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Master Thesis

Conducting Fieldwork and Research in International Cooperation

HUMANITARIAN UNREST

The role of information management in the standardisation of humanitarian logistics, what impact it has in the emergency structure, a case study analysis of man-made crises in Maiduguri.

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Abstract

The ever-increasing man-made crysis have been causing the loss of lives, properties and resources. The preparedness and response ability of non-governmental organisations is aimed to minimise these losses.
INTERSOS is an important emergency actor that operates in ecosystems of multi and cross-sector stakeholders in order to reach the most vulnerable social groups.
Having this in mind, the goal is to explore to what extent their knowledge management led to significant improvements in the management of the humanitarian crisis in our case study: **Maiduguri** (Borno State, Nigeria) and merges with that of other organisations in order to propose a model that could optimise their knowledge management maturity through social resources embedded into their structure and underlines the crucial role of logistics and supply chain management in the humanitarian context.
Specifically, the paper will compare the field response, through the analysis of INTERSOS last years reports in emergency response to human caused crises; this will be accomplished through the in-depth, case study through the information that is provided periodically by the organisation operators based on MEAL (*monitoring, evaluation, accountability, and learning*) parametric indices.
Response efficiency in these dynamics is not exclusively circumstantial but depends greatly on the initiatives and complements of multiple agencies that regulate procedures in the humanitarian field for example: HNPW, HLN, SPHERE and others.
The study will consider the context-dependent form of aid (protection, FSL, GBV, distribution, HEALTH) but also the difficulty of approach in these situations due first to international policy control and practices that are often too constraining for humanitarian workers, as well as the difficulty of maintaining a uniform and functional data history.

Summary

Introduction

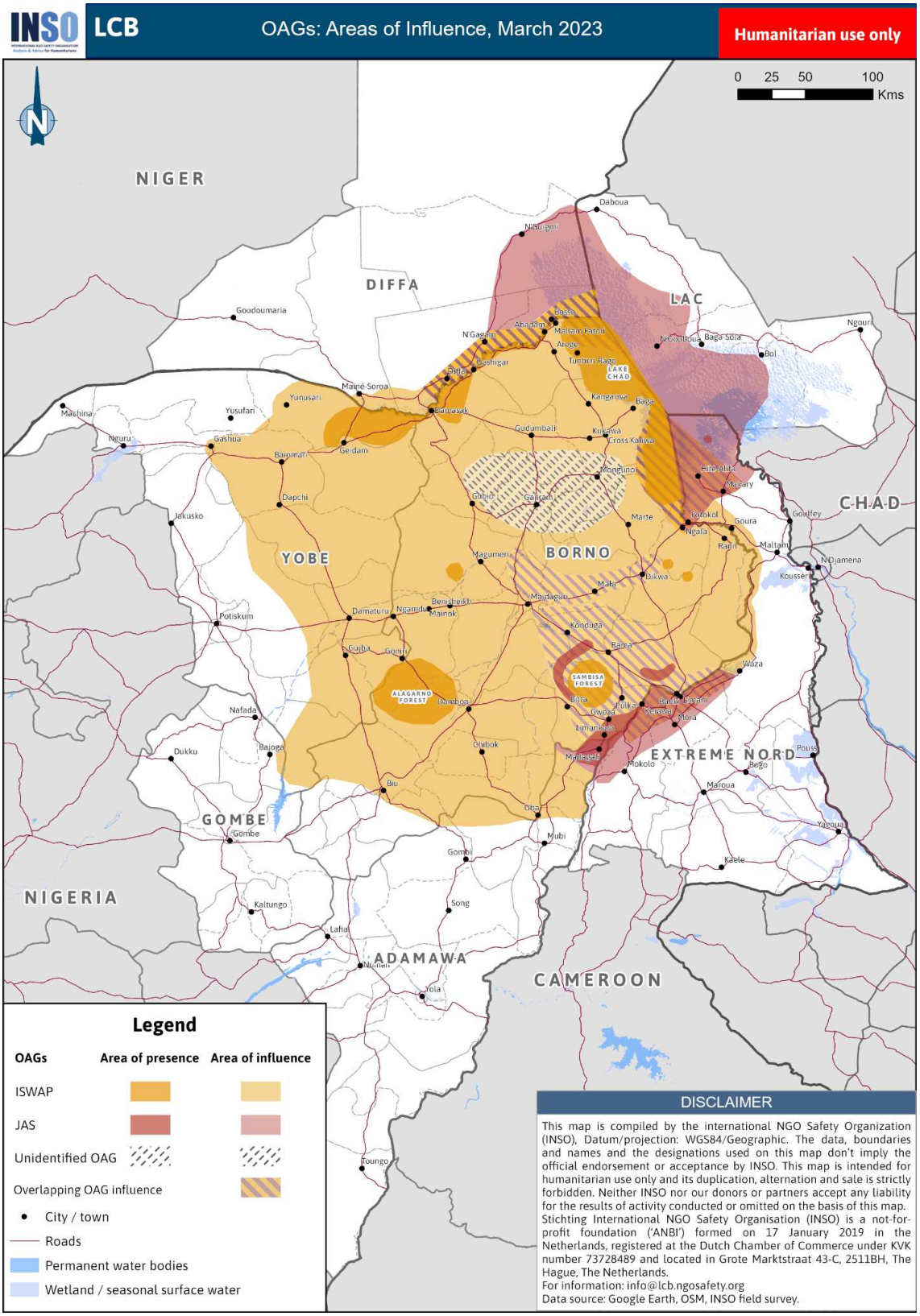
This writing stems from the deployment (field relocation) experience of my university internship that I chose to carry out with INTERSOS, a humanitarian organisation that operates in an emergency context in several countries and whose mission in Nigeria is the largest in the whole of Africa, at the same time among the most complex and with very tense dynamics.
The theoretical underpinnings of the humanitarian context will be analysed, with a gradual transition to the focus of the case study in which the fruit of humanitarian work and especially of my internship is found in pragmatic form.

Maiduguri is the largest city in North East Nigeria and the capital of Borno State, which suffers from endemic poverty, capacity and legitimacy gaps in terms of its governance. The state has been severely affected by the Boko Haram (purely media-driven naming of the self-declared armed groups JAS and ISWAP) insurgency and the resulting insecurity has led to economic stagnation in the whole state. The capital has borne the largest burden of support to those displaced by the conflict. The population influx has exacerbated vulnerabilities that existed in the city before the security and displacement crisis, including weak capacities of local governments, poor service provision and high youth unemployment. The Boko Haram insurgency appears to be attempting to fill this gap in governance and service delivery. By exploiting high levels of youth unemployment Boko Haram is strengthening its grip around Maiduguri and perpetuating instability. Maiduguri also faces severe environmental challenges as it is located in the Lake Chad region, where the effects of climate change are increasingly manifesting through drought and desertification. Limited access to water and poor water quality is a serious issue in Maiduguri's vulnerable neighbourhoods. A paucity of drains and clogging leads to annual flooding in the wet season. As the population of Maiduguri has grown, many poor households have been forced to take housing in flood-prone areas along drainages due to increased rent prices in other parts of the city.

Urban context:
Maiduguri is the oldest town in north eastern Nigeria and has long served as a commercial centre with links to Niger, Cameroon and Chad and to nomadic communities in the Sahara. Almost all languages and cultural groups from across Nigeria and neighbouring countries can be found in Maiduguri. The city was selected in 1907 by the British to be the capital of the Borno Emirate, which was the surviving traditional ruling structure after the end of the Kanem Borno Empire (1380 – 1893). It functioned as the divisional and provincial headquarters of Borno Native Authority and Borno Province respectively during the colonial administration. After Nigeria proclaimed independence from British rule in 1960, Maiduguri became the capital of North Eastern state in 1967 and that of Borno State since 1976. The capital city has grown over the years in line with Nigeria's general urbanisation trends, primarily driven by rural to urban migration. The last reliable demographic data state the current metro area population of the city in 2023 is 845,000, a 2.8% increase from 2022, which means Maiduguri is categorised as a 'medium' size city in the Nigerian urban system.
Borno State's largest city is composed of two local government areas (LGAs) namely: Maiduguri metropolitan council (MMC) and Jere LGA, with some sources including Konduga and Mafa LGAs into 'greater Maiduguri'. These areas combine to cover a total land area of 543 km2.
Over the past two decades, Borno State "has suffered growing security, capacity and legitimacy gaps, demonstrated in the declining capacity of its institutions to deliver public goods, including security, transportation, water, medical care, power and education".

Since 2009, 2.1 million people have been displaced in Borno State due to threats from Boko Haram, with hundreds of thousands seeking refuge in Maiduguri and in the camps surrounding the city. The city of Maiduguri has borne the largest burden of support to those displaced by the conflict, housing over 800,000 internally displaced people (IDPs) at the peak of the crisis, with more than 88% residing outside of camps. According to a 2016 UNOCHA statement, greater Maiduguri saw its population increase from less than 1 million to 2 million with the influx of people displaced from other areas of the state. An estimated 10 to 50% of IDPs were projected to stay in the city. As of November 2020, approximately 300,000 IDPs still reside in Maiduguri. The exact population is unclear, but the combination of natural population growth since 2006 and the displaced population likely places Maiduguri among larger cities in Nigeria, of between 1 and 5 million inhabitants.
The displacement crisis in Maiduguri occurred within the context of a weakened national economy, entering into a recession due to declining oil prices in 2016 and slightly recovering since 2017. Even before the crisis, Borno State was one of the most impoverished states in Nigeria; as of 2010, it had the second highest absolute poverty rate of 68%.
Nigeria's prolonged period of economic growth prior to 2016 did not decrease poverty in the north east as it did not lead to the diversification of the sources of income for poor households, who continue to engage in low-productivity, subsistence activities.
The current surge in prices due to the elimination of the oil subsidy only exacerbates an already extreme situation (although an initial economic contraction is expected followed by a gradual recovery over the next 16-20 months).
The local economy has traditionally been rooted in farming and fishing, along with a small manufacturing sector. Sustainable employment opportunities in Maiduguri are limited. Some of the largest companies, such as Maiduguri Flour Mills, shut down during the peak of the insurgency in 2013 and despite reopening following security improvements since 2015, are still only producing at a limited rate.
Small and micro businesses dominate the economy in Maiduguri. National policy aims to support the growth of micro, small and medium businesses to promote growth and decrease chronic unemployment, but "there is simply not enough industry and employment in the city to absorb so much excess labour". As a result of limited productivity, the state is heavily dependent on revenue from the federal government.
With the onset of the recession, federal funding has been cut, which severely affected Maiduguri and Borno State, including the few local industry employers.

Fighting Starvation:
Acute food insecurity and malnutrition in Nigeria continue to escalate. The Global Report on Food Crises 2022 alerts that 193 million people were facing Crisis or worse across 53 countries or territories in 2021. An all-time high of up to 49 million people in 46 countries could now be at risk of falling into famine or famine-like conditions. In Nigeria, in the mentioned period, the record-high levels of acute food insecurity are of serious concern. Importantly, the population in Emergency (CH Phase 4) is expected to reach close to 1.2 million people during the peak of the lean season from June to August 2024, including in Adamawa, Borno and Yobe (BAY) where some local government areas (LGAs) continue to be inaccessible or hard to reach. Organised violence and armed conflict are key drivers of acute food insecurity. The INTERSOS revised (May 2022) Safety and Security Plan indicates a new trend of armed violence in BAY states where the **Organized Armed Groups** (OAGs) **target** civilian livelihoods especially **the farms**.



Map 1: OAGs areas of influence

The protracted hostility is impacting on nutrition outcomes as well as on Global Acute Malnutrition (GAM) prevalence rates in the population in Nigeria more so in the conflict prone LGAs in the North-East.

Whereas thousands of children under the age of five years are in urgent need of lifesaving nutrition services, a significant proportion of them are trapped in insecure areas and deep field locations that Hunger Hotspots FAO-WFP early warnings on acute food insecurity June to September 2022 Outlook remain inaccessible to aid workers. More still, movement restrictions and insecurity continue to hamper the ability of Internal Displaced People (IDP), returnees, and the host communities to access basic services, livelihoods, and land for farming and grazing. This means that more people will rely on humanitarian aid to survive in 2023 and upcoming years (creating a total dependency paradox). The situation is further worsened by the closure of IDP camps in Maiduguri; resulted in IDPs moving in neighbouring LGAs thereby adding more pressure on the meagre resources within the catchment areas. Problems of food insecurity are to a greater extent influenced by external factors, the prevailing security situation continues to impact on local production and consumption systems. Families living in IDP camps depend entirely on general food distribution by the organisations as World Food Programme, while most vulnerable host communities have partially or completely lost capacity to grow crops and/or raise livestock.
In the Middle Belt and southern regions of Nigeria, the latest forecasts indicate an increased likelihood of below-average rainfall which could reduce yields and result in crop losses, with an ascertained impact on food prices, northern parts of Nigeria and large parts of the Sahel are expected to see average to above average rainfall with good prospects for crops, but also an increased risk of localised flooding.

As per the recent Humanitarian Needs Overview (HNO) by United Nations Office for the Coordination of Humanitarian Affairs (OCHA), at least 8.4 million people in the North East states of Borno, Adamawa and Yobe (BAY) states were in need of urgent assistance in the year 2022 out of which 2.2 million people are internally displaced, 1,983,130 individuals people being returnee individuals of which 32% and 28% are girls and boys below the age of 18 respectively (IOM, DTM, July 2022). Borno State remains the epicentre of the crisis that has caused displacement of at least 1.95 million people and pushed them to live in IDP camps- with complete dependency on humanitarian agencies for survival. More than 80% of internally displaced persons (IDPs) reside in Borno state with 60% in host communities. Sadly, more than 1 million conflict exposed vulnerable persons are in inaccessible areas. Another 5.1 million people remain affected by the worsening food insecurity with more than 1.1 million children suffering from acute malnutrition. Poor WASH coupled with dilapidated health infrastructure and congestion in camps is intensifying existing high levels of epidemics and illnesses like measles, cholera, yellow fever, and malaria.. More than 2.8 million people are in dire and critical need of sustainable and equitable access to clean water, dignified hygiene, and sanitation services.

INTERSOS is a frontline humanitarian organisation with 30 years of experience in protection, health, access to water and sanitation programmes. Since 2017, the organisation has provided swift response to dire humanitarian needs by bringing integrated lifesaving and life sustaining health, nutrition, protection, and WASH (water, sanitation and hygiene) services to the most vulnerable people in Ngala, Bama, Dikwa, Magumeri and Monguno LGAs. With funding support from USAID-BHA through the triple nexus programming that ensures synergies and common goals across short-term emergency response interventions and long-term social change processes. The agency is providing support to more than 563,218 most vulnerable children, women, and other individuals affected by the ongoing crisis, across five LGAs in Borno State. These include 37,138 IDPs as well as 5,500 refugees. The overall goal of the program is to reduce morbidity and mortality and strengthen local capacities for people affected by the ongoing crisis in Northeast Nigeria. The multi sectoral program covers the crisis hit Local Government Areas of Bama, Ngala, Dikwa, Magumeri, and Monguno with comprehensive lifesaving and life-sustaining services; the action of this ERO contributes to reducing maternal and childhood illnesses.

INTERSOS fears that, with the current donor cut to financial services necessitated by the global economic crisis, the INGOs may not be able to provide the seamless uninterrupted comprehensive services to the vulnerable populations, more specifically the malnourished children and their caregivers at the various stabilisation centres supported. Besides, without steady financial support, all the gains and achievements which started in 2017 may not be continued.
The provision of a high-quality comprehensive package of primary health care services, including support to non-communicable diseases and mental health services, a comprehensive nutrition package (nutrition screening, management of acute malnutrition, and IYCF services to under five children) and integrating WASH and Protection, with a stronger focus on hygiene promotion and gender based violence/psychosocial support prevention, response, and mitigation.
Intervening in Health and Nutrition sectors, INTERSOS provides:

- Distribution of health kits to the population.
- Support to the local health systems to provide access to primary and secondary health services to men, women and children affected under vulnerable conditions.
- Mobile clinics to reach the most isolated places to supplement the existing health centres
- Monitoring the nutritional status and treating malnutrition Nutrition services are designed to provide the nutrition elements essential for development and health, with a specific focus on pregnant or lactating women and infants.
- Awareness raising and training campaigns to educate about the health risks of the assisted populations.

INTERSOS' interventions in clinical management of Severe Acute Malnutrition (SAM) and Outpatient Therapeutic Programs (OTPs) for management of Moderate Acute Malnutrition (MAM) have yielded very positive results with recovery rates as high as 93%.
They managed the only Stabilization Centre (SC) that saved close to 100,000 children, which was burnt down in July 2020. Several other health facilities were either destroyed or looted, derailing the progress that had been achieved by humanitarians and further deepening the unmet needs. The stabilisation centre, established in December 2020 at the State Hospital in Maiduguri, the capital of Borno State, supported by INTERSOS in collaboration with the Ministry of Health, WHO and UNICEF, is the unique centre in Maiduguri.
The centre visits approximately 15,000 children from 10 hard-to-reach LGAs on a monthly basis. Among the 15,000 screened per month, an approximate number of about 750 severely malnourished children are directly taken care of by INTERSOS staff each month. The agency is able to reach so many children thanks to the mothers who take part in the care groups and the community volunteers. When these cases are identified in the communities during the outreach programs, they are immediately transported to the Stabilization Center for admission and proper management.

Chapter 1. Anthropology of Humanitarianism: a Critical Outlook

The first two chapters will provide the theoretical framework for the thesis through the analysis of the relevant literature in the field of logistics and anthropology of humanitarianism. The data and critical reflections of different authors will serve as the methodological basis for this research. The first section will define the key relevant concepts –such as the controversial concept of humanity and humanitarian organisation seen as a business model– and describe the developments in anthropological studies on this subject. The second part explores the core theme of the thesis: the management of information and logistics in non-governative aid realities. A particular focus on the field operations monitoring in Borno State (Nigeria) will be provided.

1.1. Anthropology and Humanity: A Controversial Connection

The term "humanity" carries various meanings and associations depending on the context and usage. It encompasses two primary dimensions. Firstly, it refers to "mankind" as the collective of human beings distinguished from other living creatures. Moreover, it signifies "humanness" as an emotional inclination towards sympathy, fostering a connection among individuals, particularly those experiencing distress (Fassin, 2012:2). In their introduction to the book "In The Name Of Humanity" (2010), Ilana Feldman and Miriam Ticktin highlight that **humanity is** not solely tied to compassion and empathy for our fellow humans but **also** encompasses elements of **fear and insecurity**.
Despite its broad and elusive nature, this concept is frequently subject to misuse, especially by politicians. This raises the important question of why it is essential to delve into this category. The explanation lies in its extensive utilisation by Non-Governmental Organisations (NGOs, hereafter), policymakers, and as a rationale for military interventions. The evolution of universal human rights has made this concept particularly significant in recent years.
Humanity has become a paradoxical subject of governance, moulded as both a sentiment and a threat. According to Ticktin, Feldman, and other scholars, the use of the notion that humanity is endangered by humanitarian crises serves as a justification for intervention in what they describe as 'new governing techniques' (ibid.: 5-6).

Didier Fassin, a prominent anthropologist in this field, presents a comprehensive definition of humanitarianism. He characterises it as a moral discourse rooted in the responsibility towards victims, while also serving as a political tool to validate actions that are believed to benefit others who face life-threatening perils. These actions are undertaken in the name of a collective humanity (Fassin, 2010:238). Fassin identifies an inherent tension and contradiction between the universal aspirations of humanitarianism, which aim to address the needs of all human beings indiscriminately, and its practical implementation, which inevitably takes place within specific contexts and results in inequalities. According to Fassin, this condition gives rise to the "aporia of humanitarianism." The noble goal of alleviating the suffering of others will perpetually clash with the creation of hierarchies, as those in positions of power who provide assistance and aid may inadvertently disempower and deprive agency from those being helped (ibid.: 239).

The trajectory of anthropological studies concerning humanitarianism has taken a nonlinear path. Ticktin (2014) identifies three distinct and perhaps unavoidable trends.
Initially, medical and legal anthropology were intertwined in the examination of humanitarianism, focusing on universal suffering, similar to the objectives of humanitarian action.

This marked a shift away from previous emphasis on local differences, with a significant convergence of values and intentions between the two fields. Subsequently, anthropologists delved deeper into the unforeseen and unintended consequences of humanitarianism, producing a substantial body of critical literature that distanced itself entirely from the detrimental aspects of a universal approach. While retaining certain fundamental values and morals as sacrosanct, anthropologists used an ethnographic perspective to expose the shortcomings of humanitarian practices. Striking a balance between critical analysis and embracing core values poses a challenging and uncomfortable task for anthropologists. They raised questions about the practical interpretation of "humanity", inquiring about the types of individuals saved by humanitarian action and the dynamics between government and the concept of humanity (ibid.:279).
Ethnographic insights enrich this discourse by surpassing abstract assertions and generalisations.
The prevailing literature on the topic is grounded in a shared theoretical foundation influenced by the ideas of Giorgio Agamben and Michel Foucault. Foucault, in particular, introduced the notion of “biopolitics” or “biopower” in 1978, which forms a crucial component of the critical perspective on humanitarianism. This concept refers to a "new technology of power" employed for the governance of populations, emerging during the 18th and 19th centuries in Europe. It is **characterised by an increasing concern for the preservation of life itself** (Rozakou, 2012:564).
Taking it a step further, Giorgio Agamben (1998) views biopolitics as an operation of sovereign power within the philosophical framework of life. Unlike Foucault, Agamben perceives biopolitics as "the essential technology of sovereignty in general," rather than a power mechanism specific to a particular historical period (ibid.). He introduces the ancient Greek differentiation between zöe (life shared by all creatures, human and animal, often referred to as “bare life”) and bios (social existence). In this context, Agamben conceptualises biopolitics as the power to distinguish between socially included and excluded forms of life. The concept of bare life emerges from the suspension of law by sovereign power, where the state establishes a state of exception in which individuals are stripped of their political and social existence, rendering them vulnerable to the whims of the sovereign and exposed to the threat of death. It is precisely within this state of exception, characterised by the realm of bare life that the foundation of sovereign power is established (Agamben, 1998:6).

