interviewee	
	Farmer	
	Herder	
	Public sector employee	
	Occasional Worker	
	Soldier	
	Housewife	
	Trader	
	Student	
	Teacher	
	Unemployed	
	Other (please specify):	
	1.3 Highest Education Level of Interviewee	
	None	
	Primary	
	Secondary	
	University Degree or higher	

Section III: Current Behaviors/Practice

Question 2	2.1 Have you ever seen a landmine in your community? If no skip to question 3	
	Yes / No	
	2.2 If yes, what did you do? (tick all that apply)	
	Nothing/ keep going on my way	
	Called for help	
	Stopped walking immediately	
	Retraced my steps until a known safe path	
	Marked the area	
	Moved the landmine or destroyed it	
	Informed others about the location of the landmine	
	Don't remember	
	Other (please specify):	

Question 3	3.1 Have you ever seen an IED/UXO in your community? If no skip to question 4	
	Yes / No	
	3.2 If yes, what did you do? (tick all that apply)	
	Nothing/keep going on my way	
	Called for help	
	Stopped walking immediately	
	Retraced my steps until a known safe path	
	Marked the area	
	Moved the IED/UXO or destroyed it	
	Informed others about the location of the IED/UXO	
	Don't remember	
	Other (please specify):	

Question 4		
	4.1 Have you ever entered an area that you knew or thought to be contaminated by landmines/IEDs/UXO? If no skip to question 5	
	Yes	No
	4.2 If yes, what was the reason? (tick all that apply)	
	Walking or driving somewhere	
	Farming	
	Grazing Animals	
	Crossing borders	
	Searching through rubble	
	Fleeing from conflict	
	Don't remember	
	Other (please specify):	

Question 5		
	5.1 Have you ever touched landmines/IEDs/UXO?	
	Yes	No
	5.2 Have you ever seen anyone else touch landmines/IEDs/UXO? If no skip to question 6.	
	Yes	No
	5.3 If yes, in your estimation, how frequently have you touched landmines/IEDs/UXO or seen other people touching them?	
	Every day	
	Every week	
	Every month	
	Once every 6 months	
	Once	
	5.4 If yes, why did you/anyone else touch landmines/IEDs/UXO? (tick all that apply)	
	Playing	
	Moving for safety reasons	
	Burning	
	Collecting for souvenir	
	Using the metal	
	Giving away or selling	
	Dismantling or defusing it	
	Curiosity	
	Unknown	
	Other reasons (please specify):	

Question 6		
	6.1 If you thought an area might be mined or if you found an IED or UXO, would you inform others? If no skip to question 7.	
	Yes	No
	6.2 If yes, who would you inform? (tick all that apply)	
	Family/Household member	
	Community member	
	Teacher	

	Local authority	
	Civil defense	
	Military or police	
	NGO	
	Religious leader	
	Other (please specify):	

Section IV: Knowledge

Questions 7-14 to be asked pre-RE and post-RE

		PRE	POST
Question 7	7.1 Which picture is a landmine? (Show picture card A)		
	Correct		
	Incorrect		
	Don't know		
	7.2 Which picture is an IED? (Show picture card B)		
	Correct		
	Incorrect		
	Don't know		
	7.3 Which picture is a UXO? (Show picture card C)		
	Correct		
	Incorrect		
	Don't know		

		PRE	POST
Question 8	8.1 Why are landmines, IEDs and UXO dangerous? Please tell me all the reasons you know (tick all that apply)		
	They can kill people		
	They can injure people		
	They can kill and injure animals		
	Don't know		
	Other (please specify):		
	8.2 In your opinion, how could a landmine/IED/UXO- injury affect you/others? (tick all that apply)		
	It would not affect me/others		
	Negative socio-economic effects (i.e. loss of earning potential)		
	Psychological effects		
	Physical effects		
	Prevent me/others from returning home		
	Other (please specify):		

		PRE	POST
Question 9	9.1 What can cause landmines, IEDs or UXO to explode? Please tell me all the reasons you know (tick all that apply)		
	Stepping on them/pulling on trip wire		