In the present day, individuals classified as refugees and asylum seekers exemplify the embodiment of bare life, devoid of rights and belonging to the “polis” or political community. When examining the context of refugee camps, Redfield (2005:342) asserts that human zoology supersedes personal biographies. Hannah Arendt's critique in 1951 of the conceptualization of human rights within the 1948 Universal Declaration of Human Rights, which relies on civil rights guaranteed by the nation-state system and confined to political communities, raises the question of the “right to have rights” for refugees and stateless individuals.
The burgeoning anthropological literature focusing on the humanitarian sector offers a critical analysis of the political decisions inherent in humanitarian actions and introduces a comparative and historical perspective.
The next section focuses on an important topic of this research: refugee management by institutions and humanitarian organisations.

1.2. Defining Refugees

A forcibly displaced person, also known as a forced migrant, refers to an individual who migrates to escape persecution, conflict, repression, environmental degradation, natural or human-made disasters, or other life-threatening situations (IOM, 2002; Forced Migration Online, 2012).

Forced displacement encompasses various demographic movements such as flight, evacuation, displacement, and resettlement, triggered by conflicts, natural or environmental disasters, and development projects (IOM, 2002; Forced Migration Online, 2012). UNHCR estimates that the number of people displaced by natural hazards and climate change could reach close to 500 million by 2050 (UNHCR, 2016; Ahmed, 2018). The Sendai Framework for Disaster Risk Reduction (2015–2030) reports that between 2008 and 2014, approximately 144 million people were displaced by natural disasters, with climate change exacerbating many of these events. Climate change and its associated extreme climatic disasters are now widely recognized as an ongoing threat and a cause of displacement, in addition to conflicts (Field et al., 2014; Hulme, 2016; EJF, 2017).
Refugee studies, which is a broad field of academic inquiry encompassing multiple disciplines, has garnered significant attention from scholars and policymakers worldwide (Cameron, 2014). The increasing number of refugees and internally displaced persons (IDPs) has made it impossible to overlook this issue (Cameron, 2014). According to the United Nations High Commission for Refugees (UNHCR) report in June 2017 (UNHCR, 2017), forced displacement of individuals globally has reached its highest level in decades. The Annual Global Trends report by UNHCR reveals that by the end of 2016, an unprecedented 65.6 million people had been uprooted from their homes due to conflict and persecution, surpassing the population of the UK.

The Annual Global Trends report highlights that the past five years have witnessed a substantial increase in global displacement caused by human-induced disasters such as conflict and persecution, with millions being affected each year (UNHCR, 2021). Among the displaced population, there were 40.3 million IDPs, defined as individuals displaced within their own countries (ibid). These IDPs fled their homes in large numbers due to armed conflict, internal strife, human rights violations, or natural and man-made disasters (ibid). Although the figure is slightly lower than that of 2017, it remains significant.

The number of individuals seeking refuge across international borders, as refugees (defined as those displaced outside their own countries), reached a staggering 22.5 million (UNHCR, 2021). This marks the highest number of forcibly displaced persons since the establishment of UNHCR in 1950 after World War II (ibid). Some reports suggest that the number of environmental or climate change refugees may surpass that of political refugees fleeing wars and conflicts (EJF, 2017; Lister, 2014; Brzoska and Fröhlich, 2016).

Forced displacement often gives rise to additional crises. For example, many refugees attempting to reach Europe from Libya have tragically lost their lives in the Mediterranean Sea. Disturbing video footage has recently emerged in the global media, showing the deplorable practice of human beings being auctioned as slaves in Libya. Similarly, reports of abuses by United Nations (UN) peacekeepers and certain humanitarian organisations against vulnerable displaced individuals have come to light through the media, particularly in significant crisis areas like Haiti and the Democratic Republic of Congo (The Independent Website, 2018; News24 Website, 2018).

Forced displacement is not confined to Europe or Africa; it is a global phenomenon. Countries such as Yemen, South Sudan, Syria, and various Southeast Asian nations also face their share of refugees, internally displaced persons (IDPs), and related challenges. The plight of one million Rohingya Muslim refugees fleeing Myanmar for Bangladesh received extensive coverage on global television screens in 2017. Additionally, millions of IDPs and refugees have been generated by the Boko Haram crisis in the Lake Chad Basin, an area encompassing Chad, Nigeria, Cameroon, and Niger. Given the urgency of this issue and the existing research gap, the authors believe it is an opportune time for a dedicated volume/issue on refugees and IDPs within the Journal of Humanitarian Logistics and Supply Chain Management (JHLSCM).

1.2.1. Military involvement in refugee crises

Over the past decade, there has been a significant transformation in the role of the military in refugee relief operations. Initially, they provided logistical support to aid organisations in Kurdistan in 1991, but later took the lead in relief efforts for Kosovan refugees in 1999. While some aid organisations have embraced this shift, there are ongoing discussions regarding the appropriateness of an increased military presence alongside humanitarian organisations in the field, leading to the exploration of civil-military cooperation.

One fundamental concern is the differing motivations between the military and humanitarian organisations, even if the intervention is presented as "humanitarian." Humanitarian action is based on the principle of equal worth for all human beings, whereas military interventions since Somalia have been selectively carried out by governments with direct national interests. This selectivity is evident in various conflicts where powerful nations have intervened based on their security concerns, investments, or potential refugee flows. Conversely, conflicts that pose no threat to these powerful nations often go overlooked, despite causing significant human suffering. This raises ethical questions about whether some lives are considered more valuable than others.

Another issue is the perception of outside military forces as impartial in conflicts, which compromises the image and effectiveness of aid organisations associated with them. Aid organisations are hesitant to accept escorts from UN peacekeeping forces in certain situations where the peacekeepers' actions hinder access to civilians or compromise the organisations' neutrality. Furthermore, the mixing of humanitarian and military actions puts civilian lives at risk. The presence of NATO troops in Kosovan refugee camps, for example, undermined the civilian and humanitarian nature of the camps and made them targets for shelling by opposing forces.

A third concern is the military's limited technical competence in meeting the specific needs of refugee populations. Military forces are primarily trained and equipped to provide medical care and facilities to a predominantly healthy, adult, male population. Essential medicines required in emergency settings, such as oral rehydration salts and vaccines, are often insufficient in military supplies, and their facilities are not adapted to the unique needs of refugees. This mismatch between military capabilities and refugee requirements can result in inefficient resource allocation and missed opportunities to address critical needs, as evidenced by the French army hospital in Goma in 1994, which provided excellent care but was ill-equipped to handle a massive cholera epidemic among the refugees.

However, the most significant drawback of military involvement in relief operations over the past decade lies not in what they do, but in what they neglect. The most crucial need for refugee and displaced populations today is protection from violence, which humanitarian organisations are unable to provide. Unfortunately, most military forces deployed with a humanitarian mandate focus on delivering or safeguarding relief supplies, leaving the critical task of protection unaddressed. This approach allows governments to present an image of taking action while failing to address the fundamental security needs of vulnerable populations.

1.3. The Ethical and Political Responses of Humanitarian Actors

'**The delimited goals of humanitarian engagement**—alleviation of suffering and care of members of an afflicted population—**provide only temporary measures for any form of relative "success" amid a greater cascade of failure'.** (Redfield, 2005:338)

The famous case analysed by Katerina Rozakou represents just one instance among many where the noble intentions driving humanitarian actors encounter significant ethical and political challenges in practice. Despite their initial aim to assist the most vulnerable asylum seekers, the volunteers at the reception centre inadvertently reproduce a hierarchical structure that supersedes the rights of asylum seekers and replaces them with well-intentioned "gifts" from the volunteers themselves. Furthermore, these volunteers find themselves collaborating with institutions, such as participating in the selection process that determines who can access the temporary camp and influencing the definition of an asylum seeker.

This hierarchical ordering of human lives is a prevalent feature within humanitarian projects, and as Ticktin (2014) suggests, the humanity protected by these actions is never completely detached from politics. The anthropological critique does not seek to condemn humanitarian work but rather aims to explore the contradictions embedded within its core values and practices, such as the notions of emergency, neutrality, political detachment, and witnessing. By shedding light on the uncomfortable ethical controversies inherent in humanitarian work, the intention is to foster reflection, modesty, and ultimately a more human approach among its practitioners (Fassin, 2010).

In the previous paragraph, I discussed the complexities concerning the concepts of emergency and crisis. The temporary nature of humanitarian aid organisations also influences the outcomes of their efforts, which tend to be short-term and primarily focused on survival. Medical humanitarian aid, as reimagined by organisations like Doctors Without Borders (MSF), aims to save lives in emergencies while aspiring to remain politically independent. However, numerous authors (Redfield, 2005; Fassin, 2010) have demonstrated the problematic nature of this claim. Nevertheless, MSF, like many other NGOs, seeks to strike a balance between the principles of neutrality and impartiality and the political act of bearing witness. Testimony has become a central element of humanitarian work, aiming to reveal the truth about injustices and violence in the world, amplifying the narratives of victims. However, this politics of narrated lives still generates an asymmetrical hierarchy that distinguishes between those whose lives are narrated and those who assume the role of reporting these stories (Fassin, 2012).

Another common division within humanitarian work, which has been criticised by many authors for its post-colonial implications, is the distinction between expatriates and local workers. When it comes to international NGOs, there is an inherent and contradictory status between foreign missionaries (whether voluntary or paid) and what Fassin refers to as "local mercenaries." This term is intentionally provocative, as local workers are often perceived as being solely motivated by financial remuneration and lacking the same passion and values as their international counterparts. While international staff may consider this division as inevitable, often without being aware of reproducing it, it can be intolerable for local personnel who see themselves as morally engaged as their foreign colleagues (Fassin, 2012).

In many projects, national staff members are assigned support roles such as drivers, cooks, interpreters, and assistants for humanitarian missions.

On the other hand, expatriates, who are typically fewer in number, hold core positions within the project and often have control over the entire operation and other workers. Due to their shorter stays and limited knowledge of the area, expatriates often maintain few connections once they depart. Additionally, when project leaders are replaced, the project itself undergoes significant adjustments. In his article on 'The Unbearable Lightness of Ex-Pats' within MSF, Redfield (2012) acknowledges the progress made by one of the leading organisations in decolonizing its operations and reimagining its personnel as a unified category. MSF has standardised stipends and pay scales to address imbalances among its workers, but it has not fully overcome the fundamental gap between expatriates who travel "without borders" and the larger number of local employees. The organisation has encouraged motivated national staff members to continue their work in other countries, which has helped mitigate some of MSF's cosmopolitan parochialism but has not erased the broader imbalance (Redfield, 2012).

This case exemplifies the challenges faced by humanitarian organisations in striving to work ethically and "do the right thing." Redfield compares the anxieties of these international organisations to those of psychiatric patients: their desire to act ethically and the subsequent failures lead to a continuous sense of discontent. Beneath it all lies the unsettling realisation that good intentions alone do not provide a simple remedy (Redfield, 2012).

1.4. Research problem

The research problem revolves around the diminished effectiveness of Emergency Response Organizations (EROs) due to inadequate utilisation of Human Capital (HC), Social Capital (StC), and Structural Capital (SoC). The term "deficiency" denotes the incapacity of EROs to incorporate these four knowledge areas into their organisational knowledge processes, thereby hindering value creation. Consequently, knowledge management in EROs presents a formidable challenge for senior managers, particularly given the lack of long-term visibility regarding the evolving nature of knowledge management (KM). The improper utilisation of HC leads to suboptimal transfer of tacit, implicit, and explicit knowledge among employees.

1.5. Research purpose

The purpose of this research is to identify, describe, and determine the experience of ERO (INTERSOS most of all) through the logistic lens, with the following objectives in mind:

1. Recognize the formal strategies employed by organisations to manage Human Capital (HC), which includes managing contingent workforces, coaching, and overseeing employee rotations. These strategies aim to facilitate the efficient utilisation and transfer of tacit, implicit, and explicit knowledge within and between organisational boundaries.

2. Outline the various approaches adopted by organisations in managing Social Capital (StC), focusing on the employees' access to and use of digital networks within the organisational hierarchy at different levels.

Chapter 2. Knowledge Management

2.1. Introduction to the literature review, and definitions

This literature review examines multiple subjects that form the foundation of the dissertation's discussion on four main areas: HC, StC, SoC, and the application of AI in the humanitarian aid field. The literature chosen also encompasses subtopics within the broader subjects of knowledge management (KM), such as tacit knowledge (TK), implicit knowledge (IK), and explicit knowledge (EK) (Bolderston, 2008).

Conducting a thorough literature review is essential for evaluating and consolidating the available knowledge on specific subjects. Initially, I had a preexisting interest in exploring the knowledge management (KM) challenges that underpin the research problem. Consequently, this study adopted an exploratory approach to comprehending the issues related to knowledge components at both the organisational and individual levels, as well as their integration with organisational processes. Notably, research publications, articles, and case studies were used to establish a foundation for research questions that subsequently guided qualitative research endeavours.

2.2. Defining knowledge

Organisations have the ability to identify knowledge gaps within their value chain and opt to outsource certain aspects of their business, such as technology-based services, enterprise resource programs and systems, and data hosting. In order to delve into the concept of knowledge, specific definitions from existing literature that are applicable to Emergency Response Organizations (EROs) have been selected. Alavi and Leidner (2001, p. 15) define knowledge as the "processing of data and information that is embedded in people's minds and can be personalised to individuals." This definition can be evaluated to determine its suitability for addressing the knowledge requirements of EROs, where knowledge plays a critical role among employees.

In summary, most research characterises knowledge as a combination of tacit, implicit, and explicit knowledge. It encompasses the knowledge used by experts in their minds, incorporating experiences, values, contextual information, and expert insights. Additionally, knowledge can be found in documents, repositories, organisational routines, processes, practices, and norms. However, this definition has a limitation in that it overlooks the knowledge generated and retained by machines. For example, algorithm-based machines like AI can also generate knowledge that surpasses human capabilities. This includes the completion of mundane or imperceptible tasks that are often neglected by organisations but are still necessary for efficient bottom-line activities.

Definition	Reference
Knowledge is the experience held by people, and 'can be translated in the organisational procedures, processes, rules and routines that an organisation adopts'	Ichijo & Nonaka (2007)
Knowledge is a mix of values, framed experience and contextual information that provides a framework for evaluating and incorporating new skills, usually retained in the minds of knowers.	Davenport & Prusak (2000)
Knowledge is described as the processing of data, information that is imbedded in people's minds, referred to as 'tacit knowledge' and it can be personalised in individuals	Alavi & Leidner (2001)
Knowledge is the thought that results from the relationship that is established between the subject who knows and the object to be known	Aranha & Martins (1993)

Tab 1: Definition of Knowledge

2.3. Intellectual capital: human, structural, and social capital

The management of intellectual capital (IC) encompasses three fundamental dimensions: human capital (HC), structural capital (StC), and social capital (SoC). To effectively leverage IC, tacit and implicit knowledge must be integrated into an organisational knowledge strategy, enabling its conversion into machine learning processes and facilitating its dissemination through social media platforms. This necessitates organisational dedication to a technological approach that facilitates the conversion, reproducibility, and transferability of knowledge among individuals.

According to Ramia and Carney (2003), non-profit organisations often operate within a highly competitive environment characterised by increasing demands for services from the community and intensifying competition for contracts from both the public and for-profit sectors. This competition compels EROs to distinguish themselves through their operations and the value they create.

EROs engage in competitive endeavours to enhance the value derived from their services by focusing on improving the efficiency of their internal processes, such as delivery lead time and service quality. The organisation's overall performance can be negatively impacted if expected services are delayed or the quality of services deteriorates. Therefore, to enhance their competitive position, it becomes crucial for EROs to increase the value provided to their beneficiaries/customers (Marr, 2005). In this context, the management of intellectual capital offers valuable insights into the essential resources of EROs and how to effectively monitor their performance to achieve desired outcomes (Marr et al., 2004).

Through IC management, knowledge sharing within the organisation's value chain can be enhanced, leveraging the perspectives of both employees and beneficiaries. This inclusive approach contributes to continuous improvements in the quality of services provided by EROs and the overall value they create.

Marr (2005) provides a definition of intellectual capital as a mechanism that facilitates the linkage and integration of different assets, ultimately creating value for the organisation. These assets encompass employees, beneficiaries, information technology, knowledge, and leadership. This definition acknowledges that the resources of an ERO typically consist of non-monetary assets and rely heavily on human, structural, and social values rather than solely on financial value.

2.3.1. Defining tacit knowledge

Managing tacit knowledge poses significant challenges, particularly in sectors characterised by high staff turnover. In certain organisations, the average turnover time is estimated to range between one and two months (MSF Report, 2017). The culture of frequent employee turnover in Emergency Response Organizations has become ingrained over the years. Consequently, tacit knowledge tends to circulate between organisations, often influenced by the mobility of aid workers. As a result, the current knowledge management approach adopted by EROs primarily revolves around investing in technological solutions, often neglecting the informal circulation of tacit knowledge among individuals.
There are two contrasting schools of thought with regards to TK: one theory defines it as a complex system in which processes are intricate and not well-understood in the field of knowledge management. According to this perspective, authors argue that TK is "impossible to convert, replicate, and share within and between organisations" (Davenport & Prusak, 2000; Polanyi, 1966; Kaya & Sağsan, 2015). However, I invite readers to explore the non-conversion, non-replicability, and non-transferability of TK, seeking to demonstrate that these assertions are not entirely accurate.
The second theory posits that TK represents a new avenue for knowledge exploitation. This dissertation examines how EROs utilise TK in their operational activities, which is particularly intriguing given the sector's focus on providing relief services. Tiwana (2002) defines TK as a combination of various components, including assumptions, beliefs, experience, ground intelligence, intuition, judgement, truth, and values. Given that EROs often operate in complex and time-sensitive situations, their interaction and knowledge exchange predominantly occur through peer-to-peer dialogue. TK becomes embedded in the organisational culture, encompassing shared values, and may require the use of social media or other communication tools to enhance collaboration among teams (Cavaliere et al., 2015).

Studies by Ichijo and Nonaka highlight the challenge of transmitting tacit knowledge due to its subjective nature. Despite this difficulty, TK remains a highly valuable asset in the aid sector, as it plays a crucial role in creating new organisational knowledge and achieving set objectives.

Joia and Lemos (2010) argue that the difficulty in transferring TK is closely linked to its value. Organisations may be reluctant to share their knowledge in order to maintain control over it. Previous research by Nonaka, Toyama, and Nagata (2000) revealed that TK transfer requires a communication medium that facilitates the creation of a "dialoguing ba." In the context of EROs, the term "ba" can be understood as informal conversations where individuals socialise and exchange knowledge and experiences. The authors suggest that social media can serve as an alternative medium for such dialogue.

2.3.2. Implicit knowledge

Various authors recognize that implicit knowledge lacks a standard definition but emphasise the need for a precise distinction between implicit and tacit knowledge. The blurred interpretations of implicit and tacit knowledge stem from Polanyi's assertion that "we can know more than we can tell" (Polanyi, 1966). This notion reflects the challenge faced by many individuals who possess knowledge without being able to articulate it. While these individuals can effectively solve problems, they struggle to explain their problem-solving processes, although anyone can learn how to solve the same problem. In some cases, implicit knowledge is described as knowledge that organisations do not actively invest in, resulting in its underutilization.

Nonaka and Von Krogh (2009) argue that tacit and explicit knowledge can interact and undergo a continuum process of conversion.
Their assertion aligns with the notion that individuals should share their personal knowledge with others within an organisation. Recent studies support the idea that implicit knowledge can be generated and, to some extent, transformed into explicit and internalised knowledge among individuals (Bennet et al., 2015). An illustrative case study conducted in MSF provides a practical example of how implicit knowledge is utilised. In this case, field workers gather in the morning for a briefing on task assignments and reconvene in the evening for a debriefing session to discuss their performance and the challenges they encountered. The findings of the study indicate that knowledge sharing and networking activities are integrated into employees' overall roles and are not viewed as separate functions within specific procedures (Stoddart et al., 2015).

2.3.3. Definition of Explicit knowledge

To enhance our comprehension of explicit knowledge, Nonaka, Takeuchi, and Umemoto (1996) provide a definition that characterises it as knowledge that can be articulated using recognized language, including written words, drawings, mathematical expressions. This type of knowledge can be conveniently stored, processed by computers, and exchanged between individuals. Additionally, knowledge that can be transformed into familiar language pertains to information that is contained and managed within technology-based systems.

In the context of this study, explicit knowledge is considered as knowledge that can be systematically and uniformly communicated through various formats such as documents, databases, websites, emails, and charts. These forms of knowledge facilitation contribute to the development of an organisation's knowledge (Tiwana, 2002).
Numerous authors have extensively explored this subject. However, in this particular study, the focus is solely on utilising explicit knowledge to delineate the components of human capital. The primary emphasis lies in understanding the convertibility and replicability of explicit knowledge into artificial intelligence systems. This research aims to enable field workers operating in remote areas to swiftly access knowledge, facilitating improved decision-making while delivering their services.

2.4. Structural capital

The operational environment within the aid sector can be remarkably intricate. The management of an organisation's structure, internal procedures, infrastructure, and cultural aspects holds particular significance for Emergency Response Organizations. As a result, this study highlights organisational Scientific and Technological Competence (StC). The internal processes and decision-making of an organisation play a crucial role in facilitating knowledge transfer among employees, ultimately enhancing the value proposition.