	Playing		
	Moving		
	Touching		
	Throwing things at them		
	Burning		
	Hitting		
	Do not know		
	Other (please specify):		

	10.1 What are common areas where landmines/IEDs/UXO might be found? (tick all that apply)	PRE	POST
Question 10	Areas marked with local or international warning signs		
	Conflict or battle areas		
	Military camps/ barracks		
	Places with signs of an explosion, craters or animal skeletons		
	Places of former landmine/IED/UXO accidents		
	Destroyed buildings		
	Abandoned areas		
	Farms		
	Roadsides		
	On roads		
	Borders		
	Everywhere		
	Do not know		
	Other (please specify):		

	11.1 Do you think this path is safe? (Show picture card D – well-used path)	PRE	POST
Question 11	Correct answer		
	Incorrect answer		
	Don't know		
	11.2 Do you think this path is safe? (Show picture card E – path with warning sign)		
	Correct answer		
	Incorrect answer		
	Don't know		
	11.3 What does this sign mean to you? (Show picture card F – warning sign)		
	Correct answer (danger)		
	Incorrect answer		
	Don't know		

	12.1 Imagine you are walking along a safe path and you see IED or UXO in an area nearby. What would be the <u>SAFEST</u> thing to do?	PRE	POST
Question			

	Stop		
	Mark		
	Report		
	Unsafe answer		

Question 13	13.1 Imagine you are out walking and suddenly think you might be in a mined area. What would be the SAFEST thing you could do?	PRE	POST
	Safe answer (Stop, Stand still, Call for help)		
	Unsafe/incomplete answer		

Question 14	14.1 What do you think are the best ways to protect yourself from landmine, IED or UXO injuries/accidents? Tell me all the reasons you know. (tick all that apply)	PRE	POST
	Do not touch landmines, IEDs or UXOs		
	Ask for local advice on safe areas		
	Stay on common, frequently used paths		
	Avoid traveling in the dark		
	Share information on landmines/IEDs/UXOs		
	Look out for warning signs		
	Stay away from known contaminated areas or areas likely to be contaminated		
	Do not know		
	Other (please specify):		

Section V: Projected Behavior Change

Questions 15-16 to be asked post-RE only

Question 15	15.1 After receiving RE today will you behave differently if you see a landmine/IED/UXO? If no skip to question 16.	
	Yes	No
	15.2 If yes, what will you do? (tick all that apply)	
	Call for help	
	Stop walking immediately	
	Retrace my steps until a known safe path	
	Mark the area	
	Inform others	
	Do not know	
	Other (please specify):	

Question	16.1 Are there any subjects relating to landmines/IEDs/UXOs that you would like more information on? If no end post-RE questionnaire

	Yes	No	
	16.2 If yes, which? (tick all that apply)		
	Safe/ unsafe areas in my community		
	Safe behaviour		
	Who to contact about mines/ UXO/IED		
	Recognising safe/ unsafe areas		
	Why are mines/ UXO/IED dangerous		
	Recognising mines/ UXO/IED		
	How to dismantle or disarm		
	Other (please specify):		
Staff provided additional information			

II. Additional results (expressed in tables)

	Categories	Frequency	Percentage
2.1 Have you ever seen a landmine in your community?	Yes	1736	21,0%
	No	6530	79,0%
	Total	**8266**	**100,0%**
2.2 If yes, what did you do?	Called for help	878	50,6%
	Informed others about the location of the landmine	1056	60,8%
	Marked the area	110	6,3%
	Moved the landmine or destroyed it	50	2,9%
	Nothing, keep going on my way	428	24,7%
	Retraced my steps until a known safe path	84	4,8%
	Stopped walking immediately	394	22,7%
	Other	10	,6%
	Don't remember	35	2,0%
	Total	**1736**	**100,0%**