Lettieri et al. (2004) assert that non-profit organisations are compelled to re-engineer their internal procedures and organisational standards, necessitating significant resources and appropriate capabilities to achieve excellence, with knowledge being the most vital resource. Consequently, EROs are actively digitising their processes, utilising tools such as social media, geographic-based information systems, and other methods to harness the potential of big data. These endeavours bring substantial value to stakeholders.

According to Bou-Llusar and Segarra-Ciprés (2006), StC refers to tacit knowledge related to an organisation's internal processes for the distribution, communication, and management of scientific and technical expertise. This definition encompasses the organisation's infrastructure, know-how, and available resources that establish a connection between employees' knowledge and the expectations of beneficiaries. Hence, StC represents the segment of the knowledge system that assists EROs' knowledge managers in aligning the value proposition with the needs of upstream stakeholders, such as donors. The infrastructure and know-how are intertwined with internal processes that link the organisation's inputs (finances, employees, knowledge, and technology) to the outputs (service quality, timeliness, and scope).

While employees' knowledge serves as a catalyst for the organisation's contributions and ensures the fulfilment of deliverables, the role of organisational knowledge is to optimise these processes and establish a fluid information system that expedites task processing time without compromising service quality.

2.5. Organisations’ social capital

A primary contributing factor to the failure of knowledge management (KM) projects in the aid sector is the lack of effective coordination between agencies and **inadequate sharing of knowledge among organisations** (Janz et al., 2009). This highlights the importance of exploring the use of Communities of Practice (CoP). There are several reasons why the implementation of CoP should be considered. For instance, repetitive and avoidable mistakes consume valuable resources, often stemming from inefficient knowledge sharing among Emergency Response Organizations, which hampers their response capacity within the required timeframe.

According to Turner and Jackson-Cox (2002), organisational knowledge is acquired and disseminated through various means, necessitating different processes to handle it effectively. One of the approaches for managing organisational knowledge involves leveraging social platforms to connect with individuals across different segments of an organisation.

Building upon this assertion, the current research investigates INTERSOS as an ERO that demonstrates a willingness to share their tacit knowledge through social networks. These organisations actively engage in sharing best practices and supporting one another in order to create value. To address this concept, the study puts forth a definition of social capital.
Social capital refers to the extent of an employee's freedom to collaborate and interact with beneficiaries, donors, and partners outside their organisation. It entails the promotion of collaborative networks, the cultivation of communities of practice, and the establishment of new social structures (Luthans & Youssef, 2004).

2.6. Managing knowledge

Knowledge management studies have been conducted for over a century with diverse motivations, leading to interpretations that are open to multiple meanings and applications. According to King (2003), only 30% of KM programs achieve their intended objectives. In many cases, organisations' KM initiatives primarily focus on the development of technology for storing documents, thereby overlooking the creation and transfer of tacit and implicit knowledge among employees. Some organisations implement KM strategies to address existing knowledge gaps that directly impact their employees. Conversely, certain organisations are less equipped to effectively manage KM, particularly when it comes to collecting and processing the organisation's existing knowledge.

Due to the similarity of components in most definitions, which are centred around technology, there is a pressing need for a fresh definition that can be applicable to EROs based on the specific aspects of knowledge they deal with. This research proposes a new definition that aligns with the modus operandi of EROs, taking into account their dynamic work culture and environment, which necessitates constant adaptation of work processes. The defined KM for this study is as follows: **"KM is the organisation's capacity to effectively gather, integrate, and apply employees' knowledge within organisational processes and a given work environment, with the aim of enhancing operational performance."** This definition emphasises the utilisation of collective knowledge, acknowledging individuals as valuable knowledge sources, and focusing on knowledge transfer among people or incorporation into machine learning processes, leading to AI advancements. Knowledge retention in EROs is often ambiguous due to the transient nature of employees, which is inherent to the mobility culture prevalent in the humanitarian sector's human resource management challenges.
In summary, KM in the context of the emergency relief sector primarily revolves around ensuring timely access to accurate information and knowledge for individuals to carry out their tasks effectively. The emergence of new KM research in the field of aid relief provides valuable insights for the ERO sector and the potential to foster novel forms of knowledge management.

2.6.1. Knowledge management processes

In order to comprehend how knowledge flows within and among an organisation, it is crucial to establish an effective knowledge management process (KMP) that connects various elements of organisational knowledge. The predominant procedures typically consist of four key stages: knowledge generation, knowledge retention, knowledge sharing, and knowledge utilisation.
In essence, the four components of the knowledge process lay the foundation for investigating the following research topics:

1. Enhancing the organisation's ability to swiftly apply existing knowledge in emergency relief scenarios.
2. Problem-solving by evaluating the combined utilisation of human, structural, and social capital in conjunction with AI.

These selected stages of knowledge serve as the basis for developing innovative approaches to address the topic of knowledge management (KM) and its interaction with the circulation of knowledge within and between organisations. This section provides a rationale for the necessity of creating a comprehensive knowledge framework that integrates the efforts of human capital, structural capital, social capital, and AI, resulting in tangible outcomes.

2.7. Artificial intelligence in knowledge management

According to Rich et al. (2004), AI can be defined as the field that explores how computers can perform tasks that are currently done better by humans. The authors emphasise the interaction between humans and machines, highlighting the need for humans to provide knowledge to machines. This process, known as machine learning, involves gathering implicit, explicit, and tacit knowledge, which is then processed by algorithms and applied in relevant contexts to generate value. The objective of machine learning is to make computers complement human abilities and assist in problem-solving and learning. However, there is limited research on the application of AI in the field of knowledge management for the aid sector.

The integration of AI into the operational knowledge (OK) of aid organisations aims to enhance their utilisation of both implicit and explicit knowledge. This study will examine five ways in which EROs employ AI:

1. Visual perception and image recognition
2. Multilanguage GIS-based technology and data analysis
3. Multi Language text translation
4. Connected objects
5. Semantic data collection and computer-based decision-making systems

Jiang et al. (2017) define AI in the context of the emergency health sector as the utilisation of sophisticated algorithms and software to replicate human reasoning in analysing complex medical data.

2.8. Organisational data and its transfer

This study aims to address the challenge of managing individual knowledge. Recent research has shown that knowledge conversion within EROs can result in intellectual assets, especially considering the context of frequent changes in personnel. As a result, effectively managing intellectual assets becomes a challenge for organisations operating in volatile environments with high employee mobility and turnover.

The definitions proposed by Choo (2006) and Nonaka et al. (2000) are closely connected to a study carried out in 2015, where Stoddart et al. concluded that aid workers in the field recognized the necessity for altering their work practices "to leverage the culture of tacit knowledge transmission and effectively utilise social interaction to generate value".

Choo (2006) discovered that "the fundamental process of organisational knowledge creation involves the conversion between tacit and explicit knowledge".

The effectiveness of organisational knowledge relies on the organisation's ability to establish an environment that facilitates the conversion and transfer of knowledge among individuals and across organisations. Organisational knowledge encompasses internal processes, organisational culture, and service delivery, as well as the continuous generation of new knowledge that evolves based on the work environment. Thus, human interaction plays a central role in ensuring the dissemination and updating of knowledge within and between organisations. Botha et al. (2008) describe the interaction between tacit and explicit knowledge as a vital combination that occurs within an organisation when it strives to achieve specific objectives. This interaction can occur through face-to-face or virtual interactions, involving individuals and teams (Ichijo & Nonaka, 2006). Consequently, a commitment to integrating individual tacit knowledge with an organisation's intangible assets becomes crucial for creating new knowledge that directly contributes to value creation.

The challenge of knowledge transfer in EROs is closely tied to how organisations leverage their resources and efforts to enhance competitiveness within their sectors. However, many organisations encounter difficulties in sharing knowledge across different organisational boundaries. The significant rate of employee mobility presents an opportunity for researchers to investigate both the current practices of EROs in leveraging their employees' knowledge and the availability of established procedures that facilitate and promote knowledge transfer for wider accessibility. Access to HC can serve as a catalyst for promoting new approaches to the concept of KM. The knowledge transfer system can be defined as a "process through which people within an organisation learn from one another" (Kalling, 2003). In this research, the terms "knowledge sharing," "knowledge circulation," and "knowledge transfer" are used interchangeably within the context of the Sphere of Control (SoC). These terms encompass various aspects, including employee job rotations, the utilisation of contingent workforces, and coaching, to discuss the transferability of knowledge in the aid sector.
Organisations face challenges in understanding the types of services and skills affected by employee mobility. Loquercio et al. (2006) argue that a better understanding of the causes of mobility is essential, including exploring the factors that prompt individuals to move from one organisation to another.

Scheme 1: Knowledge transfer

Chapter 3. Humanitarian Logistic

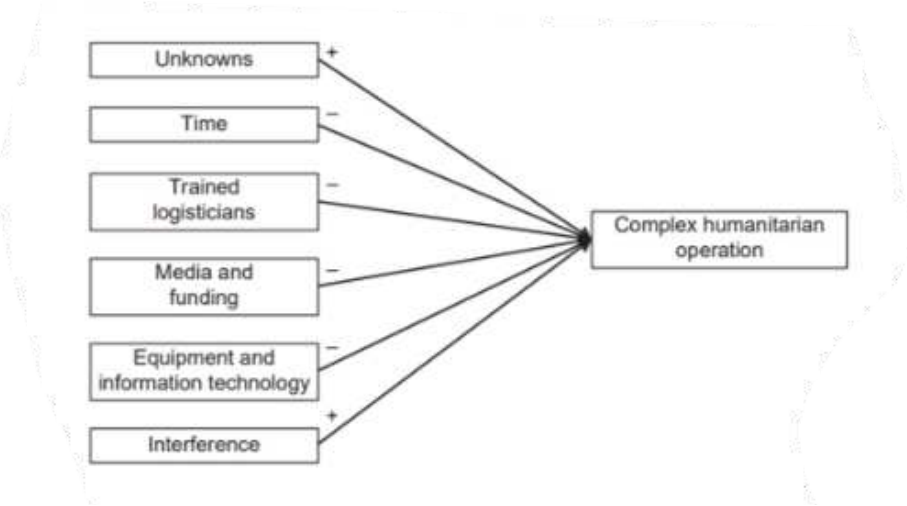
3.1. Context Overview

Logistics, which involves the management of intricate operations and the transportation of goods, emerged as a military discipline during modern times, particularly in the Napoleonic era. It later transitioned into a civilian and commercial pursuit.

The primary objective of humanitarian logistics is to efficiently and promptly deliver humanitarian goods and services to address pressing needs.
Humanitarian logistics can be defined as the process of strategically planning, executing, and controlling the efficient and cost-effective flow and storage of goods, materials, and relevant information. Its ultimate objective is to alleviate the suffering of vulnerable individuals. This function encompasses a wide range of activities, such as preparedness, planning, procurement, transportation, warehousing, tracking and tracing, and customs clearance.

The time constraints in humanitarian operations are considerable due to the high stakes involved. Demand is unpredictable, and supply patterns are often unclear. Forecasting lead time is challenging, and there are instances where the available lead time is extremely limited.

Logistics plays a vital role as a fundamental element within a comprehensive system response. The global demand for humanitarian assistance, which includes requests for aid from national governments, is steadily increasing. This is primarily driven and sustained by the intensifying severity of natural disasters, escalating conflicts, and a significant rise in vulnerabilities resulting from the global financial crisis, persistent high food prices, scarcity of energy and water resources, population growth, and urbanisation.



Scheme 2: Components of dynamics

Humanitarian crises demand a high level of reliability and adaptability to cater to the needs of vulnerable populations (Chandes and Paché, 2010). These crises involve a complex network of participant organisations, including governments, military agencies, civil society, private companies, and relief organisations (Venkatesh et al., 2019; Yadav and Barve, 2015). This network can be referred to as a humanitarian supply chain, which comprises various actors striving to offer maximum assistance to the affected population by providing medical supplies, food, and other aid resources (Dubey and Gunasekaran, 2016). Fosso Wamba (2020) further clarifies that Humanitarian Supply Chains (HSCs) encompass all activities related to the preparation and management of essential resources during natural or man-made disaster relief operations (Abidi et al., 2013). The objective of humanitarian logistics is to optimise the process of delivering these resources to the victims.

3.2. A reference cluster

The Logistic Cluster is an essential organisation operating within the humanitarian logistics context. It is a coordination mechanism that was established in 2005 by the United Nations World Food Programme (WFP) in collaboration with the private sector and various humanitarian partners. The primary goal of the Logistic Cluster is to enhance the efficiency and effectiveness of logistics operations during humanitarian emergencies and crises. By providing a platform for coordination and collaboration among various stakeholders, the Logistic Cluster plays a crucial role in ensuring that essential aid reaches the affected populations in a timely and coordinated manner.

The Logistic Cluster operates with several key objectives and functions:

- Coordination and Information Management: L.C. (logistic cluster) facilitates coordination among humanitarian organisations, including UN agencies, NGOs, and governmental bodies involved in logistics operations. It acts as a central hub for gathering, analysing, and disseminating critical logistics information, ensuring that all actors have access to the most up-to-date and accurate data on logistics capacities, transportation, and warehousing.

- Resource Mapping and Gap Analysis: one of the essential functions of the Logistic Cluster is to map available logistics resources and capacities of various organisations involved in the humanitarian response. By conducting a comprehensive gap analysis, the cluster identifies areas where resources are lacking or insufficient, thus enabling a more targeted allocation of resources and support.

- Coordinated Transportation: the Logistic Cluster works to optimise transportation routes, identify available transportation assets, and coordinate the movement of relief goods. By ensuring efficient transportation, the cluster reduces delivery times and improves the overall logistics performance.

- Warehousing and Storage Solutions: another critical function of the Logistic Cluster is to identify suitable warehouses and storage facilities for relief items. These facilities are strategically located to ensure quick and easy access to affected populations.

- Standardisation and Capacity Building: the L.C. promotes the adoption of standardised logistics procedures, tools, and technologies across humanitarian organisations. It also conducts capacity-building activities, training staff in logistics best practices to enhance the overall efficiency and effectiveness of humanitarian logistics operations.

The structure of the Logistic Cluster is designed to foster effective coordination and collaboration among the various stakeholders involved in humanitarian logistics. It consists of the following key elements:

- ❖ The United Nations World Food Programme (WFP) typically serves as the global lead of the Logistic Cluster. The WFP plays a crucial role in coordinating and facilitating logistics operations and ensuring the smooth functioning of the cluster.

- ❖ Sector Coordinators: under the global lead, sector coordinators are appointed to lead specific logistics functions within the cluster. For example, there may be sector coordinators for transportation, warehousing, and information management. These coordinators work closely with various partners and stakeholders to ensure effective coordination within their respective sectors.

- ❖ The Logistic Cluster establishes working groups or subclusters for specialised areas, such as air transportation, maritime logistics, or emergency telecommunications. These working groups focus on specific logistics challenges and develop strategies to address them.

3.2.1. Benefits and Impact of the Logistic Cluster

The Logistic Cluster has significantly improved coordination among humanitarian organisations. By providing a centralised platform for information exchange and decision-making, it has minimised duplication of efforts and improved the overall efficiency of logistics operations.
Starting from timely and targeted aid delivery through effective resource mapping and gap analysis, the L.C. ensures that aid is delivered promptly to the areas where it is most needed. This timely and targeted response is crucial in saving lives and alleviating human suffering during emergencies as much as enhanced Logistics Capacity of EROs; this is due by promoting the adoption of standardised procedures and providing capacity-building support for humanitarian organisations. This increased capacity enables responders to handle emergencies more effectively and efficiently.

This umbrella organisation's emphasis on resource optimization and cost-sharing among stakeholders has resulted in cost-effective humanitarian logistics operations. By leveraging economies of scale and avoiding redundancies, the cluster maximises the impact of available resources.
Hence, Logistic Cluster is a vital organisation in the humanitarian logistics context. Through its coordination mechanisms, resource mapping, and capacity-building efforts, the cluster has significantly improved the effectiveness and efficiency of logistics operations during humanitarian emergencies. By fostering collaboration among various stakeholders and promoting best practices, the Logistic Cluster continues to play a crucial role in ensuring that humanitarian aid reaches those in need in a timely and coordinated manner. Its continued evolution and adaptation to new challenges will be essential in further enhancing the impact of humanitarian logistics on the ground.

3.3. Immediate response

Humanitarian logistics is a vital aspect of disaster response and relief operations, ensuring the timely and efficient delivery of aid and resources to affected populations. The immediate response phase, which occurs in the immediate aftermath of a humanitarian crisis, presents numerous challenges to logistics teams. I am briefly going to examine the challenges faced in humanitarian logistics during the immediate response phase, with a focus on rapid deployment and mobilisation of resources, access to affected areas, coordination among multiple stakeholders, and distribution challenges in post-disaster scenarios.

3.3.2. Rapid Deployment and Mobilization of Resources

One of the primary challenges in humanitarian logistics during the immediate response phase is the rapid deployment and mobilisation of resources. Time is of the essence, and delays in delivering aid can have dire consequences for the affected communities. Several factors contribute to this challenge:
During humanitarian crises and emergencies, such as natural disasters, armed conflicts, or disease outbreaks, the prompt and efficient delivery of aid is critical, emergency procurement is a fundamental aspect of humanitarian logistics that focuses on acquiring essential goods and services quickly and effectively to support the affected populations.
E.P. plays a vital role in ensuring a rapid and coordinated response to humanitarian crises. When disasters strike, local supply chains may be disrupted, and immediate access to essential items, including food, shelter, medical supplies, and clean water, becomes scarce. In such situations, humanitarian organisations must procure the required goods and services from external sources swiftly to meet the urgent needs of affected communities.

While considering E.P., it is worth taking into account the time constraints; the urgency of the situation demands rapid decision-making and action, often within hours or days. Procurement processes that usually take weeks or months must be expedited to deliver aid promptly.
The limited Information (in the early stages of an emergency, accurate data and needs assessments may be scarce, making it challenging to determine the exact quantity and types of aid required) as much as transparency and accountability (rapid procurement decisions must still adhere to transparency and accountability standards to ensure the proper use of donor funds and maintain trust among stakeholders) are keys aspects.

To be able to face these types of situations EROs have developed a standardised unwritten format of good practices that include pre-positioning of supplies: proactively pre-positioning essential relief items in disaster-prone areas or strategically located warehouses can reduce response time and improve the speed of aid delivery.

Establishing pre-approved suppliers: creating a list of suppliers through competitive bidding and pre-negotiated contracts allows for quicker procurement decisions during emergencies.

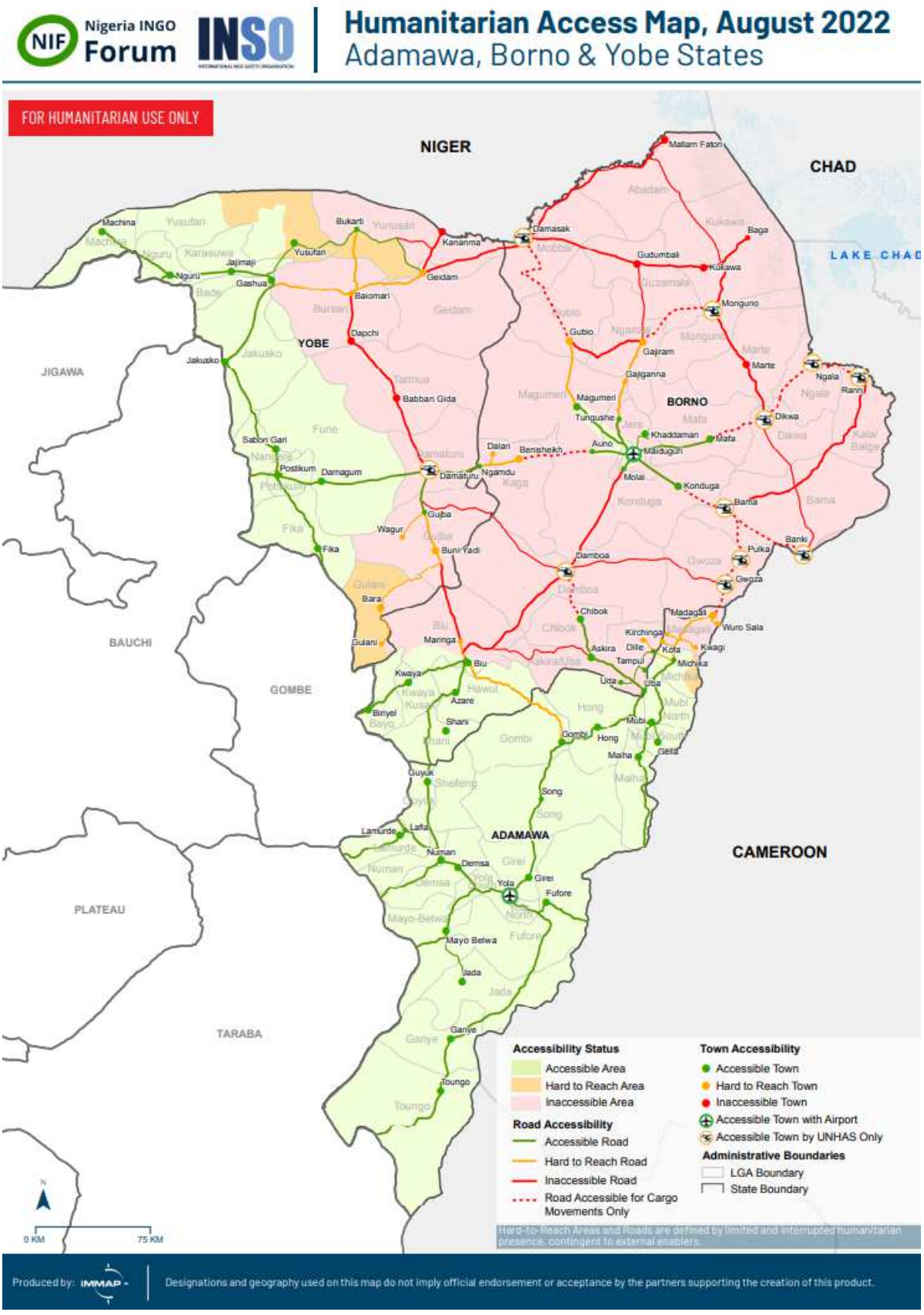
Streamlining procurement procedures and empowering procurement officers to make rapid decisions within predefined thresholds can accelerate the process without compromising transparency.