	Categories	Frequency	Percentage
3.1 Have you ever seen an IED/UXO in your community	Yes	2672	32,3%
	No	5594	67,7%
	Total	**8266**	**100,0%**
3.2 If yes, what did you do?	Called for help	1132	42,4%
	Informed others about the location of the IED/UXO	1347	50,4%
	Marked the area	102	3,8%
	Moved the IED/UXO or destroyed it	155	5,8%
	Nothing, keep going on my way	846	31,7%
	Retraced my steps until a known safe path	92	3,4%
	Stopped walking immediately	488	18,3%
	Other	14	,5%
	Don't remember	55	2,1%
	Total	**2672**	**100,0%**

	Categories	Frequency	Percentage
4.1 Have you ever entered an area that you knew or thought to be contaminated by landmines/IEDs/UXO?	Yes	1539	18,6%
	No	6727	81,4%
	Total	**8266**	**100,0%**
4.2 If yes, what was the reason?	Crossing borders	186	12,1%
	Farming	710	46,1%

	Fleeing from conflict	1044	67,8%
	Grazing Animals	171	11,1%
	Searching through rubble	549	35,7%
	Walking or driving somewhere	463	30,1%
	Other	30	1,9%
	Don't remember	19	1,2%
	Total	**1539**	**100,0%**

	Categories	Frequency	Percentage
5.1 Have you ever touched landmines/IEDs/UXO?	Yes	1451	17,6%
	No	6815	82,4%
	Total	**8266**	**100,0%**
5.2 If yes, in your estimation, how frequently have you touched landmines/IEDs/UXO or seen other people touching them?	Every day	105	7,2%
	Every week	283	19,5%
	Every month	426	29,4%
	Once	415	28,6%
	Once every 6 months	222	15,3%
	Total	**1451**	**100,0%**
5.3 Have you ever seen anyone else touch landmines/IEDs/UXO?	Yes	2728	33,0%
	No	5538	67,0%
	Total	**8266**	**100,0%**
5.4 If yes, why did you/anyone else touch landmines/IEDs/UXO?	Burning	275	10,1%
	Collecting for souvenir	746	27,3%
	Curiousity	542	19,9%
	Dismantling or defusing it	909	33,3%
	Moving for safety reasons	697	25,5%
	Playing	1437	52,7%
	Giving away or selling	897	32,9%
	Using the metal	540	19,8%
	Other	24	,9%
	Unknown	119	4,4%
	Total	**2728**	**100,0%**

	Categories	Frequency	Percentage
6.1 If you thought an area might be mined or if you found an IED or UXO, would you inform others?	Yes	6497	78,6%
	No	1769	21,4%
	Total	**8266**	**100,0%**
6.2 If yes, who would you inform?	Civil defense	1828	28,1%
	Community member	1120	17,2%
	Family/Household member	3962	61,0%

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
7.2 Which picture is an IED?	Correct	2156	26,1%	8085	97,8%
	Incorrect	3487	42,2%	170	2,1%
	Don't know	2623	31,7%	11	0,1%
	Total	**8266**	**100,0%**	**8266**	**100,0%**
7.3 Which picture is an UXO?	Correct	2766	42,6%	6444	99,2%
	Incorrect	2544	39,2%	44	0,7%
	Don't know	1187	18,3%	9	0,1%
	Total	**6497**	**100,0%**	**6497**	**100,0%**

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
7.2	Post survey	,9781	8266	,14636	,00161
	Pre survey	,2608	8266	,43911	,00483
7.3	Post survey	,9918	6497	,08996	,00112
	Pre survey	,4257	6497	,49449	,00613

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
7.2	Mean post survey – mean pre survey	,71728	,45223	,00497	,70753	,72703	144,204	8265	,000
7.3	Mean post survey – mean pre survey	,56611	,49967	,00620	,55396	,57826	91,321	6496	,000

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
8.1 Why are landmines, IEDs and UXO dangerous?	They can injure people	2599	40,0%	5987	92,2%
	They can kill people	4974	76,6%	6390	98,4%
	They can kill and injure animals	636	9,8%	5220	80,3%
	Other	11	0,2%	3	0,0%
	Don't know	314	4,8%	11	0,2%
	Total	**6497**	**100,0%**	**6497**	**100,0%**