Collaboration and coordination between humanitarian organisations, local authorities, and other stakeholders facilitate the pooling of resources and collective response efforts.

Continuous monitoring and evaluation: regular monitoring and evaluation of emergency procurement operations help identify bottlenecks and areas for improvement, ensuring a more effective response in future emergencies.

3.3.3. Access to affected areas

Accessing affected areas is another significant challenge in humanitarian logistics during the immediate response phase. Disasters can render transportation infrastructure unusable, hindering the movement of relief supplies and personnel. Damaged infrastructure by natural disasters as much as insecurity in conflict zones or areas experiencing civil unrest, constantly cause threats that hinder the movement of aid convoys and put relief workers at risk.
Synchronising with local authorities by gaining authorization and cooperation from local authorities is crucial to ensure or facilitate access to affected areas. Delays or lack of collaboration can impede the timely delivery of aid.



Map 2: Accessibility in Borno State

3.3.4. Coordination among multiple stakeholders

Effective coordination among multiple stakeholders is essential to optimise resources, prevent duplication of efforts, and ensure a cohesive response during immediate humanitarian logistics. Those include:

Governments (national and local) which play a central role in disaster response and management. Establishing clear lines of communication and cooperation with government agencies is vital for effective coordination.

INGOs (International relief agencies), NGOs (non-governmental organisations), UN (United Nations) bodies often play a significant role in immediate response efforts. Dovetailing with these organisations is essential to leverage their expertise and resources.

Military and Security Forces as UNDSS (United Nations department for Safety & Security) by the moment can be involved in disaster response, particularly in conflict-affected regions. Harmonising their efforts with civilian relief agencies can be challenging due to different operating procedures and priorities.

Engaging with and involving local communities is **essential** to ensure that aid is culturally appropriate and meets the specific needs of the affected population. During the data collection for this assertion, the number of volunteers workers in local communities for a BHA project going from august 2021 to july 2023 was of more that twelve thousand.

The immediate response phase of humanitarian logistics is a critical and challenging period. Rapid deployment and mobilisation of resources, access to affected areas, coordination among multiple stakeholders, and distribution challenges all play a significant role in determining the success of relief operations. Addressing these challenges requires careful planning, collaboration, and adaptability. By effectively managing these hurdles, EROs through logistics can better fulfil its essential role in saving lives and alleviating suffering during times of crisis.

3.4. Resource Management and Allocation in Humanitarian Logistics

Humanitarian logistics is a complex and multifaceted process that involves the timely and efficient delivery of aid and resources to populations affected by disasters, conflicts, and other crises. Resource management and allocation are central to the success of humanitarian logistics operations, as they ensure that the right goods reach the right people at the right time. This paragraph examines the key considerations and challenges related to transportation of relief goods, inventory management and stockpiling, and allocation of resources based on needs assessment in the context of humanitarian logistics.

The urgency and limited availability: EROs must quickly source and acquire essential relief items, including food, water, medical supplies, shelter materials, and other emergency provisions. However, the urgency of the situation and the limited availability of certain items can hinder the procurement process, this process is also conditioned by price fluctuations (Nigerian Naira lost 1.8 points in the stock market since the removal of gasoline subsidies). As a result, the cost of procuring essential items may rise significantly, impacting the budget of humanitarian organisations.

Quality Assurance: this is a particularly sensitive point, because as for what I've noticed, organisations with limited or not huge portfolios tend to award suppliers on the lower price quotation criteria, this often results in a lower quality of goods delivered to the field and consequently to the beneficiaries. Ensuring the quality and authenticity of relief goods is paramount to the success of humanitarian operations. Substandard or counterfeit products not only waste resources but also risk the health and safety of aid recipients.

3.4.2. Inventory Management and Stockpiling

Maintaining adequate stock and effective inventory management is essential in humanitarian logistics to ensure that relief goods are available when needed. Demand variability cannot be overlooked, as much as details like shelf life considerations; where relief items, such as food and medicines, have limited shelf life.

Maintaining stockpiles of relief goods requires financial resources. Cost efficiency analysis to strike a balance between having enough inventory to respond quickly to a crisis and minimising costs must be conducted.
As mentioned previously, pre-positioning relief supplies in strategic locations before a disaster occurs can significantly improve response times. However, this strategy faces certain challenges:

a) Identifying strategic locations: identifying the most strategic locations for pre-positioning requires careful analysis of disaster-prone areas and transportation routes.

b) Resource allocation: pre-positioning requires allocating resources to specific locations in anticipation of potential disasters, which can be challenging when resources are limited.

c) Rotation and monitoring: regularly rotating stock to ensure that relief items do not expire and monitoring inventory levels at pre-positioned sites are essential tasks in inventory management.

3.4.3. Allocation of Resources Based on Needs Assessment

The allocation of resources is guided by a thorough needs assessment, which involves gathering data and information to understand the needs and priorities of affected populations. There are challenges in conducting needs assessments which includes timeliness i.e. needs assessments must be conducted promptly and continuously to ensure that aid is provided when and where it is most needed and data Collection because gathering accurate and reliable data in the chaos of a crisis can be challenging. Humanitarian organisations may face obstacles in accessing affected areas and obtaining data from vulnerable populations (as we shall see in the next chapter).

Allocating resources with a focus on vulnerable groups, such as children, elderly individuals, pregnant women, and people with disabilities, is critical in humanitarian logistics. However, doing so entails a certain effort due to difficulties in identifying vulnerable groups: one of the major challenge during a BHO founded program during 2022-2023 was identification and treatment of sexual violence victims, this was largely attributable to the fact that in the first place victims rarely go of their own free will to the clinics used for reception and this service, other times when they do it is so long after the fact that it is not easy to detect the signs of violence. Identifying and reaching out to vulnerable populations can be difficult, especially in large-scale.

3.4.4. Equitable Distribution

Ensuring equitable distribution of resources is vital to prevent favouritism or discrimination and maintain the trust and credibility of humanitarian organisations. Cultural sensitivity is a major aspect - understanding the cultural norms and practices of affected communities is essential in ensuring that aid distribution is culturally appropriate and sensitive- as much as transparency and accountability. Maintaining transparency in resource allocation and distribution processes is crucial to ensure accountability and prevent corruption, joint work by the programme team and the logistics team must be carried out so that the distributions of the various items distributed can be tracked and reported so that they are in order in the event of internal or external audits

Resource management and allocation are integral to the success of humanitarian logistics in delivering aid and assistance to populations affected by crises. The challenges discussed in this paper underscore the complexity of humanitarian operations and the need for careful planning, coordination, and adaptability. Humanitarian organisations must continuously strive to improve their resource management strategies to optimise aid delivery and alleviate suffering during times of crisis.

3.5. Infrastructure and Communication Constraints

Disasters, whether natural or man-made, can cause extensive damage to transportation infrastructure, disrupting the flow of goods and personnel essential for effective humanitarian logistics. For instance let’s take into consideration impaired accessibility; that’s when we have roads, bridges, airports, and seaports that can be severely damaged or rendered impassable during disasters like earthquakes, hurricanes, floods, or conflicts. This restricts access to affected areas, making it challenging to deliver aid and relief supplies.
In addition the disruption of transportation routes can lead to supply chain bottlenecks, delaying the delivery of critical relief items. Humanitarian organisations periodically navigate alternative routes or use air and water transport to reach isolated communities.
Damaged infrastructure poses safety risks and concerns for logistics personnel and relief workers, which is why it is often the case that among the logistics staff there is a person with structural expertise, usually an engineer, who is in charge of carrying out in-depth analyses for rehabilitations and new facilities projects.

3.5.2. Ensuring Connectivity for Efficient Logistics Coordination

In the face of infrastructure and communication constraints, ensuring connectivity is vital for efficient logistics coordination in humanitarian operations. Some key strategies include: satellite communication by employing satellite communication systems enabling communication in remote or disaster-affected regions where traditional networks have failed.
Mobile applications and GIS: utilising mobile applications and geographic information systems (GIS) facilitates real-time data sharing and collaborative decision-making.
Digital technology integration: integrating digital technology and cloud-based systems improves the visibility and accountability of aid distribution, enhancing logistics efficiency.
Centralised coordination centres: establishing centralised coordination centres equipped with alternative communication systems can serve as command hubs for logistics teams and relief agencies.

Infrastructure and communication constraints present significant challenges in humanitarian logistics, impacting the timely and effective delivery of aid and relief supplies.

3.6. Security and Safety Issues

Security and safety are paramount concerns in humanitarian logistics operations, as aid workers and relief personnel operate in challenging and often dangerous environments. Here we delve into the complexities of ensuring the safety of logistics personnel and relief workers, coping with security threats and risks in conflict zones, and balancing the delivery of aid with security considerations in the context of humanitarian logistics.

3.6.2. Ensuring the Safety of Logistics Personnel and Relief Workers

It all starts with risk assessment and training; prior to deployment, humanitarian organisations conduct comprehensive risk assessments to identify potential hazards and security threats. Adequate training is provided to logistics personnel and relief workers to prepare them for operating in high-risk environments even once they reach their deployment station.
Thanks to the contribution of organisations such as INSO a lot as been done to improve security in humanitarian context
The International NGO Safety Organization (INSO) is a critical organisation that plays a crucial role in the humanitarian context. Established in 2011, INSO is a not-for-profit organisation that focuses on enhancing the safety and security of humanitarian organisations operating in complex and high-risk environments.
INSO recognizes that ensuring the safety of aid workers and the effective delivery of humanitarian assistance are interdependent. By providing essential services and support, this agency strengthens the capacity of humanitarian organisations to operate safely and efficiently in challenging environments.
They are involved in security protocols: establishing clear security protocols is vital to minimise risks during humanitarian operations. These protocols include guidelines for movement, communication, and response to security incidents.
Also provides information to map and designating protected humanitarian spaces, such as hospitals and refugee camps, can provide safe areas for the delivery of aid and assistance to affected populations.
Developing robust security contingency plans allows humanitarian organisations to respond effectively to security incidents, including evacuations and emergency response. On a smaller scale, more for the individual organisation, there tends to be a contact person for on-site security management (hibernation room and escape routes) while at inter-organisational level the main contact person is UNDSS whose operators are often ex-military or police officers

3.6.3. Balancing the Delivery of Aid with Security Considerations

Humanitarian organisations often face access dilemmas, where providing aid to vulnerable populations conflicts with security concerns. Balancing the imperative to deliver aid with the safety of personnel requires thoughtful decision-making.
EROs operators must assess and accept certain levels of risk to reach populations in dire need.

The level of risk accepted may vary based on the urgency of the crisis and the potential impact of the aid delivered. A certain level of flexibility and adaptability is required to be able to face changing security situations. Swiftly adjusting plans based on security assessments is crucial to ensuring the safety of personnel and the effective delivery of aid.
Ensuring the safety of logistics personnel and relief workers requires comprehensive risk assessments, security protocols, and collaboration with local authorities. Coping with security threats in conflict zones demands careful negotiation, conflict sensitivity, and robust security contingency planning. Balancing the delivery of aid with security considerations requires flexibility, risk acceptance, and community engagement. By prioritising security and safety measures, humanitarian organisations can effectively navigate complex environments, deliver vital aid, and safeguard the well-being of personnel and affected populations.

3.7. Information and Technology Challenges

Information and technology play a crucial role in the success of humanitarian logistics operations, enabling efficient resource management and effective aid delivery. However, several challenges arise in the context of information gathering and sharing in real-time, the utilisation of technology in logistics operations, and overcoming technological barriers in resource tracking and management.

Humanitarian operations involve sensitive data, including personal information of beneficiaries. For instance the data that will be reported in this thesis are all from projects that allow data sharing. Ensuring data privacy and protection from unauthorised access is essential to maintain the integrity of information sharing processes.

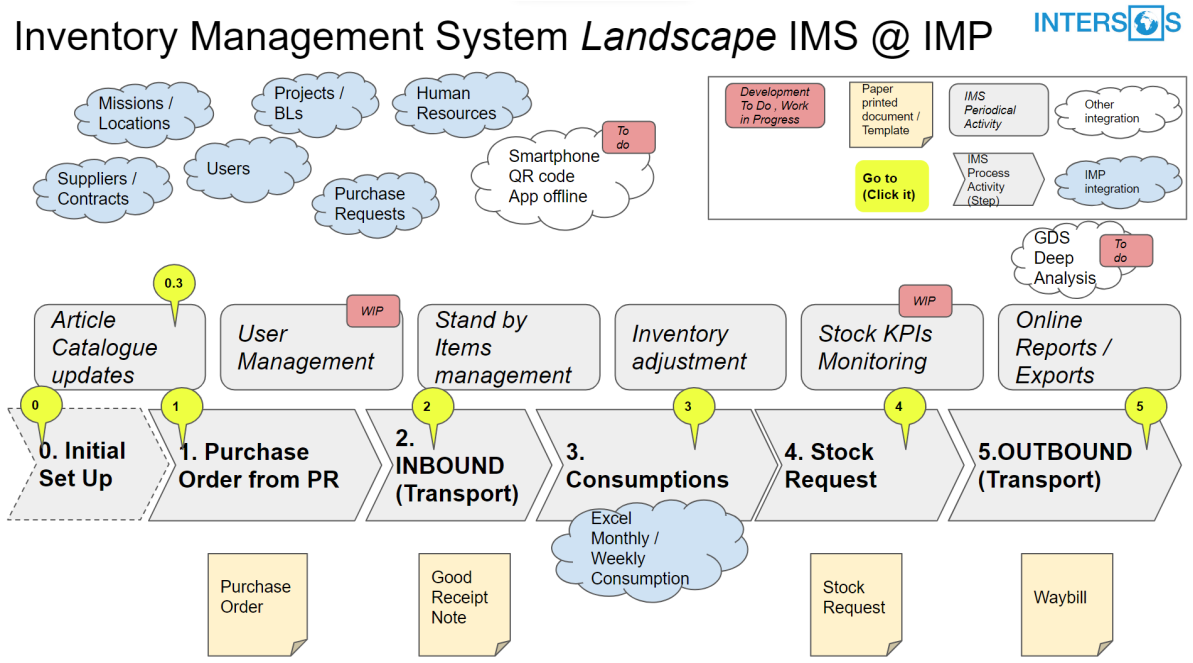
Gathering accurate and timely data in crisis zones can be challenging due to disrupted communication networks, damaged infrastructure, and security risks.

Language barriers and cultural sensitivities can also represent a big issue and hinder effective information sharing with affected communities. Using local translators and engaging community members as information sources can facilitate communication and foster trust.

Digital Literacy it’s a huge problem: many aid workers (expats for age) and local partners may lack proficiency in using technology for logistics operations, and not only that. Providing training and technical support can enhance their digital literacy and improve the adoption of technology in the field.

Supply chain tracking aid and relief supplies along the supply chain is essential for efficient resource management. Implementing RFID tags, barcodes, and GPS tracking systems can enhance supply chain visibility, allowing for real-time monitoring of resources (in fact one of the introductions applied during my traineeship for a fleet management, GPS monitoring and vehicle 'reservation' system).
The IMS (Inventory Management Systems) was in fact one of my main task during deployment in Maiduguri; after the field visit and MEAL coordinator from HQ, we concluded that it was time, considering the longevity and size of the mission, to implement robust inventory management systems to help address challenges related to stockouts, overstocking, and wastage of resources.

3.7.2 IMS



Scheme 3: IMS frame

IMS is an extension of the IMP (Intersos Management Platform) web platform, i.e. the management software for the implementation of operational procedures for all missions, HQ and international.
Unlike IMP, which maintains (understandably) the same structure regardless of the zones of use, obviously changing depending on the access credentials (HR, Logistics, Audit, Medical Unit, Grant&Compliance, Communication...), IMS is differentiated by the need to adapt to contextual requirements: as can be guessed, the management system is mainly used in the management and storage of goods (medical-pharmaceutical products and warehousing), but the way in which tasks and storage are divided up is at a 'mission level'.
This is because the mission in Chad, with just over eighty staff members and only one distribution point, coincidentally, for medicines and NFIs (non-food items), cannot be expected to and can operate in the same way as the mission in Borno State, with over 270 staff members, thousands of volunteers and casual workers, some twenty distribution centres with 14 specialised clinics.

Digressing briefly on the path that led to the development and integration of the platform into the practices of the Nigeria mission (focusing on the more complex and urgent pharmacy inventory), the process began with an understanding of the structural and logistical necessities of the mission.

During this data gathering process our field location workers resulted to be key actors, therefore their participation in the briefings in a collaborative and inclusive manner was extremely relevant

This two-way communication is part of the adaptive approach the agency have been developing in order to enhance collaboration with the community itself: the workers are often few member of the community that were able to have secondary or high instruction, they know the ways and needs of our beneficiaries for the simple reason that they share with them on a daily basis, this means valuing local knowledge and experience.

Learning (or having access to a vast amount of material) about communication and communicative development was a key to this process. Almost as much as my origin counted; in this case, having been a facilitator, who although born and raised in a context geographically and culturally distant from that in north-eastern Nigeria, with origins in the state itself (hence knowledge scattered among the nation's recent history, culinary traditions, vehicle language...) gave the people involved the opportunity to find a mediator between themselves and the platform's ITC programmer and contact person, a 40-year-old from Pisa with a ten-year background in KPMG.

Some key points I have extracted from conceptual approaches for development communication as well as the UNHCR manual for operational participatory assessment

Hence the need, or requirement, to involve in the focal group for setting up the platform, not only the project managers (med. coordinator, pharmacy manager and a couple of doctors), i.e. those who operationally authorise the various steps, which can be supervised, on the management system, but at my request (fortunately positively received) also the 'executors' who would otherwise be left with the task of 'learning how to use a tool, instead of helping to create it.
The contribution of these figures, called to headquarters from the various LGAs helped, during the brainstorming days, to reshape the procedural and timing view of the use of IMS. Highlighting process bottlenecks as well as limited knowledge and computer proficiency, the platform's structure has been shaped according to the needs of each individual currently involved in its use (with obvious room for improvement) – from the stock requester in the remote area who will supply the mobile clinic 400 km away from Maiduguri to the doctor who will issue consent directly from their office in the city, clearly taking into consideration connectivity and offline capabilities in remote areas; as we know many crisis-affected areas have limited or unreliable internet connectivity. Implementing technology solutions with offline capabilities ensures that aid workers can continue to manage resources even in the absence of internet access.

3.8. Environmental and Cultural Factors

Humanitarian logistics operations are not only shaped by the immediate needs of affected populations but also influenced by the environmental and cultural factors present in the regions where crises occur. I'll now examine the challenges related to adapting logistics operations to diverse environments, cultural sensitivity in humanitarian logistics, and sustainability and environmental impact considerations that are crucial for effective and responsible humanitarian responses.

Humanitarian crises occur in diverse geographic regions with varying climates, from arid deserts to tropical rainforests.
Coasts, island states, and major cities in the tropics will be among the most affected, according to climate scientists. The forecasts by the International Organization for Migration (IOM) are alarming: the number of "environmental migrants" by 2050 could range from 25 million to 1 billion.
Adapting logistics operations to these diverse environments requires specialised transportation, storage, and handling of relief goods.
Some crisis-affected areas may lack sufficient transportation infrastructure, making it difficult to deliver aid and relief supplies, not to forget the aforementioned scarcity of resources like water, fuel, and food may be scarce.

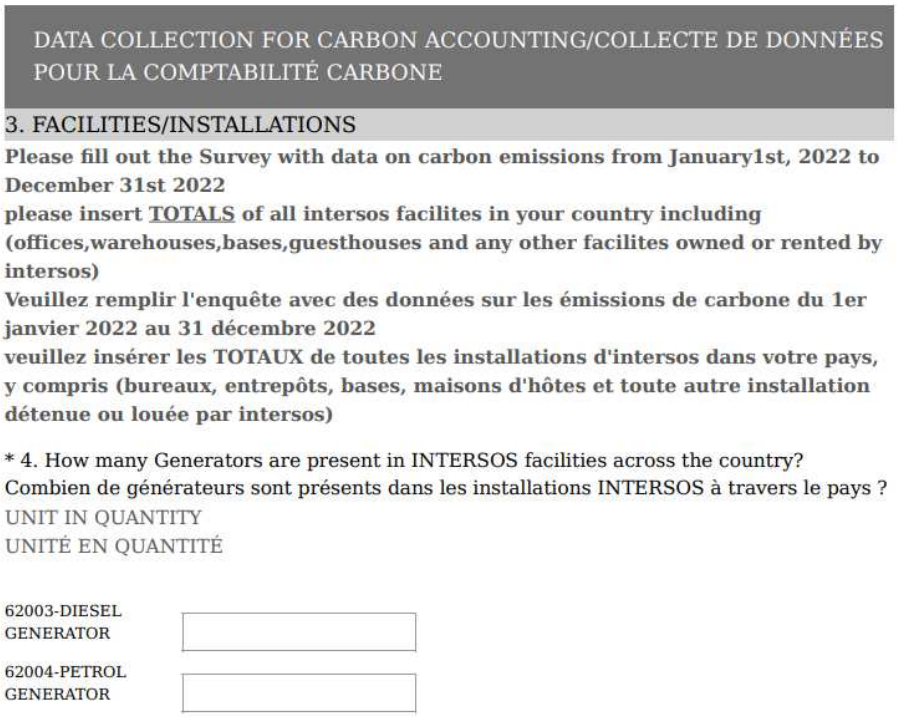
Sustainable practices, such as rainwater harvesting and energy-efficient solutions, can help manage resources responsibly during humanitarian operations.

3.8.2 Sustainability and Environmental Impact Considerations

To achieve sustainability in humanitarian logistics, appropriate methods and tools are required to measure the environmental and social impacts of activities. For example, the carbon dioxide equivalent index has been widely used in the literature to assess the environmental pillar of sustainability (Cao et al., 2017; Nayeri et al., 2020). Some scholars, like Pishvaee et al. (2014), have employed ReCiPe 2008 as a lifecycle-based method to evaluate the environmental impact of supply chain decisions. They have also used the "guidelines for social life cycle assessment of products" to measure the social impacts of their problem. These studies have shown that social and environmental aspects are inherently interconnected.

During my internship, another contribution I made was in the data collection for the carbon footprint calculation for the Nigeria mission.

With the logistics headquarter (based in Dakar), it was decided to give more weight to the environmental dimension of the organisation: in part because of a vision in line the principles of the agency, at the same time with a pragmatically economic implication, decreasing the environmental impact of the different missions is a strength in the eyes of donors who will be more likely to release funds.
Basically, by collecting data with a questionnaire on various aspects of consumption: assets, fleets, energy consumption in the various facilities, they entered this data on an offset calculation platform. With the result, decisions were then made, based on the different situations of each mission that participated, to try to improve the score prospectively


DATA COLLECTION FOR CARBON ACCOUNTING/COLLECTE DE DONNÉES POUR LA COMPTABILITÉ CARBONE

3. FACILITIES/INSTALLATIONS

Please fill out the Survey with data on carbon emissions from January1st, 2022 to December 31st 2022
please insert TOTALS of all intersos facilites in your country including (offices,warehouses,bases,guesthouses and any other facilites owned or rented by intersos)
Veuillez remplir l'enquête avec des données sur les émissions de carbone du 1er janvier 2022 au 31 décembre 2022
veuillez insérer les TOTAUX de toutes les installations d'intersos dans votre pays, y compris (bureaux, entrepôts, bases, maisons d'hôtes et toute autre installation détenue ou louée par intersos)

* 4. How many Generators are present in INTERSOS facilities across the country?
Combien de générateurs sont présents dans les installations INTERSOS à travers le pays ?
UNIT IN QUANTITY
UNITÉ EN QUANTITÉ

62003-DIESEL GENERATOR

62004-PETROL GENERATOR

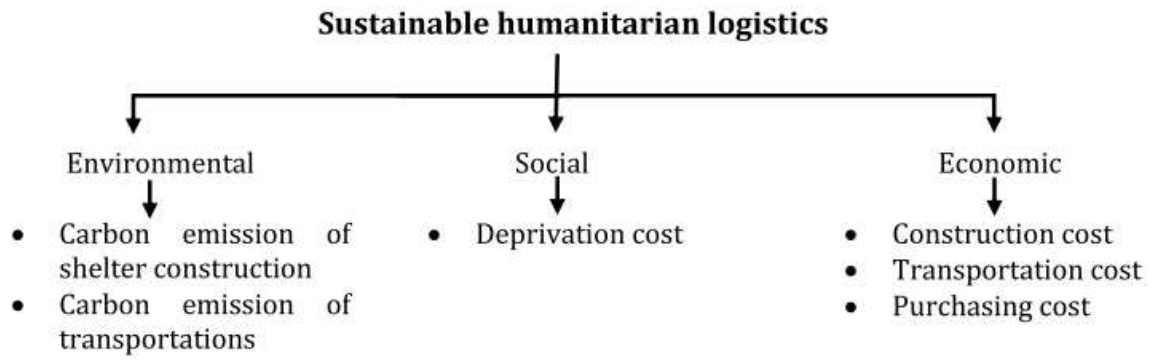
Fig 1: Carbon footprint questionnaire

In the area of energy consumption, one of the conclusions reached for the mission is the push on the transition to solar as the first energy source, and diesel generators as backup (currently reverse situation). However, this is not easy to implement, especially in the more remote field areas; more than once one has run into thefts of one plus solar panels at some IDP stations operated by the organisation.
Efficient resource management and waste reduction are key components of sustainable humanitarian logistics. Humanitarian operations generate significant waste, including packaging materials and discarded items. Implementing responsible waste management practices, such as recycling and waste reduction, is crucial to minimise environmental impact.

Between November 7 and November 8, 2018, a global gathering of 62 humanitarian logistics experts took place in Rome, Italy. The focus of the meeting was on reverse logistics, discussing how to optimise the re-use and disposal of relief items in post-disaster and forced displacement scenarios. The goal of reverse logistics is to make disaster relief sustainable in a world prone to disasters.

During the meeting, the Global Logistics Cluster (GLC) emphasised the need for better technical solutions in sourcing and circulating goods and materials to achieve sustainability in refugee aid. Since the Haiti earthquake in 2011, most major disaster and displacement responses have involved calls for measures to manage the impact of used and unused humanitarian items and their packaging (GLC, 2018).

Peretti et al. (2015) have pointed out that despite these calls, green logistics policies in the humanitarian sector have remained largely aspirational or part of future plans. To address this, efforts have been made to introduce reverse logistics concepts, already established in commercial supply chains, into the humanitarian field. Reverse logistics, as defined by Rogers & Tibben-Lembke (1999: 2), involves the planning, implementation, and control of flows of goods and related information from the point of consumption back to the point of origin for value recapturing or proper disposal. The broader term, "green logistics," refers to minimising the environmental costs of supply chains.



Scheme 3: Framework of S.H.L.

According to some experts (Li et al., 2019), social and environmental metrics are perceived as contradictory to the primary goals of humanitarian logistics (HL), as they are believed to reduce the efficiency of relief activities. However, a second group of experts argues that sustainability aligns with the core concept of HL. They emphasise the long-term impacts of sustainable humanitarian logistics (SHL), stating that considering social and environmental dimensions can mitigate the severity of future disasters and even prevent their recurrence (Klumpp et al., 2015).

A considerable part of the Sphere manual, the Humanitarian Charter and Minimum Standards in Humanitarian Response, is really about the arrangement of materials, especially medical waste (given that Sphere comes from the UN military's field practice manuals)

Ensuring the sustainability of humanitarian interventions involves planning for the long term and supporting local communities in building resilience and self-reliance. Encouraging community-driven initiatives and capacity-building programs can foster sustainability.

Environmental and cultural factors present significant challenges in humanitarian logistics, requiring adaptive and responsible approaches. Adapting logistics operations to diverse environments involves innovative transportation solutions and efficient resource management. Cultural sensitivity is crucial for building trust and effectively engaging with affected communities. Sustainability and environmental impact considerations require responsible waste management, energy efficiency, and long-term planning. By addressing these challenges, humanitarian organisations can conduct logistics operations that are not only efficient and effective but also respectful of local cultures and mindful of the environmental impact, ultimately leading to more responsible and sustainable humanitarian responses.

3.8.3. Sustainable Humanitarian Logistics

Sustainable humanitarian logistics refers to the practice of conducting humanitarian operations in a manner that balances the immediate needs of affected populations with the long-term well-being of the environment and communities. It involves adopting responsible practices that minimise waste, reduce carbon emissions, and promote social and economic sustainability. It is a rapidly evolving concept that aims to integrate environmentally friendly practices and social responsibility into humanitarian operations. As the world faces increasing challenges from climate change and environmental degradation, humanitarian organisations are recognizing the importance of reducing their ecological footprint and ensuring that aid delivery does not exacerbate environmental issues.

The principles of sustainable humanitarian logistics are rooted in the three pillars of sustainability: environmental, social, and economic. Where social equity aims to ensure that humanitarian logistics activities benefit all stakeholders, including affected communities, workers, and local suppliers, without causing harm or increasing vulnerability, while economic efficiency means optimising the allocation of resources and reducing costs to ensure that humanitarian aid is delivered effectively and efficiently.

Enhanced community resilience it’s one of the main goals of sustainable logistics practices that can support local communities' capacity-building and strengthen their resilience to future disasters and crises.

On the agency side sustainable logistics practices can lead to cost savings in the long run, as energy-efficient solutions and reduced waste translate to lower operational expenses.

Sustainable humanitarian logistics is an imperative response to the challenges of the 21st century. By aligning humanitarian efforts with sustainable principles, organisations can minimise their environmental impact, enhance community resilience, and optimise the delivery of aid to those in need. While challenges exist, the benefits and long-term positive impacts make sustainable humanitarian logistics a worthwhile endeavour for a more resilient and compassionate future.

Implementing green supply chain management principles is central to sustainable humanitarian logistics. This involves sourcing eco-friendly relief items, using energy-efficient transportation methods, and optimising supply chain processes to minimise environmental impact. Utilising renewable energy sources, such as solar-powered warehouses and vehicles, can significantly reduce the carbon footprint of logistics operations.

As the global community faces mounting environmental challenges, the humanitarian sector recognizes the need for sustainable practices in its operations. The concept of a "green supply chain" is gaining prominence in humanitarian logistics, as it seeks to integrate environmentally responsible measures into the delivery of aid and relief efforts.

Sustainable procurement is the first step, prioritising environmentally friendly and socially responsible sourcing of relief items, including materials and equipment. Then, as we said, energy efficiency, waste reduction and recycling and local capacity building all play an important role.

The adoption of a green supply chain in humanitarian logistics is a pivotal step towards sustainable and responsible aid delivery. By integrating environmentally responsible practices into humanitarian operations, organisations can minimise their ecological footprint, enhance disaster resilience, and ensure a more effective and compassionate response to those in need. While challenges exist, the long-term benefits of a green supply chain make it a compelling pathway for humanitarian organisations to contribute to both immediate relief efforts and a greener and more sustainable future.

Building climate-resilient infrastructure is essential in regions prone to natural disasters and climate-related events. Sustainable humanitarian logistics involves constructing and maintaining structures that can withstand extreme weather conditions, such as cyclone-resistant shelters and flood-proof warehouses.
Climate change is causing an increase in the frequency and intensity of natural disasters, posing significant challenges for humanitarian logistics operations. To effectively respond to these evolving crises and safeguard vulnerable communities, integrating climate-resilient infrastructure in humanitarian logistics is becoming a necessity.
Climate-resilient infrastructure refers to the design and construction of facilities and systems that can withstand the impacts of climate change, such as extreme weather events, sea-level rise, and shifting weather patterns. In the context of humanitarian logistics, climate-resilient infrastructure plays a critical role in ensuring the continuity of operations, timely response to emergencies, and the protection of aid workers and affected populations.

The benefits enhanced by resilient infrastructure enables humanitarian organisations to maintain operations during and after disasters, improving safety through their complexity of risk-informed design by assessing climate-related risks and incorporating adaptive measures into construction.
Despite the challenges, the adoption of climate-resilient infrastructure is a transformative step in ensuring a more effective and compassionate response to humanitarian crises in the face of a changing climate.

Sustainability in humanitarian logistics goes beyond immediate aid delivery; it also involves empowering local communities to become more resilient and self-reliant. Capacity-building programs, vocational training, and community-led initiatives can contribute to long-term sustainability and reduce dependency on external assistance.

Utilising data and technology for data-driven decision-making is essential for sustainable humanitarian logistics. Real-time data on needs assessment, resource allocation, and logistics efficiency can help optimise operations, reduce waste, and enhance the impact of aid delivery. Monitoring the outcomes of logistics operations and analysing the effectiveness of sustainability initiatives can inform future strategies and drive improvements (as we'll see in the next chapter).

At the operational level, several donors, such as ECHO (European Civil Protection And Humanitarian Aid Operations), USAID (US Agency for International Development, 2012), and the World Bank, have embraced sustainability objectives for their humanitarian organisations, necessitating the consideration of sustainability's influence on program planning. Additionally, some organisations, like the United Nations Development Program, have been pioneers in incorporating climate change agendas in their SHL initiatives.

Sustainable humanitarian logistics is a holistic approach that recognizes the interconnectedness between environmental, social, and economic factors. It involves embracing green supply chain practices, climate-resilient infrastructure, resource efficiency, and waste reduction. Social inclusion, gender equity, and community empowerment are essential for fostering long-term resilience. By incorporating data-driven decision-making, collaboration, and continuous learning, humanitarian organisations can enhance the sustainability of their logistics operations and contribute to a more sustainable and responsible humanitarian response overall.

3.9. AI in humanitarian logistics

The field of humanitarian logistics has been constantly evolving over the years, seeking innovative solutions to efficiently respond to crises and deliver aid to vulnerable populations. In recent times, the integration of Artificial Intelligence (AI) has emerged as a game-changer in humanitarian operations. AI's ability to process vast amounts of data, optimise logistics processes, and facilitate decision-making has revolutionised the way humanitarian organisations deliver aid and support disaster-affected communities.

One of the primary applications of AI in humanitarian logistics is data analysis and predictive modelling. AI algorithms can analyse various data sources, including satellite imagery, social media feeds, weather patterns, and past disaster data, to identify vulnerable regions and predict potential crises. This capability enhances preparedness and enables timely deployment of resources, improving the overall effectiveness of humanitarian responses.
AI-driven optimization algorithms have been instrumental in improving resource allocation and distribution.

By considering factors such as supply chain efficiency, transportation costs, and demand forecasting, AI can recommend the most efficient routes and distribution strategies for delivering aid to affected areas. This not only accelerates response times but also ensures that resources reach the right people at the right time.
The integration into supply chain management has resulted in greater transparency and accountability. AI-powered tracking systems allow humanitarian organisations to monitor the movement of relief supplies in real-time, ensuring that aid reaches its intended recipients. Moreover, AI can analyse supply chain performance and suggest areas for improvement, thus enhancing the overall efficiency of humanitarian logistics.

Just in April this year, the Logistic Cluster entered into an inter-organizational agreement (including INTERSOS) to support drones for the purposes of reconnaissance, mapping and distribution of first aid kits, proving its valuable contribution in disaster assessment and monitoring. AI-powered image recognition can quickly identify damaged infrastructure, assess the extent of the disaster, and facilitate targeted response efforts. This significantly reduces the time required for on-site assessments and enables more precise resource allocation.
AI-based decision support systems provide valuable insights to aid workers and humanitarian leaders during crises. By synthesising complex data, AI can generate actionable recommendations, helping decision-makers make informed choices in high-pressure situations. These systems enhance situational awareness and promote evidence-based decision-making.
The perks of putting this technology side by side with humanitarian logistics are several: faster and more efficient response, improved accuracy, enhanced preparedness and cost optimization.

The integration of AI in humanitarian logistics has ushered in a new era of responsiveness, efficiency, and effectiveness in delivering aid during crises. AI's capabilities in data analysis, optimization, and predictive modelling are invaluable tools in enhancing preparedness and reducing the impact of disasters on vulnerable communities. As the technology continues to evolve, it is essential for humanitarian organisations to embrace AI responsibly, while ensuring that its implementation aligns with the principles of transparency, inclusivity, and ethical use of data. With AI as a valuable ally, the humanitarian sector is better equipped to alleviate suffering and support those in need during times of crisis.

3.10. Collaborative Approaches and Partnerships for Improved Logistics

Collaborating with private sector entities fosters innovation, expertise, and access to resources in humanitarian logistics. PPPs (Public-Private Partnerships) can improve the efficiency of supply chains, leverage technology, and enhance the overall effectiveness of aid delivery.
Effective coordination among various humanitarian organisations and government agencies is crucial for streamlined logistics operations.
Classifying humanitarian-business partnerships based on their motives and level of engagement can be done into four generic categorizations: philanthropic, strategic, commercial, and political.

Cross-sector partnerships typically involve the government (public), business (private), and non-profit (civil society, communities) sectors.

Capitalism can have a larger-scale impact on refugees than humanitarian delivery alone. The intention is to influence markets to behave more transparently or optimally (CIMO, context-intervention-mechanism-outcomes logic proposed by Denyer and Tranfield in 2009) for the consumers in those markets (UNHCR officer, Beirut, Lebanon, November 2016, see also Pascucci, 2017b).
From a supply-chain perspective, partnerships between commercial and humanitarian organisations are reasonable because many supply-chain elements are similar in both sectors. Therefore, tools and methods developed for commercial supply chains can be adapted to humanitarian relief chains (Beamon and Balcik, 2008; Oloruntoba and Gray, 2006; Van Wassenhove, 2006). Additionally, involving the business sector in relief operations could lead to faster response times as some critical infrastructures that affect public well-being are owned by the commercial sector.

However, the heterogeneity of these partnerships challenges the idea of a one-way transfer of logistics expertise from the commercial to the humanitarian sector (Duffield, 1997; Joachim & Schneiker, 2018; Smillie & Minear, 2004). There are broader ideological and cultural changes occurring that highlight an ideational alignment among different actors due to increased interactions in conflict zones (Joachim & Schneiker, 2018: 182), instead of a unidirectional transfer of expertise, there is an alignment resulting in intersecting and blurred markets where new operations of value extraction and exchange are explored (Lemberg-Pedersen & Haioty, 2020: 620, see also Andersson,).

Chapter 4. Research Methodology

The research methodology chosen for this thesis is the case study; involving in-depth and comprehensive exploration of the context through the lens of MEAL data, processing the raw data obtained by on field collection.
When we talk about raw data we mean a mix of quantitative and qualitative data gathered through a variety of methods: interviews and surveys, monitoring and observing a fenomena and so on.
The flexibility of a “case study” allow us to delve in a context, in this case, hardly understandable be civilians who oftenly maintain a detached and polarised perspective of humanitarian dimension, also we realise that for the same reason it is barely impossible to generalise the outcomes of the research due to is unicity, although we analyse data and provide statistical outcomes, these do not have the same representativeness of other research methods.
In order to provide a clear contextual understanding, we’ll describe the background of the projects examined and the methodologies used for these analyses.

4.1. Needs Assessment in Humanitarian Context: Understanding & Prioritising

In the intricate and often swiftly evolving realm of humanitarian crises, the process of needs assessment plays a pivotal role by laying the foundation for the development and execution of effective response strategies. Essentially, it serves as the initial step for any project, offering precise definitions of its objectives and the intended outcomes for an ongoing initiative.

Conducting a needs assessment entails a systematic approach to gathering and scrutinising data with the primary aim of pinpointing the requirements, vulnerabilities, and capabilities of the populations affected by the crisis. This systematic process is indispensable for ensuring that humanitarian aid efforts are not only appropriately directed but also tailored to meet the unique circumstances of those immersed in the turmoil.

Furthermore, the importance of a needs assessment extends beyond mere data collection. It delves into understanding the broader context within which a crisis has unfolded. This entails a comprehensive analysis of the root causes and consequences of the emergency, an exploration of the demographics of the affected population, and a careful evaluation of the pre-existing resources and capacities that can be harnessed in crafting a responsive and effective humanitarian response. In essence, it provides a holistic view of the crisis dynamics, enabling humanitarian organisations to respond more effectively and efficiently to the pressing needs of the affected communities.

Through the direct collection of data from affected communities, needs assessments play a pivotal role in prioritising interventions based on the most urgent and critical needs. This process guarantees that resources are directed where they can make the most substantial impact.

Conducting assessments and transparently sharing the results with relevant stakeholders underscores a commitment to transparency and accountability. This approach ensures that actions taken are firmly rooted in the genuine needs of the affected community, cultivating trust and reliance among those receiving assistance.

The assessment process involves gathering information using various methods such as surveys, interviews, focus groups, and direct observations. This comprehensive approach goes beyond addressing immediate material requirements and encompasses concerns related to safety, psychological and emotional well-being, and other aspects that hold significance in the context of the crisis. Once this data is collected, it undergoes a systematic and thorough analysis aimed at uncovering prevalent trends, identifiable patterns, and crucial insights.

This rigorous analysis plays a critical role in delving into the root causes of the crisis, understanding the diverse needs of different demographic groups, and identifying any gaps in the ongoing response efforts. The data analysis stage ultimately leads to the essential process of prioritising needs. This prioritisation hinges on evaluating the severity, urgency, and feasibility of addressing various needs, guiding humanitarian organisations in directing their efforts and resources to where they will have the most significant impact.

The insights derived from the needs assessment exercise wield substantial influence over the development of response strategies. These strategic plans outline the specific approaches, targeted activities, and necessary resource allocations required to effectively address the meticulously identified needs. In essence, this entire process underscores the crucial role of data-driven decision-making, ensuring that every action taken is grounded in a comprehensive understanding of the crisis and its multifaceted implications.

4.2. Integration of MEAL and HNO

In addition to the previously mentioned challenge of limited access due to security concerns, several other significant factors have a notable impact on the needs assessment process. One of these factors revolves around the importance of cultural sensitivity. Here, a profound understanding and genuine respect for local cultural norms and sensitivities are crucial to maintaining the integrity of the assessment procedures. This practice is essential to ensure that the entire assessment process remains both respectful and impartial.

Another critical aspect deserving attention is the issue of data quality and consistency, which often introduces delays in the analysis phase. Ensuring the accuracy and reliability of the collected data is a foundational requirement. To achieve this, a complex network of rigorous data validation and verification procedures becomes imperative. These measures are indispensable for safeguarding the overall quality of the data that forms the basis of the assessment.