	Categories	PRE survey		POST survey	
		Frequency	Percentage	Frequency	Percentage
9.1 What can cause landmines, IEDs or UXO to explode?	Burning	1875	22,7%	6522	78,9%
	Hitting	2073	25,1%	6072	73,5%
	Moving	1626	19,7%	6383	77,2%
	Playing	3340	40,4%	6794	82,2%
	Stepping on them/pulling on trip wire	2163	26,2%	6764	81,8%

	Throwing things at them	1548	18,7%	6247	75,6%
	Touching	2517	30,5%	6807	82,3%
	Other	6	0,1%	5	0,1%
	Don't know	1447	17,5%	59	0,7%
	Total	**8266**	**100,0%**	**8266**	**100,0%**

	Categories	**PRE survey**		**POST survey**	
		Frequency	Percentage	Frequency	Percentage
11.1 Do you think this path is safe?	Correct answer	2806	33,9%	8238	99,7%
	Incorrect answer	4064	49,2%	23	0,3%
	Don't know	1396	16,9%	5	0,1%
	Total	**8266**	**100,0%**	**8266**	**100,0%**
11.2 Do you think this path is safe?	Correct answer	2243	27,1%	8119	98,2%
	Incorrect answer	3923	47,5%	145	1,8%
	Don't know	2100	25,4%	2	0,0%
	Total	**8266**	**100,0%**	**8266**	**100,0%**

Paired Samples Statistics

		Mean	**N**	**Std. Deviation**	**Std. Error Mean**
11.1	Post survey	,9966	8266	,05811	,00064
	Pre survey	,3395	8266	,47356	,00521
11.2	Post survey	,9822	8266	,13217	,00145
	Pre survey	,2714	8266	,44468	,00489

Paired Samples Test

		Paired Differences					**t**	**df**	**Sig. (2-tailed)**
		Mean	**Std. Deviation**	**Std. Error Mean**	**95% Confidence Interval of the Difference**				
					Lower	**Upper**			
11.1	Mean post survey – mean pre survey	,65715	,47673	,00524	,64687	, 66743	125,327	8265	,000
11.2	Mean post survey – mean pre survey	,71086	,45578	,00501	,70104	,72069	141,800	8265	,000

	Categories	**PRE survey**		**POST survey**	
		Frequency	Percentage	Frequency	Percentage
12.1 Imagine you are walking along a safe path and you see an IED or UXO in an area nearby. What would be the SAFEST thing to do?	Mark	210	2,5%	1344	16,3%
	Report	1915	23,2%	2831	34,2%
	Stop	1034	12,5%	4072	49,3%
	Unsafe answer	5107	61,8%	19	0,2%
	Total	**8266**	**100,0%**	**8266**	**100,0%**

	Categories	**Frequency**	**Percentage**
15.1 After receiving MRE today, will you behave differently if you see a landmine/IED/UXO?	Yes	8229	99,6%
	No	37	,4%
	Total	**8266**	**100,0%**

15.2 If yes, what will you do?	Call for help	6415	78,0%
	Don't know	24	,3%
	Inform others	7659	93,1%
	Mark the area	3139	38,1%
	Retrace my steps until a known safe path	6311	76,7%
	Stop walking immediately	7301	88,7%
	Other	12	,1%
	Total	**8229**	**100,0%**

	Categories	**Frequency**	**Percentage**
16.1 Are there any subjects relating to landmines/IEDs/UXOs that you would like more information on?	Yes	1604	19,4%
	No	6662	80,6%
	Total	**8266**	**100,0%**
16.2 If yes, which?	How to dismantle or disarm	177	11,0%
	Recognizing mines/IEDs/UXOs	312	19,5%
	Recognizing safe/unsafe areas	934	58,2%
	Safe behaviour	897	55,9%
	Safe/unsafe areas in my community	1086	67,7%
	Who to contact about mines/IEDs/UXOs	491	30,6%
	Why are mines/IEDs/UXOs dangerous	643	40,1%
	Other	314	19,6%
	Total	**1604**	**100,0%**