Furthermore, the dynamic nature of crisis situations demands heightened vigilance. In rapidly evolving scenarios, the needs of the affected population can undergo swift and significant changes. Consequently, a strategy of continuous monitoring and systematic updates to the assessment data becomes indispensable. This real-time adjustment mechanism is essential to maintain the relevance of interventions, enabling humanitarian organisations to pivot and adapt their strategies in sync with the evolving needs of crisis-affected individuals and communities.

The Humanitarian Needs Overview (HNO) represents a critical step in the humanitarian response cycle, typically initiated at the onset of an emergency. The HNO process serves several key purposes:

1. Identifying Needs: The HNO process involves gathering data through various means, such as surveys, assessments, and consultations with affected communities. This data helps pinpoint the specific needs and vulnerabilities of different groups, including children, women, and the elderly.

2. Prioritising Interventions: Once needs are identified, the HNO process involves analysing the severity and urgency of these needs. This analytical step helps prioritise interventions based on the most critical requirements of the affected populations.

3. Informing Response Plans: The findings from the HNO directly influence the development of response plans. They guide the allocation of resources and determine the types of interventions required. The overarching goal is to ensure that the response effectively and efficiently addresses the identified needs.

In summary, while needs assessment in humanitarian crises is a complex and multifaceted process, it is essential to consider factors such as cultural sensitivity, data quality, and the evolving nature of crises. The Humanitarian Needs Overview is a pivotal tool that helps humanitarian organisations navigate these challenges to better serve those in need during emergencies.

The MEAL (Monitoring, Evaluation, Accountability, and Learning) approach and the HNO (Humanitarian Needs Overview) process are intricately linked. This integration ensures that humanitarian responses are founded on evidence, adaptable to changing circumstances, and held accountable for their outcomes.

By continually monitoring and evaluating interventions against the needs identified in the HNO, aid organisations can make well-informed decisions, adjust their strategies based on real-time feedback, and optimise their positive impact on affected populations.

While the HNO process identifies and prioritises needs, the MEAL approach ensures that interventions are not only responsive but also accountable and continually refined to effectively address those needs. This collaboration between needs assessment and implementation is pivotal to the overall success of humanitarian interventions and the alleviation of suffering during crises.

The timely infusion of needs assessment data into the MEAL framework is a critical imperative, underscoring its paramount role in maintaining the alignment and congruence of response strategies with the ever-evolving landscape of requirements.

To seamlessly integrate needs assessment with the MEAL approach, it is essential to allocate resources judiciously. This allocation should be designed to sustain both the processes of data collection and in-depth analysis, as well as the ongoing mechanisms of vigilant monitoring and insightful evaluation. Such resource allocation highlights the intrinsic interconnectedness of these elements, with each element reinforcing the other in a mutually beneficial dance that enhances the overall effectiveness of humanitarian efforts.

The convergence of needs assessment and the MEAL paradigm represents a synergy of forward-thinking and reflection. It requires an acknowledgment that crises are not static; they evolve, and so do the needs they generate. This combined framework offers a dynamic feedback loop. It not only ensures that interventions remain responsive to the most current needs but also strengthens the capacity to learn and adapt over time. This interplay fosters an ecosystem of learning, transparency, and adaptive capacity that elevates the efficacy of humanitarian response to new levels of impact and relevance.

In essence, the fusion of needs assessment into the MEAL continuum is not merely a transactional integration of data streams; it is a deliberate orchestration aimed at infusing response mechanisms with the vital pulse of real-time needs. This approach signifies a commitment to precision and compassion, shaping a landscape where every resource invested echoes the urgency and authenticity of the requirements on the ground.

To establish a solid foundation for discussing MEAL, it's important to reiterate its definition one more time: Within the sphere of humanitarian emergencies, the acronym MEAL stands for Monitoring, Evaluation, Accountability, and Learning.

MEAL represents a structured and essential approach that serves a pivotal role in guaranteeing the effectiveness, efficiency, and impact of day-to-day program management. This becomes especially crucial when operating in contexts as fragile and fluid as those encountered in humanitarian interventions. The MEAL framework provides a systematic way to monitor progress comprehensively and make real-time adjustments to strategies in a variety of challenging situations.

The primary objective of MEAL is to enhance the quality and accountability of humanitarian aid efforts. It achieves this by establishing mechanisms for the rigorous monitoring of ongoing activities, the thorough evaluation of their outcomes, and the adherence to stringent accountability standards.

Simultaneously, MEAL fosters a culture of continuous learning and improvement within the dynamic and demanding context of emergencies.

In essence, MEAL is not just an administrative framework but a dynamic and adaptive process that ensures that humanitarian responses are not only efficient and effective but also responsive to the evolving needs of crisis-affected populations. It enables aid organisations to uphold the highest standards of quality and accountability while remaining flexible in the face of ever-changing circumstances.
Monitoring constitutes the continuous process of gathering data and information to meticulously track the progress and execution of humanitarian activities. Within the context of emergency situations, this involves regularly evaluating whether planned actions are being executed as intended and whether they are yielding the desired results. Monitoring stands as the cornerstone of the MEAL approach in humanitarian emergencies, encompassing the ongoing collection, analysis, and interpretation of data to monitor the implementation and advancement of interventions. In emergency settings characterised by rapidly changing conditions, real-time monitoring becomes an indispensable tool that provides crucial insights, enabling aid organisations to adjust their strategies and respond adeptly to evolving circumstances. Consistent data collection serves the critical purpose of verifying whether planned actions are unfolding as planned and, when necessary, allows for prompt course corrections.

In regions prone to natural disasters or conflicts, such as earthquake-prone areas or conflict zones, monitoring plays an instrumental role in ensuring that relief efforts swiftly and effectively reach the affected populations. For example, following a natural disaster, monitoring facilitates the assessment of crucial aspects like the establishment of emergency shelters, the distribution of food and medical supplies, and the restoration of access to clean water. Timely monitoring serves to prevent bottlenecks, guarantees the equitable distribution of aid, and mitigates the duplication of efforts.

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Evaluation, on the other hand, constitutes the systematic appraisal of the outcomes and impacts of humanitarian interventions. Its primary aim is to address questions regarding the effectiveness, relevance, and sustainability of the assistance provided. Evaluations serve as the means by which organisations gain insights into what worked well and where improvements can be made, thereby contributing to decision-making grounded in evidence. In emergency scenarios, where resources are frequently limited, and time is of the essence, evaluations play a vital role in ensuring that aid efforts are genuinely benefiting the affected populations.

Accountability emerges as a fundamental principle that underpins humanitarian work. It entails a commitment to being responsible and answerable for the actions and decisions undertaken in the course of humanitarian operations. It encompasses transparency, responsibility for the consequences of actions, and a dedication to upholding ethical standards in all endeavours. Accountability is not just a principle but an ethical imperative that guides the conduct of humanitarian organisations in their mission to alleviate suffering and protect the dignity and rights of those they serve.

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Within the framework of MEAL, accountability signifies the commitment to maintaining transparency and fostering effective communication between humanitarian organisations and the communities and stakeholders they serve. This entails actively seeking feedback from those receiving assistance, attentively listening to their concerns, and taking their preferences into consideration. By nurturing open dialogue and integrating the perspectives of the affected community, accountability enhances the quality and relevance of humanitarian interventions.

In emergency contexts, where the populations in need often face dire circumstances, it becomes paramount for aid organisations to build trust and uphold transparency. Accountability encompasses the proactive engagement with communities and stakeholders, actively soliciting their input, and addressing their apprehensions.

For instance, in the Rohingya refugee crisis in Bangladesh, accountability mechanisms facilitated a platform for aid organisations to heed the voices of displaced individuals. This approach allowed them to gain a deeper understanding of the needs on the ground and adjust their interventions accordingly. In doing so, accountability not only bolsters the quality of assistance but also empowers beneficiaries to express their opinions and actively contribute to shaping the aid they receive.

Learning stands at the core of the MEAL approach. Humanitarian emergencies are intricate and continually evolving, and deriving insights from both successes and failures is imperative for adapting strategies and enhancing future responses. It serves as a crucial means to prevent the repetition of errors and encourages the adoption of innovative solutions that can elevate the overall effectiveness of humanitarian assistance.

Learning within MEAL is an iterative process, ensuring that lessons drawn from both successes and failures are documented and disseminated across organisations. In the realm of humanitarian emergencies, where conditions and challenges are frequently unique, learning facilitates the refinement of strategies and interventions based on concrete evidence and accumulated experience.

By drawing from past responses, organisations can navigate recurrent emergencies more adeptly, such as dealing with recurring droughts in the Horn of Africa or annual flooding in South Asia. Incorporating insights from previous experiences enables organisations to anticipate challenges, plan with greater efficacy, and bolster their capacity to respond promptly and effectively.

4.2.1. MEAL & IM

In the ever-evolving realm of humanitarian response, the seamless integration of Information Management (IM) and the MEAL (Monitoring, Evaluation, Accountability, and Learning) approach has risen to paramount importance. This fusion of methodologies is essential for maximising the impact of interventions, ensuring transparency, and nurturing a culture of continuous improvement. It serves as the conduit for the collection, organisation, analysis, and dissemination of data, equipping aid organisations with the tools to make informed decisions, monitor progress, engage with communities, and extract valuable insights for future actions.

The synergy between Information Management and MEAL bestows humanitarian organisations with the ability to base their decisions on precise and up-to-date data. Information Management systems are adept at capturing real-time information concerning aid delivery, resource distribution, and shifts in the operational environment. This data forms the bedrock upon which MEAL processes stand, enabling organisations to gauge whether they are meeting their targets, whether their interventions are effective, and whether resources are being optimally utilised.

Integrated Information Management and MEAL systems offer a streamlined approach to data collection, storage, and analysis. The presence of centralised databases and the use of standardised data collection tools serve to reduce redundancy, minimise errors, and enhance overall operational efficiency. Such efficiency becomes particularly crucial in the context of fast-paced emergencies where timely responses can make the difference between life and death.

In essence, the integration of Information Management and the MEAL approach is not merely a technological merger; it is a strategic alignment that fortifies humanitarian efforts by enabling them to operate based on accurate information, thus maximising the effectiveness and impact of their responses.

4.2.2. Haims & Challenges

Unintended Consequences: While reaching predefined targets is certainly praiseworthy, it's important to recognize that there can be unforeseen consequences associated with such achievements. These unintended consequences might manifest as resource imbalances or the inadvertent neglect of less visible needs. Therefore, it is incumbent upon organisations to meticulously evaluate the potential implications of surpassing their targets and to adopt a well-rounded approach that considers both the intended and unintended effects.

Contextual Factors: The attainment of targets should always be contextualised within the specific circumstances of the emergency. Factors such as shifting dynamics, evolving needs, and external challenges can significantly influence the interpretation and significance of exceeding targets. What might be deemed a success in one context might not hold the same weight in another, underscoring the importance of sensitivity to the unique dynamics of each crisis situation.

Sustainability: The pursuit of target achievement should never come at the expense of long-term sustainability. It is imperative to ensure that the progress made is not ephemeral but instead contributes to the enduring well-being of the affected communities beyond the immediate intervention period. Sustainability should be a guiding principle, ensuring that the gains achieved remain meaningful and beneficial in the years to come.

Continuous Improvement: Viewing target achievement as a stepping stone for continuous improvement is essential. Organisations should leverage their successes as opportunities for growth, knowledge sharing, and refinement of their approaches for future emergencies. By embracing a mindset of continuous improvement, they can build upon their achievements, learn from their experiences, and ultimately enhance their capacity to respond effectively to future crises.

4.3. Tools & Data in MEAL approach

In the context of the MEAL (Monitoring, Evaluation, Accountability, and Learning) approach, a diverse array of data types is collected, analysed, and harnessed to ensure the efficacy of humanitarian and development initiatives. These various data categories offer a multifaceted understanding of the situation, facilitate progress tracking, enable impact assessment, and support ongoing learning. Below are some common data types employed within the MEAL approach:

1. Quantitative Data: This form of data consists of numerical information and is typically gathered through structured surveys, questionnaires, and quantitative measurements. Quantitative data provides objective and quantifiable insights that can be statistically analysed. Examples encompass figures such as the number of beneficiaries, demographic characteristics, percentages, counts, and quantitative indicators related to project outputs and outcomes.

2. Qualitative Data: Qualitative data, on the other hand, comprises non-numerical information that captures the nuances, context, and subjective experiences of individuals. It is often collected through methods such as interviews, focus group discussions, observations, and open-ended survey questions. Qualitative data adds depth and richness to understanding beneficiary perspectives, behaviours, and social dynamics.
3. Geospatial Data: Geospatial data encompasses location-based information represented using geographic coordinates. This data is typically collected using Geographic Information Systems (GIS) tools and encompasses maps, satellite imagery, and spatial data pertaining to population distribution, infrastructure, and environmental factors.

4. Time-Series Data: Time-series data involves observations taken at different time points. It aids in tracking changes over time, evaluating trends, patterns, and seasonality. Time-series data is vital for monitoring progress and assessing the impact of interventions.

5. Baseline Data: Collected at the onset of a project, baseline data establishes a reference point against which future progress can be measured. It provides insights into the initial conditions, needs, and challenges of the target population before interventions are put into action.

6. Endline Data: Endline data is gathered at the culmination of a project to assess the final outcomes and impact of interventions. By comparing endline data with baseline data, organisations can discern the changes that have occurred due to their interventions.

7. Feedback and Complaints Data: This category involves direct input from beneficiaries and stakeholders and encompasses suggestions, complaints, and opinions regarding the quality and impact of interventions. Collecting and acting upon feedback supports accountability and engages beneficiaries in the process.

8. Performance and Indicator Data: Performance and indicator data are leveraged to measure the achievement of project goals and objectives. These often comprise predefined indicators that quantify the progress of interventions. Examples include completion rates, service utilisation rates, and other output and outcome indicators.

9. Secondary Data: Secondary data refers to existing data collected for other purposes but which can be relevant to the MEAL process. Such data may be sourced from reports, studies, government records, or other outlets.

10. Process Data: Process data offers insights into the implementation of interventions by tracking activities, resource utilisation, timelines, and challenges encountered during project execution.

11. Financial Data: Financial data encompasses information regarding the allocation, disbursement, and utilisation of financial resources for interventions. It supports transparency, accountability, and efficient resource management.

By harnessing this diverse range of data types, the MEAL approach empowers organisations to comprehensively evaluate the effectiveness of their interventions, learn from their experiences, and continually enhance their responses to humanitarian and development challenges.

These tools play a pivotal role in assisting organisations in the comprehensive management of data related to their interventions. They empower organisations to collect, analyse, visualise, and manage data, thereby facilitating informed decision-making, reporting, and the continuous improvement of their projects. Here's an in-depth look at some of the commonly employed MEAL tracking tools:

- Microsoft Excel: is a widely utilised spreadsheet application adaptable for basic MEAL tracking. It provides users with the capability to organise and analyse data, create graphs and charts, and perform calculations. While versatile, Excel may have limitations when handling large datasets and complex analyses.

- Luka Studio: is a specialised data collection and analysis platform tailored for social impact organisations. It equips users with tools for designing surveys, collecting data offline via mobile devices, and real-time data analysis. Luka Studio is designed to streamline MEAL processes and make data-driven decision-making more accessible.

- Power BI: a service by Microsoft, empowers users to visualise data and share insights across an organisation. It excels in creating interactive reports and dashboards, simplifying stakeholder access to insights from intricate datasets.

- SPSS: is a statistical software commonly employed for data analysis in social science research and evaluation. It offers advanced statistical analysis tools, data visualisation features, and reporting capabilities. SPSS is suitable for organisations necessitating in-depth statistical analysis of their MEAL data.

- ArcStudio: serves as an all-inclusive platform for data collection, analysis, and visualisation. It boasts features such as survey design, mobile data collection, data visualisation, and geospatial analysis. ArcStudio is particularly beneficial for projects involving geospatial data and mapping.

- Tableau: is a robust data visualisation and business intelligence tool that enables users to generate interactive and shareable dashboards, reports, and charts. It proves useful in presenting MEAL data in a visually compelling and interactive format.

- Jupyter: an open-source web application, permits users to create and share documents that encompass live code, equations, visualisations, and narrative text. It is often employed for data analysis, data visualisation, and sharing reproducible research.

- KoboToolbox: is a free and open-source platform crafted for data collection and analysis. It offers customizable surveys, supports offline data collection using mobile devices, and allows for the visualisation and analysis of collected data.

These MEAL tracking tools provide organisations with a diverse spectrum of options for efficient data management, spanning from straightforward data collection and visualisation to more intricate statistical analysis. The selection of the appropriate tool hinges on the specific needs, available resources, technical expertise, and the complexity of MEAL requirements for the project at hand. Each tool offers distinct advantages that cater to varying organisational contexts and goals, enabling more effective monitoring, evaluation, accountability, and learning processes.

4.5. Vulnerability Matrix

The Vulnerability Matrix serves as a well-structured framework designed to evaluate the vulnerability of individuals or entire communities. This assessment takes into account a wide range of factors, spanning social, economic, environmental, and political dimensions. By employing this matrix, individuals or groups can be categorised into distinct levels of vulnerability, aiding humanitarian organisations in pinpointing those who are most urgently in need of assistance and support. Ultimately, the Vulnerability Matrix provides a comprehensive overview of the challenges and vulnerabilities faced by affected populations, thereby empowering humanitarian actors to take a targeted and well-informed approach to their interventions.

Within the complex landscape of humanitarian work, the interplay between the Vulnerability Matrix and the Monitoring, Evaluation, Accountability, and Learning (MEAL) approach emerges as a critical and symbiotic relationship. The Vulnerability Matrix, functioning as a tool for identifying and classifying levels of vulnerability, harmonises seamlessly with the MEAL approach by offering the capacity to steer decision-making processes based on solid data, bolster accountability measures, and facilitate adaptive program adjustments. This examination delves into the intricate connection between the Vulnerability Matrix and the MEAL approach, underscoring their interdependence and the transformative influence of their integration.

Conversely, the MEAL approach stands as the foundational cornerstone of effective humanitarian interventions. It encompasses four fundamental pillars, each contributing to a comprehensive comprehension of an intervention's impact, adaptability, and long-term viability. The MEAL approach ensures that interventions are crafted upon a foundation of accurate data, with continuous monitoring of progress, active engagement of stakeholders, and the distillation of valuable lessons for future enhancements and refinements.
The Monitoring, Evaluation, Accountability, and Learning (MEAL) approach serves as a fundamental pillar in the realm of effective humanitarian and development initiatives. However, like any intricate process, it is not immune to challenges. Three notable obstacles that frequently arise in the implementation of the MEAL approach encompass human error, timeliness issues, and the presence of biassed data. Grasping the nature of these challenges and proactively addressing them is of paramount importance to uphold the precision, dependability, and integrity of MEAL procedures and the resulting outcomes.

Human error has the potential to emerge across various junctures within the MEAL process, spanning from the initial stages of data collection through to the subsequent phases of analysis and reporting. Diverse factors contribute to these errors, including the misinterpretation of instructions, transcription inaccuracies, and mistakes during the data entry phase. These oversights can introduce inaccuracies and compromise the overall validity of the data collected. Furthermore, the subjective nature of qualitative data interpretation and the possibility of biassed responses during interviews can further exacerbate the presence of errors in the information gathered. Addressing and mitigating these manifestations of human error are pivotal in ensuring that MEAL findings and conclusions maintain their reliability and accuracy.

Timeliness stands as a crucial element within the framework of the MEAL (Monitoring, Evaluation, Accountability, and Learning) approach. In this context, timeliness refers to the prompt and efficient execution of key activities, including data collection, analysis, and reporting. Any delays in these critical phases can impede the ability to make informed decisions and swiftly adapt interventions as circumstances evolve. Late reporting, in particular, carries the risk of missed opportunities for making timely adjustments and improvements in humanitarian and developmental efforts.

To effectively address timeliness challenges in the MEAL approach, several strategic mitigation strategies can be employed:

- Establish a Clear Timeline: Create a well-defined and transparent timeline for each stage of the MEAL process, encompassing everything from data collection to the final reporting phase. This ensures that all involved parties understand and adhere to set deadlines.
- Utilise Technology: Leverage modern data collection and analysis tools that not only expedite the process but also facilitate real-time reporting. Technology can significantly enhance the speed and efficiency of MEAL activities.
- Allocate Adequate Resources: Adequately allocate resources, including personnel and technology, to ensure that data collection and analysis are carried out in a timely manner. Insufficient resources can lead to unnecessary delays.
- Regular Updates: Provide stakeholders with regular updates on the progress of data collection and analysis. Transparency in reporting progress can foster trust and accountability.
- Training and Sensitization: Train data collectors to be aware of potential biases and sensitivities in their work and emphasise the importance of maintaining objectivity throughout the process.
- Sampling Techniques: Implement appropriate sampling techniques to guarantee that the data collected is not only accurate but also representative of the target population, thus minimising biases.
- Diverse Data Collectors: Employ a diverse team of data collectors who can relate to different demographic groups. This approach can help minimise biases related to identity and background.
- Pilot Testing: Conduct pilot tests before full-scale data collection to identify and rectify potential sources of human error. This proactive approach helps prevent issues from arising during the actual data collection process.
- Quality Assurance: Implement data quality checks, validations, and verification mechanisms at various stages of the MEAL process to catch errors early on. This practice ensures the integrity of the data.

- Data Audits: Regularly audit collected data to identify any inconsistencies and discrepancies that may have arisen from human error. Timely correction of errors is essential for maintaining data accuracy.
- Triangulation: Validate data by using multiple sources and methods. This approach reduces the impact of biases and enhances the reliability of findings.

To sum up, it is evident that human error, timeliness challenges, and biases represent inherent risks within the MEAL (Monitoring, Evaluation, Accountability, and Learning) approach. However, these risks can be successfully mitigated through the thoughtful and strategic application of the aforementioned mitigation strategies. The adoption of these measures plays a pivotal role in enhancing the accuracy, transparency, and accountability of the entire MEAL process.

By addressing these challenges head-on, organisations engaged in humanitarian and developmental work can realise several benefits. Firstly, the implementation of these mitigation strategies leads to a more precise and reliable MEAL process. This increased precision is crucial as it helps in generating data and insights that are more dependable and thus, better equipped to inform decision-making.

Secondly, it promotes transparency within the MEAL process, which is essential for building trust among stakeholders. When stakeholders have access to transparent and credible information about the progress and outcomes of humanitarian and development initiatives, it fosters a sense of confidence in the organisation's work.

Furthermore, accountability is a key outcome of these mitigation efforts. Being able to demonstrate that rigorous measures have been taken to minimise errors and biases in data collection and analysis shows a commitment to accountability. This accountability, in turn, ensures that the organisation is answerable for its actions and decisions, reinforcing its credibility and trustworthiness.

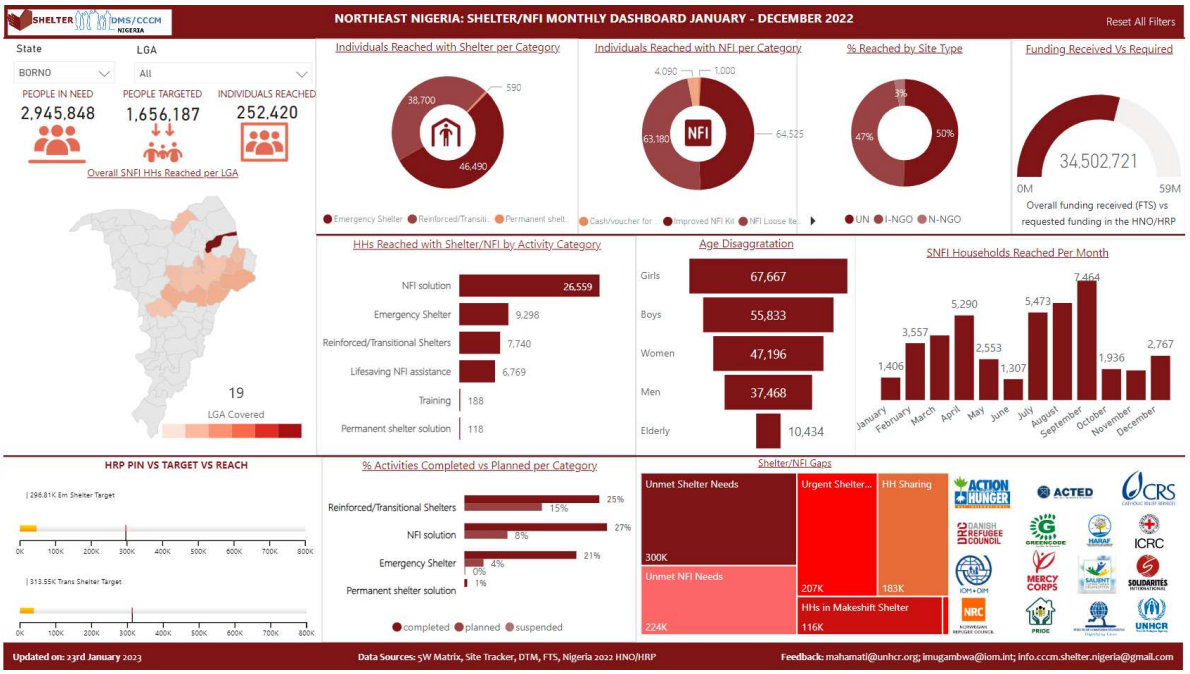
Ultimately, these measures result in more effective humanitarian and development outcomes. The information gathered through a rigorous MEAL process informs decisions that can lead to adjustments and improvements in interventions, thus increasing their impact on the lives of beneficiaries.

In a broader sense, addressing these challenges not only signifies a commitment to excellence in humanitarian and developmental work but also underscores a dedication to the welfare of those in need. It demonstrates a conscientious effort to maximise the positive impact of interventions, ensuring that they reach their intended beneficiaries and contribute to meaningful and sustainable change in their lives.

Chapter 5. Knowledge sharing in the aid sector

In this chapter I will mainly analyse two projects in which the organisation I did my internship with collaborated and in which I was able to partially cooperate directly in the field; in particular, I have chosen these two projects as they align perfectly with the approach of knowledge sharing and sustainability in the emergency humanitarian context.The attitudes of aid workers when it comes to knowledge sharing are pivotal in understanding the broader dynamics of this process. Knowledge sharing is not a simple task; it requires substantial investments in terms of resources, capabilities, and effort from all parties involved. These investments are essential for improving the organisation's overall competitiveness. When we delve into the attitudes of aid workers, we are essentially exploring their willingness and commitment to engage in knowledge sharing. This willingness can vary significantly from one individual to another and can be influenced by various factors such as organisational culture, personal beliefs, and perceived benefits.

Aid workers, like anyone else, may have differing attitudes towards knowledge sharing. Some may see it as a valuable opportunity to contribute to the organisation's growth and enhance its ability to provide aid effectively. These individuals are likely to be proactive in sharing their insights, experiences, and expertise with colleagues and partners. On the flip side, there may be aid workers who view knowledge sharing with reluctance or scepticism. They might perceive it as time-consuming, risky, or even detrimental to their own interests. This group may need additional incentives, encouragement, or a change in organisational culture to foster a more positive attitude towards sharing knowledge.



Infographic 1: shelter situation December 2022

The image above shows the situation at the overall end of last year in terms of the need for safe housing and the distribution of NFIs (non-food items) in the areas where INTERSOS has projects. This data was obtained jointly with various organisations through the sharing on the CCCM cluster of all those EROs that have had and still have projects around the Maiduguri LG area.

The first project I'm going to describe is, linking back to the context just mentioned, the route that MERCY CORPS and INTERSOS have taken for the *transition and stabilisation of mud bricks for low-cost, low-impact housing* in the LGAs of Borno State.

5.1. Shelter context

The continuous displacement of vulnerable people and destruction of shelters and household assets due to the insurgency continues to be the main drivers for shelter needs across Borno, Yobe and Adamawa states. The lack of adequate shelter exposes the most vulnerable people to significant protection risks threatening their dignity, physical well-being and living standards. Shelter needs remain high even after a number of years of humanitarian action since emergency shelters provided for IDPs have a short life span of six months and do not provide beneficiaries sufficient protection from the environment, are highly prone to wear and tear, and require periodic replacement to provide privacy, dignity, and security. Human population is growing faster than people can afford to build houses, thus creating a housing shortage. In many countries like Nigeria, an average citizen cannot afford the cost of constructing a modest accommodation. It is therefore imperative to source for innovative and sustainable techniques to make low-cost and effective building materials available. Mud brick, an affordable low-cost building material made from the abundantly available lateritic soil, has associated problems with some of its properties, hence must be modified to ensure its suitability.
The identified issues with mud brick include the compressive strength and water resistance which leads to durability problems, for instance, perforation of the walls and gradual erosion of the brick building. Lateritic soil in its natural state generally has low bearing capacity and strength due to its high clay content. When lateritic soil contains a large amount of clay materials, its strength and stability cannot be guaranteed under load especially in the presence of moisture.

5.2. Exploring shelter solutions for IDPs living with host communities and Returnees

This applied research paper is aimed at improving the quality of mud bricks using low cost stabilisation and compression techniques to obtain good quality and low environmental impact. The soil used in this study was obtained in Damboa and Ngala local government areas of Borno State, Northeast Nigeria. For this research, ordinary Portland cement and local straws (Gamba grass and Chaqqa) were used as partial replacement of clay soil by mass in the production of mud bricks. The replacement percentage used were 0%, 2.5%, 5% and 7.5% for cement replacement and 0.1%, 0.3% and 0.5% for straw replacement.
Compressive strength and water absorption tests were performed in accordance with British Standard (BS) 3921:1985 to determine its suitability as a building material. The compressive strength and water resistance of the mud brick samples increased considerably with increase in cement and straw replacements at 28 days curing period.
Therefore, stabilised compressed earth bricks (SCEB) technique has improved the quality of local mud bricks in the study area. This applied research, funded by USAID-Bureau of Humanitarian Assistance (BHA) under the program, Addressing Diverse and Acute Primary Threats to Human Security in Northeast Nigeria (ADAPT) was conducted by Mercy Corps Nigeria, in collaboration with the University of Maiduguri and Ramat Polytechnic.

Mercy Corps conducted housing typology surveys in Dikwa, Damboa, Ngala, Bama and Gwoza local government areas of Northeast Nigeria from 2018 to 2019 while INTERSOS carried out surveys in the past 2 years, maintaining the highest presence in field operation amongst all EROs in Borno State.
The surveys showed that mud bricks are among the abundantly used, self-produced and economical construction materials. The bricks have helped the IDPs, returnees and the host to repair their completely damaged shelters economically, compared to cement blocks that cost 20-25 times more depending on the location. Mud blocks are in high demand for the major damaged shelters in the rural areas. Skills for casting these bricks are abundant in the rural LGAs, moreover, self-builders are also busy in making these bricks for their shelter repairs as observed in INTERSOS-Mercy Corps areas of operations. The use of locally available stabilisers such as straws, husks and crushed dry leaves that act as a reinforcement to some extent, have also been observed.
However, overall, the mud bricks observed in the field have poor quality. These poor quality bricks don't last long under the heavy rains and rain shortens the life of a mud block structure. The two organisations saw the critical need to take care of the mud bricks used in recovery efforts to ensure ongoing self-recovery and self-building efforts are sustainable. Local mud bricks are made by mixing earth with water, placing the mixture into moulds, and drying the bricks in the open air. Strong tension fibres, such as straw are often added to bricks to help reduce cracking. Mud bricks are joined with a mud mortar and can be used to build walls, vaults, and domes. The appearance of mud bricks reflects the materials they are made from, usually earthy, with their colour determined by the colour of clays and sands in the mix. Finished walls can range from a strong expression of the brick patterns to a smoothly continuous surface. Some of its properties and advantages are:

- Economical
- Fireproof
- Durable
- Non-toxic
- Environmentally-friendly
- Provides thermal insulation
- Provides low sound transmission levels
- Is culturally and socially acceptable
- Locally developed Underneath Borno State is the Chad pattern, a chain of clay and sand.

The most important element to be considered when searching for the right earth mixture for compressed mud bricks is the clay content as it acts as the natural binder of the earth mixture. The clay content in the mixture should be between 8-30% for a good, stabilised mud bricks. The aim is to improve the quality of locally produced mud bricks using local techniques in the study area, looking at the soil properties for suitability and using strength analyses through different stabilisers and ratios, as well as, examining the environmental

The materials used in this research are lateritic soil, Ordinary Portland Cement (OPC), local straws, water, and compressed earth brick machine. The soil is collected at a minimum depth of 0.6 metres at the river banks in Damboa and Ngala, Borno State, Northeast Nigeria. The soil samples were air-dried for 14 days to allow partial elimination of natural water which may affect analysis, then sieved through 4.75mm opening to obtain the final soil samples for the tests.
The tests conducted include natural moisture content, specific gravity, sieve analysis particle size distribution (PSD), liquid limit, plastic limit, plasticity index. The moisture content theoretically falls in the range of 0 to ∞. However, in sandy soils, water content usually found varies between 10% to 30% and in clayey soil it ranges from about 5% to possibly over 300%.

Picture 2: Soil proportioning for mixing

The specimen was prepared with the desired levels of stabilisations of 0%, 2.5%, 5%, and 7.5% of Ordinary Portland Cement (OPC) and 0.1%, 0.3% and 0.5% of local straw, respectively. The bricks of size 295 x 140 x 90mm were moulded using the OSKAM V/F machine with a hydraulic press for block making. Compressive strength and water absorption tests were conducted on the mud brick samples after 28 days curing period

Picture 3: Compressed stabilised mud brick samples

The summary of the results obtained from the various laboratory experimental tests conducted on the mud bricks to determine its suitability as a construction material are shown below:

	PROPERTIES	VALUES (Damboa)	VALUES (Ngala)
1.	Colour	Reddish Brown	Greyish Brown
2.	Natural Moisture Content	19.3%	17.6%
3.	Percentage passing sieve no BS 200	85.96%	87.65%
4.	Liquid Limit	32.5%	30.0%
5.	Plastic Limit	21.5%	20.5%
6.	Plasticity index	11.0%	9.5%
7.	Specific Gravity	2.59	2.68
8.	AASHTO Classification	A-2-6	A-2-4

Tab 2: Physical parameters of Earth Material

Using the (AASHTO, 1986) method of classification, both soil samples fall into group A-2 (silty or clayey gravel and sand), a suitable soil for compressed mud brick stabilisation. The Atterberg limit test by the Casagrande method was performed in accordance with (BS 1377 1990) to ascertain plasticity index (PI) of the soil samples. The results are presented in Table above. The PI of 11% for the soil sample does not exceed the maximum value of 35% stipulated by (BS 1377 1990) thus indicating a good laterite soil that is cohesive and hence able to receive proper compaction to enhance the strength and durability characteristics of the laterite. Hence, the soil sample is suitable for cement stabilisation.

	Sample	Description	Avg. Weight of block (g)	Avg. Compressive strength (N/mm^2)	Avg. Water absorption (%)
1	S	Soil only	7500	5.23	23.32
2	C2.5	2.5% cement	7500	5.18	20.40
3	C5	5% cement	7600	8.67	19.81
4	C7.5	7.5% cement	7650	9.25	17.22
5	ST0.1	0.1% straw	7500	5.37	23.06
6	ST0.3	0.3% straw	7400	6.75	22.5
7	ST0.5	0.5% straw	7400	6.79	24.00
8	Adobe	Conventional	6300	2.07	31.09

Tab 3: Summarised Compressive Strength and Water Absorption Test Results for Damboa Mud Brick Samples

	Sample	Description	Avg. Weight of block (g)	Avg. Compressive strength (N/mm^2)	Avg. Water absorption (%)
1	S	Soil only	7450	6.51	21.94
2	C2.5	2.5% cement	7400	6.77	19.92
3	C5	5% cement	7450	8.11	18.43
4	C7.5	7.5% cement	7500	9.98	14.79
5	ST0.1	0.1% straw	7400	4.49	21.93
6	ST0.3	0.3% straw	7330	5.96	23.21
7	ST0.5	0.5% straw	7450	6.51	21.94
8	Adobe	Conventional	7400	6.77	19.92

Tab 4: Summarised Compressive Strength and Water Absorption Test Results for Ngala Mud Brick Samples

From Table 3 and 4, the results of water absorption are a function of the cement content, which means the higher the cement content the higher the resistance of the bricks. Bricks with higher water absorption rate could be used for partitioning and for non-load bearing walls.
The findings of the study demonstrated that when using a cement stabiliser at a rate of 7.5%, the compressed mud bricks exhibited the most favourable outcomes in terms of both compressive strength and water absorption levels in comparison to the other brick samples. This was consistent for both of the examined locations.
To gain a better understanding of the economic implications, a preliminary cost assessment was conducted. This assessment aimed to determine the average cost associated with producing compressed stabilised mud bricks with a 7.5% cement replacement, utilising both manual and automatic earth compression machines operated by local mud brick artisans. The results indicated that the cost of manufacturing one unit of compressed stabilised mud brick, sized at 295 x 140 x 90mm, ranged between 57 to 60 naira.
Furthermore, the study estimated the cost of constructing a simple two-room house with a veranda using these compressed and stabilised mud bricks. The estimated cost for such a construction project amounted to approximately 322,000 naira. This figure is notably lower than the cost of constructing a house of the same size using conventional cement blocks, which was found to be around 901,000 naira based on market prices as of January 2022.

Based on the summary of the research conducted, the following conclusions were drawn:

- The soil samples have significant characteristics that make it suitable for compressed cement stabilised mud bricks.

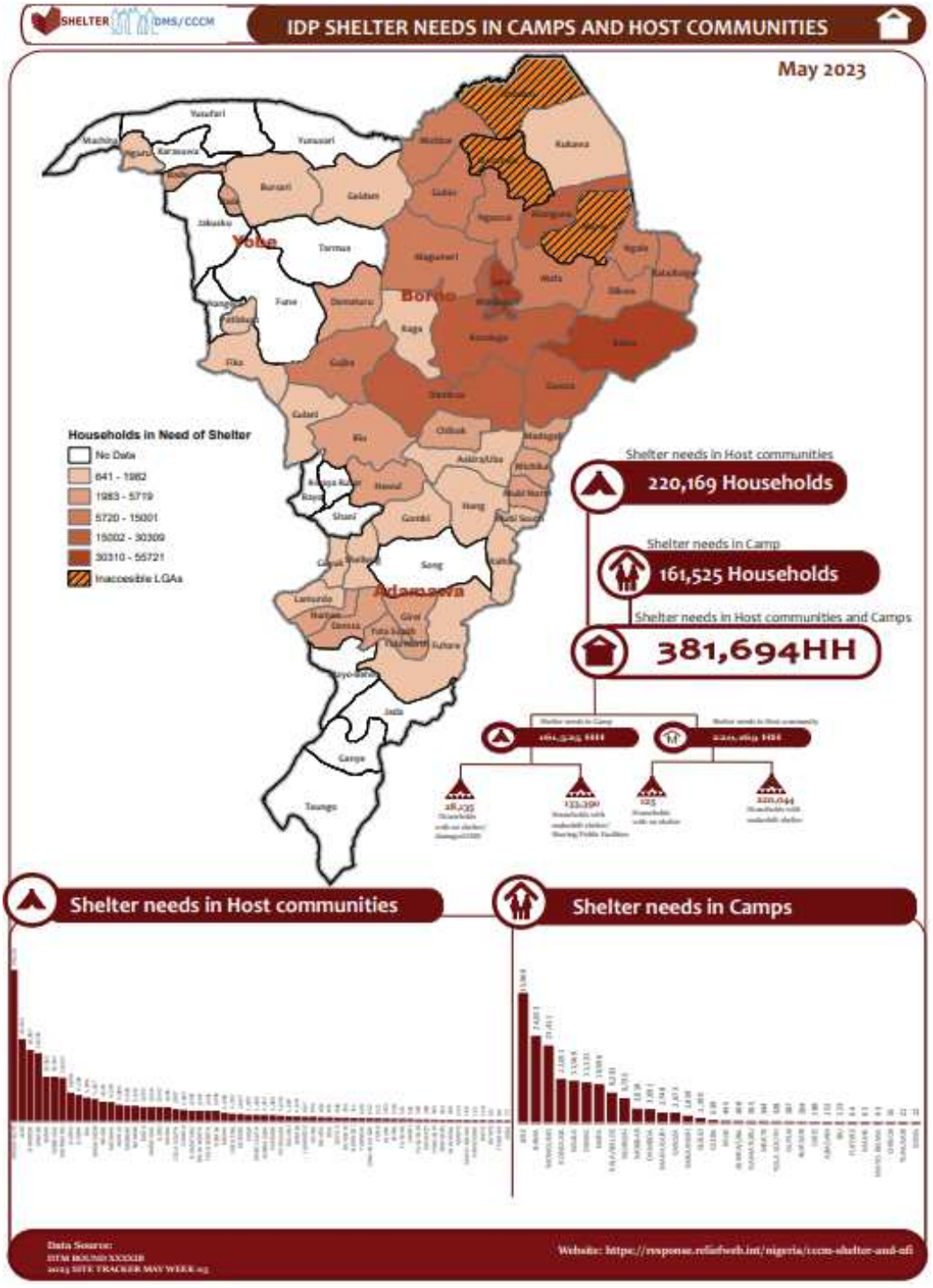
- The strength of the soil sample increased with increasing cement stabilisation level from 0% through 7.5%. The highest compressive strength of 9.25N/mm2 was achieved with 7.5% cement stabilisation level of the sample at curing age of 28 days. The maximum strength obtained at 28 days is within the minimum strength requirement recommended for the construction of low-rise buildings.

- The water resistance of the samples increased with increasing cement stabilisation level from 0% through 7.5%, though the optimum cement content to achieve 100% water resistance of the bricks was not established in this research.

- Stabilisation with straw showed no significant increase in strength with increasing the percentage level. It is also concluded that mud bricks stabilised with straw have no significant improvement in the water absorption rate of the bricks.

- Stabilised compressed mud bricks produced with OSKAM V/F machine showed the best result in terms of both strength and water resistance capacity, as the machine compresses with a higher pressure of 150 bar compared to the conventional method adopted by local mud brick producers.

In May this year, the shelter situation was as follows:



Map 3: Shelter need in May 2023

5.3. The context of fishing in Nigeria

This project explores the impacts of a comprehensive programme that combines aquaculture and homestead gardening in the context of North East Nigeria. This intervention is designed to serve as a means to facilitate economic recovery and contribute to peace-building efforts in the region.
The integration of aquaculture, which involves the cultivation of aquatic species like fish, with homestead gardening, which focuses on growing vegetables and other crops around one's residence, is a holistic approach aimed at addressing multiple challenges faced by communities in Maiduguri peripheral area. These challenges may include food insecurity, economic instability, and the need for sustainable livelihoods, especially in areas affected by conflict and displacement.
Livelihood programmes, including this one, aim to assess how integrating approaches affects the economic well-being of local communities, in North East Nigeria. It seeks to understand how the combined practices of aquaculture and homestead gardening can create economic opportunities for individuals and households, ultimately contributing to the broader goal of post-conflict recovery and fostering peace in the region. By examining the outcomes of this intervention, the research seeks to shed light on its potential as a viable strategy for enhancing economic resilience and stability in a context where such efforts are crucial for rebuilding communities and reducing conflict-related vulnerabilities.

The initial context (as the project analysis started in 2017 and ended during my period of deployment) depicts Nigeria as the foremost fish consumer on the African continent and ranks prominently among the world's most significant consumers of fish, with an annual consumption rate of approximately 3.2 million metric tons.
The high level of fish consumption in Nigeria highlights the critical role that this food plays in the country's food culture and nutritional landscape. Fish is a crucial protein source for the Nigerian population, meeting the dietary needs of millions of people across the nation. Its popularity in the country is attributed to its affordability, accessibility, and versatility in various culinary traditions.
Moreover, this substantial demand for fish has notable economic implications. It drives both the domestic fisheries industry and international fish trade, making Nigeria a significant player in the global seafood market. The country's fishing sector supports livelihoods, generates income, and contributes to the overall food security of its population.
As Nigeria continues to experience population growth and urbanisation, the demand for fish is expected to remain robust, with implications for both the domestic fisheries sector and international trade. Consequently, understanding the dynamics of fish consumption in Nigeria is not only vital for addressing food security but also for evaluating the economic and trade-related aspects of the country's fisheries industry on both a regional and global scale.

The fisheries and aquaculture sectors in Nigeria are experiencing remarkable growth and are widely recognized as some of the most rapidly expanding sub sectors within the country's economy.
This growth is significant as it reflects the increasing importance and contribution of these sectors to Nigeria's overall economic development. It signifies that the fishing and aquaculture industries are not only thriving but also playing a pivotal role in providing employment opportunities, enhancing food security, and bolstering the nation's economy.
The rapid expansion of these sectors can be attributed to several factors, including increased domestic demand for fish products, advancements in aquaculture technology and practices, and a growing focus on the sustainable management of aquatic resources. As more Nigerians recognize the nutritional value and economic potential of fish, both capture fisheries and aquaculture are becoming increasingly attractive avenues for investment and livelihoods.

This growth has a positive impact beyond the economic sphere. It contributes to the diversification of the Nigerian diet by providing a vital source of protein and essential nutrients. Additionally, it reduces the country's reliance on imported fish products, thereby improving food self-sufficiency and reducing the trade deficit.

Nigeria boasts an extensive coastline stretching for 853 kilometres and encompasses vast inland waters, spanning over 14 million hectares in total. The combined output of fish production in this diverse aquatic environment reaches nearly 1 million metric tons annually. To break down this impressive figure, aquaculture contributes around 313,231 metric tons, while fisheries account for a substantial 759,828 metric tons.
This abundance of aquatic resources underscores the immense potential of Nigeria's fisheries and aquaculture sectors. The country's diverse aquatic ecosystems, ranging from coastal areas to inland waters, provide a fertile ground for the production of fish and other aquatic species.
The noteworthy production figures signify that Nigeria is not only endowed with a rich aquatic environment but also has a thriving fishing industry. Both aquaculture and traditional fisheries play crucial roles in contributing to the nation's food security, economy, and employment generation.

Fishing holds a paramount role in the lives of the economically disadvantaged, serving not only as a critical means of livelihood but also as a fundamental source of dietary protein within Nigerian households.

To elaborate, fishing is a lifeline for many individuals and families in Nigeria who rely on it as a primary source of income and sustenance. For the economically disadvantaged segments of the population, especially those residing in coastal or fishing-dependent communities, it represents a livelihood that supports their day-to-day needs and financial well-being. This includes not only the fishermen themselves but also a network of ancillary workers, such as fish processors, traders, and boat operators, whose livelihoods are interconnected with the fishing industry.
Moreover, at the household level, fish plays a pivotal role in ensuring adequate nutrition and food security. It serves as a readily available and affordable source of protein, essential nutrients, and dietary diversity. For many Nigerian families, particularly in regions with limited access to alternative protein sources, fish is a staple that contributes significantly to meeting their dietary requirements.

5.4. Effects of Integrated Aquaculture & Homestead Gardening Intervention in North East Nigeria: A Pathway to Economic Recovery and Peace Building

As a consequence of the ongoing crisis, the security conditions in the vicinity of Lake Chad have deteriorated significantly, resulting in a precarious environment that has forced a suspension of fishing operations. This situation has had a profound impact on the livelihoods of the local population, particularly the youth and women, who have traditionally relied on fishing as a means of sustenance and income. Consequently, these individuals find themselves facing heightened vulnerabilities, including food insecurity and unemployment, which, in turn, exacerbates their dependency on external food assistance.
To delve further into the issue, the security challenges in the Lake Chad region have created an atmosphere of instability, making it perilous for fishermen to venture out and engage in their trade. As a result, many young people and women, who previously depended on fishing for their livelihoods, are now grappling with the loss of a crucial source of income. This loss not only

threatens their economic well-being but also poses a significant risk to their food security as they struggle to access nutritious and affordable food.

Furthermore, the situation has increased their reliance on humanitarian aid to meet their basic food needs. With limited economic opportunities and disrupted fishing activities, these vulnerable groups, including youth and women, have little choice but to seek external assistance to feed themselves and their families. This dependency on food aid not only places a strain on humanitarian organisations but also underscores the urgent need for comprehensive solutions to address the root causes of the crisis and restore stability to the region.

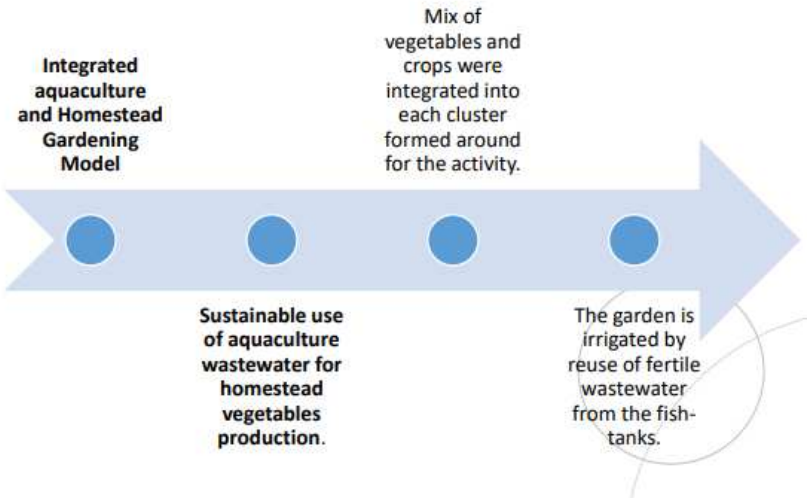
5.4.1. The Birth Of Aquaculture Intervention

It was against this background that FAO, WFP and UN Women eyed into the 2017 Humanitarian Response Plan led by the Presidential Committee for the Northeast Initiative to bring peace, stability/social cohesion and economic recovery among the affected populace. This led to the birth of a joint resilience and response project funded by EUTF targeting 13 LGAs in Borno State for 3 years. One of the components of this project is provision of aquaculture starter kits and fish processing kits to the affected communities. Only in 2020 INTERSOS joined alongside the founding partners to share knowledge and capacity in this livelihood project.

In April 2019, the Food and Agriculture Organization (FAO) initiated its inaugural program that combined aquaculture and vegetable production in Borno State. Initially, this intervention was implemented to benefit 50 households (HHs). Subsequently, in October 2019, it was expanded to include an additional 100 households, bringing the total number of participating households to 150 by that time. This initial phase of the project was successfully concluded in December 2020, with an extra 50 households incorporated, achieving a total of 200 households as the project's initial target.
In 2022 10 clusters for 1500 HHs were established across the BAY States.
From 2019 – 2023 a total 1 ,820 HHs were supported
In order to add maximum value to the product, the FAO Thiaroye Technology (FTT) smoking kiln was introduced within the local communities as a means of promoting both safe and energy-efficient methods for processing catfish.

To elaborate, the introduction of the FTT smoking kiln represents a significant innovation aimed at improving the way catfish is processed within these communities. Traditional smoking methods can often be unsafe, as they may expose fish processors to harmful substances, and they are typically energy-inefficient, leading to higher fuel consumption. In contrast, the FTT smoking kiln offers a safer and more sustainable alternative.
This technology is designed to provide a controlled and secure environment for smoking catfish, ensuring that the process adheres to food safety standards. Additionally, it is engineered to be highly fuel-efficient, which is particularly important in regions where fuel can be scarce or expensive. By using the FTT smoking kiln, communities can reduce their energy expenses while simultaneously enhancing the quality and safety of their smoked catfish products.

A Total of 14 fish processing centres were established across the BAY States, then 400 women fish processors were attached to the centres. For a total of 140 women fish processors trained on TB production across 5 FFT Fish Processing Centers in Borno and Yobe states



Scheme 3: implementation strategy

5.4.2. The Effects and what we have learnt (translated to Best Practices)

The cluster approach is instrumental in promoting social cohesion among its beneficiaries, which include internally displaced persons and members of host communities. This strategy brings together diverse groups of people, often facing challenging circumstances, and creates a sense of unity and mutual support. By organising them into clusters, it enables these individuals to collaborate effectively, share resources, and collectively address their needs and challenges. This not only enhances their social bonds but also strengthens their resilience and ability to cope with adversity.

This project promoted by FAO's and offered through the commitment of different actors, the aquaculture initiative, is instrumental in generating employment and income opportunities, particularly for young individuals. This program not only benefits the direct beneficiaries but also extends its positive impact along the entire fishery value chain. By creating jobs in various aspects of the aquaculture industry, such as fish farming, processing, and marketing, it contributes to reducing unemployment rates among youth and empowers them economically. This, in turn, bolsters the local economy and livelihoods.

The aquaculture initiatives also contribute significantly to improving the diversity of household diets.

Picture 4: Aquaculture induction

FAO's approach encourages the sustainable use of water resources in aquaculture by integrating micro-gardening. This means utilising aquaculture water not only for fish production but also for cultivating small-scale gardens. This dual-use of water resources promotes sustainability, optimises resource utilisation, and enhances food security by diversifying the range of crops produced.
This forward looking livelihood project incorporates training on Group Saving and Loan Associations (GSLA) into fish farmer groups as a mainstream practice. GSLAs are essential for building financial literacy and promoting savings and investment among community members. By integrating this training into fish farmer groups, FAO enhances financial inclusion, empowers individuals to manage their finances effectively, and creates opportunities for economic growth and self-reliance within these communities.

Conclusion

In the humanitarian relief sector, achieving effective operational coordination among a multitude of semi-autonomous organisations has been a persistent challenge. This paper contends that information sharing plays a pivotal role in making such coordination feasible, and it highlights how different forms of interaction between organisations can foster varying levels of trust. However, it goes beyond this and suggests that major humanitarian organisations may need to fundamentally reconsider the concept of coordination itself.
Rather than bemoaning the scarcity of top-down coordination mechanisms, it proposes that these institutions and their beneficiaries could benefit from a shift in mindset. They should actively cultivate organisational cultures that promote and nurture enhanced inter-organizational trust, thereby facilitating more efficient cooperation. To pursue this objective, one strategy could involve persuading the leadership of these organisations to embrace and implement a collective rationality and sense-making approach in their missions and in the training and development of their staff.

Over time, this approach has the potential to reshape the cultures of these organisations, leading to improved inter-organizational coordination and more favourable outcomes for those they serve. It's worth noting that this transformation will require patience, as few endeavours are as challenging as altering human attitudes and perspectives. Nevertheless, it is an achievable goal. Furthermore, this approach aligns with ongoing efforts to establish common strategic and operational ground through authoritative top-down initiatives, emphasising that a combination of bottom-up and top-down approaches can enhance the effectiveness and impact of humanitarian relief efforts.
This research has focused on the factors that hinder the effective implementation of KM in EROs, these factors include human factors, which are supposed to be covered by human resources management. The structural factors include governance, internal processes, policies, technology, and organisational culture.

Modern technologies such as AI can be used to help aid in interrogating and analysing massive data, to provide a meaningful and informed decision-making process. The review of the literature discovered additional components of knowledge that had not been addressed. This includes the conceptualization of tacit and implicit knowledge and AI, and the discovery of subsets of knowledge and potential channels to help solve problems.

In recent years, knowledge management theory has become an omnipresent and important element of organisational development. It includes processes intended to improve organisational effectiveness and it describes the convergence of people, processes, and systems.
At the same time, its application is limited to the development of technology for document repository and sharing.
When conducting the study, I followed a combination of structural, iterative, and interactive processes, involving targeted “participants”; during informal conversation about the difficulty to share knowledge in and between organisations a WHO logistics manager argued as follows:

> Taking my example, I started this job about 20 years ago. Obviously, I am likely to follow over group of managers who are older than 35, meaning we have less IT skills, and are less prone to long deployments. However, there are other factors as to why people younger than 35 are underrepresented in management positions; one reason is that they are the so-called millennials. This group does not have the same values as we do. For example, we value the organisation and they value the job. This may explain why we do not trust them and we don't share; another reason is that when they get a better job, they just quit.

Therefore, it is understandable how communication gaps are created within the dynamics of this also due to age, culture and experience.
Argrys (1993) introduced the concept of double-loop learning in the organisational environment; this concept is rooted in organisational theory and management that can be effectively applied to the humanitarian context, where adaptability and continuous improvement are paramount. The humanitarian dimension brings its workers to operate in complex and dynamic environments where the stakes are high, and the consequences of failure can be devastating. In such contexts, double loop learning can help these organisations enhance their effectiveness and responsiveness.
Double loop learning goes beyond single loop learning, which involves making incremental adjustments to existing strategies and processes. Instead, it encourages organisations to question their fundamental assumptions and values, challenging the status quo to drive meaningful change. In the humanitarian sector, this means not just responding to crises with predefined protocols but also critically examining the underlying principles guiding their actions.
EROs often have deeply ingrained values and assumptions about their mission and the best ways to deliver aid. DLL encourage to step back and critically assess whether these values and assumptions are still valid and relevant in the face of evolving challenges (paradigm of imposing ideologies and projects, regardless of the will of local people)
Humanitarian workers at all levels should feel empowered to voice their concerns and suggest alternative approaches without fear of reprisal (acknowledged dynamic in INTERSOS) . This open dialogue can lead to the discovery of innovative solutions to complex problems, firstly the continuous turnover of operators).
Interesting is the underlying concept of DLL that in order to really implement change and solve internal problems, the main thing is to question the internal policies that drive organisations. This in my view is a focal point that, by observation, occurs among younger operators and requires more effort from those who would actually have more experience and resonance in organisational hierarchies
Basically double loop learning promotes collaboration among organisations, allowing them to share knowledge, best practices, and innovations that can benefit the entire sector.

In conclusion, double loop learning can significantly enhance the effectiveness and adaptability of humanitarian organisations. By challenging assumptions, promoting critical reflection, and fostering a culture of continuous improvement, EROs can better navigate the complex and ever-changing landscape of humanitarian crises, ultimately improving the outcomes for the communities they serve.
The lack of a shared vision within humanitarian emergency organisations can lead to a multitude of problems that hinder their effectiveness and impact in responding to crises. A shared vision serves as a guiding light, aligning the efforts, goals, and values of all team members. Without it, as it happens, it's easy to encounter issues as fragmented responses: when different teams within an organisation lack a shared vision, they may pursue divergent strategies and priorities. This fragmentation can lead to a disjointed response, where resources are not optimally allocated, and critical needs are left unaddressed or also communication breakdown.
Team members may become demotivated and disengaged when they do not see a clear direction or purpose for their work. A lack of trust can develop within the organisation, as individuals question the decision-making process and the intentions of their colleagues.
Difficulty in partnership building is another big issue caused by lack of system thinking; collaboration with other organisations is essential in humanitarian response. Without a shared vision, it becomes challenging to build effective partnerships, as potential collaborators may be unsure of the organisation's priorities and values.
Ultimately, all the above definitively have a negative impact on the beneficiaries of humanitarian aid. Delays, inefficiencies, and resource misallocation can mean that aid does not reach those in need in a timely and effective manner, potentially exacerbating the suffering caused by emergencies.
To address these problems, humanitarian emergency organisations must prioritise the development and communication of a clear and shared vision. This vision should encompass the organisation's mission, values, and goals, and it should be regularly revisited and refined to adapt to changing circumstances. By fostering a shared vision, these organisations can enhance their coordination, effectiveness, and overall impact in providing assistance to those in crisis.

There is a need to create knowledge management strategies to exploit tacit and implicit knowledge and integrate it into AI. This requires the use of a holistic knowledge transfer framework to facilitate the process of transformation of tacit and implicit knowledge into effective deliverables.

As of 2023, INTERSOS have more than one AI-based technology operating in their mission, whether in the form of a pilot project or as part of their routine operations. Some international staff reported that they did not use AI, although upon discussions with teams from different departments within the same organisation, it was revealed that the technologies for GIS and other drone-based technologies are upcoming and progressively more in use.
This research is of interest to individuals acting in emergency relief organisations, national government agencies dealing with disaster management issues, academics, and technology-based organisations that specialise in the aid sector, this knowledge axis provides opportunities to continue encouraging the future developments of integrated KM concepts, to help KM practitioners effectively deliver knowledge to bottom-line activities.

The relevance of human capital in this research lies in investigations on increasing knowledge advantages that can be generated by gender equity, age differences, a contingent workforce, coaching, rotational management and collaboration.
Organisational knowledge governance and the implicit processes and rules appear to be the main obstacles for the transferability of TK and IK in the aid sector, thus contributing to the failure in the knowledge sharing process.
A professor, and Swiss Angolan expat, in a moment of chit-chat to my question "why, for you, do organisations struggle to exchange information" replied, paraphrasing that the competitive dynamic that characterises the globalised world as we know it, has also taken root in dimensions that would have nothing to do, theoretically, with productivity and consumption. Therefore, even organisations are called upon to maintain production standards, attractiveness and competitiveness, and by exchanging information they risk seeing their chances of receiving funding, and thus sustaining themselves, diminished.

In all this, the paradox is that beneficiaries in this case IDPs, in these discourses, are not considered.

Entering the development of logistics, the BT (which is also known as distributed ledger technology) is considered as a transformative technology with the potential to increase transparency and build trust in the supply chain across various EROs. The technology has the potential to play a critical role in enhancing cooperation via building a strong network among various actors engaged in disaster relief operations. This study aimed to provide a couple examples of this distributed ledger technology in the humanitarian supply chain.
The simple equation that knowledge sharing is good for organisations cannot be sustained, knowledge can be augmented if it is shared, knowledge sharing may also prove detrimental to knowledge. The first will occur if people truly learn from each other. The second is to be expected if inadequate representations of knowledge are transferred between people. Both the acts of externalisation and internalisation require that knowing subjects should recognize the value of the knowledge to be shared.
Otherwise, there is no knowing how both these processes, that require active intellectual involvement of the knowl-edge sharers, are best constructed.
I believe the key to success in knowledge sharing is that the personal ambition should match the group ambition. Therefore, also the touchstone of successful ICT applications for knowledge sharing is the question how they relate to these ambitions, and to the motivation of knowledge workers to match them.
A specific bias may be noted with respect to how organisations go about motivating their workers to share their knowledge with the assistance of ICT.
Prevailing motivation theories suggest that compensation and force are not effective to motivate human behaviour, whereas such factors as recognition and challenge of work are. Yet many instances can be found where measures are being used to further ICT-assisted knowledge sharing that aim at the first class of factors, or "hygiene factors".
The quantity of knowledge sharing may perhaps be enhanced with money, its quality cannot.

The story does not end here: gaining insight into the motivation factors of knowledge sharing is a first, essential step towards understanding how the same can be managed. The use of ICT can be an important instrument in this respect, but certainly not the only or most prominent one. These indicate some of the limitations of this study, along with those identified earlier.
The lessons that readers interested in the management of knowledge sharing may reap from this article can be summarised in three points. First, the role of ICT for knowledge sharing can only be fully understood if it is related to motivation.
Second, knowledge sharing has to be recognized as an umbrella term for different concepts. Both the motivation for knowledge sharing and the role of ICT may well vary with respect to these different concepts. Third, other factors, such as personal preferences and a knowledge sharing culture should be considered explicitly.
AI can make a difference for knowledge sharing. Understanding what this difference will be cannot be learned by looking at the technology only. The argument developed here suggests that the motivation for knowledge sharing provides the appropriate focus for conceiving the difference.
The research finding is that most organisations implement employee rotation poorly, as they mostly use it to fill gaps in positions and rarely to help employees learn. Job rotation management is an important opportunity for employee learning because they can access different departments and jobs. This is as an additional way for employees to be exposed to new type of jobs in practice
This dissertation found that major organisations fail to provide consistent policies and guidance for knowledge systems, forcing people to find alternative ways to continue interacting informally. The informal interactions exchange important knowledge that organisations fail to capture. This research proposes more inclusive organisational platforms, systems, and culture that allow employees flexibility to contribute to the development of organisational knowledge while delivering services effectively.

As previously mentioned, we are aware of several limitations of this research.
The first limitation is that the research does not focus on technology development, content management, and development of social media. This is because these topics are largely covered in the literature. This dissertation partially focuses on the human perspective of knowledge management, and it discusses how individual knowledge can be shared between people and the ways that tacit and implicit knowledge can be articulated to create collaborative clusters and provide valuable services and projects to beneficiaries.
Another limitation is that the dissertation did not investigate the role of a female workforce in the aid sector more deeply, and how it can contribute to improving the HR and knowledge gap in the field. This dissertation did not answer all the questions raised by the organisations, regarding the challenges with the use of AI in EROs. This will involve further research about the potential risks related to the use of AI such as biometrics and facial recognition services for this sector.
The case study only addressed successful projects carried out by INTERSOS and other NGOs, but did not mention the numerous failed ones.

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