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Collaboration in Humanitarian Operations in the Context of the COVID-19 Pandemic

Milad Keshvari Fard*¹ and Felix Papier†²

¹Newcastle University Business School, Newcastle Upon Tyne, UK

²ESSEC Business School, Cergy, France

Abstract

This chapter provides an overview of collaboration in humanitarian operations, focusing on the logistical aspects. Humanitarian logistics and operations has emerged as a sub-field of supply chain and operations management and studies how humanitarian organisations can be more efficient in the delivery of humanitarian aid. We review the key characteristics of this sub-field compared to traditional logistics and supply chain management. Collaboration is particularly important in the humanitarian context, in which only the collective performance of humanitarian organizations should count. We therefore discuss key factors of collaboration using the humanitarian SCOR model. Finally, we analyze how far the COVID-19 pandemic has forced humanitarian organizations to collaborate differently in their operations and what can be learnt from it for the future of humanitarian operations.

Keywords: Humanitarian Operations, Humanitarian Logistics, Collaboration, COVID-19 Pandemic, Disaster Relief, Development Programs, Humanitarian SCOR Model

*Electronic address: milad.keshvarifard@newcastle.ac.uk

†Electronic address: papier@essec.edu

1 Humanitarian Operations

In 2019, more than 396 natural disasters occurred, affecting 95 million people and leading to a cost of USD 103 billion. The frequency and cost of these disasters were higher than the average of the last 10 years¹. In the same year, the number of displaced people in the world, including refugees and asylum seekers, reached 80 million, a record number which is twice as high as the average of the years 1990 to 2010²; and yet this situation is before the disastrous year of 2020. Such ever-growing needs for aid have led to a growth in humanitarian organizations (HO) operating on the ground. For example, after the 2010 Haiti earthquake, between three and ten thousand aid organizations engaged in aid delivery (Kristoff and Panarelli 2010). In 2019, the United Nations (UN) received more than 18 billion USD in donations for humanitarian aid, which benefited more than 117 million people around the globe². It is obvious that this enormous collective effort requires efficient logistics and supply chain processes; from the sourcing to the delivery on the ground. This is the field of *humanitarian operations and logistics*.

Humanitarian aid and consequently its operations are often categorized into disaster relief and development programs. While the former consists of preparedness and response activities to mitigate the effect of a crisis, the latter focuses on enhancing the welfare of beneficiaries, building local capacities, and improving resilience in local communities through longer and more stable operations.

According to Van Wassenhove (2006), between 60% to 80% of the total costs of any humanitarian aid goes to logistics; therefore, humanitarian operations have received significant attention in recent years. The attention toward this field started after the 2004 Asian tsunami, when despite the huge donor supports, massive inefficiencies were observed and HOs were heavily criticized. Since then, HOs started to systematically build competencies in logistics, operations, and supply chain management, and a growing community of academics has begun to perform research on humanitarian operations (Besiou and Van Wassenhove 2020).

While humanitarian operations share some common elements with traditional, commercial operations, there exist a number of fundamental differences between the two. First, HOs do not seek to

generate profit as their ultimate goal; instead, their objective is to enhance the living conditions and welfare of the beneficiaries. Therefore, HOs follow objectives such as equity, effectiveness, and efficiency to plan their operations and evaluate their performance. Second, HOs rely on donations and grants from public and private donors to finance their operations. Relying on donations, however, poses many challenges to HOs; usually HOs are under-financed, which forces them to prioritize their engagement. Moreover, the amount and type of donations and the timing of receiving these donations are not known with certainty in advance, rendering the management of humanitarian operations particularly difficult. Furthermore, donors may typically choose to *earmark* donations, i.e., to assign them to a certain purpose or region. While this possibility is appealing for donors and can increase the amount of funds raised, it poses severe constraints on the operational flexibility of the HOs and in allocating their resources to the most urgent operations (Aflaki and Pedraza-Martinez 2016). Third, humanitarian operations are conducted under highly uncertain conditions; crises vary in nature, size and requirements, making the needs highly unpredictable. Such uncertainty also exists on the supply side, given the frequent absence of formal contracts between the HOs and suppliers, lack of qualified suppliers, and scarcity of aid items in the aftermath of crises. Uncertainty of the operational environment, especially after disasters (e.g., damaged roads or malfunctions in communication systems) as well as the short implementation time, further complicate the operations. In addition, humanitarian organizations often operate in insecure environments with significant security challenges, are composed of a complex landscape of stakeholders, have difficulty in hiring and retaining talented employees, and are faced with high levels of corruption (Wagner 2020, Berenguer et al. 2020, Keshvari Fard et al. 2021).

In order to model the humanitarian operations, Lu et al. (2016) adapted the well-known *Supply Chain Operations Reference Model (SCOR)* from commercial operations to humanitarian operations. The *Humanitarian SCOR* model has four *level 1 processes* : (I) PLAN, (II) RAISE & SOURCE, (III) STORE, and (IV) DELIVER. See also Wagner (2020) for a detailed discussion of the humanitarian SCOR model. The process *PLAN* comprises all tasks related to identifying needs, planning missions, and achieving *disaster preparedness* . Preparedness activities include, among others, estimating the likelihood of each type of disaster, hiring and training staff, pre-positioning material and supplies, and securing suppliers and transportation capacity (Van Wassenhove 2006).

The process *RAISE & SOURCE* corresponds to all activities related to procuring and receiving materials and supplies as well as managing suppliers and service providers. We also include in this step the important activity of fundraising which provides indispensable resources for humanitarian operations. The process *STORE* comprises the storage of supplies and assets in the right locations. In particular for disaster relief, the immediate availability of aid items and operational assets is a key challenge. Finally, the process *DELIVER* comprises the transportation and distribution of supplies, including local delivery and management of personnel, equipment, and vehicles. See, for example, Gralla and Goentzel (2018). In Section 2.4 we use the humanitarian SCOR model to further investigate the collaboration among HOs.

2 Collaboration in Humanitarian Operations

2.1 Overview

Many actors are typically engaged in humanitarian operations, especially after major crises. Although this provides a significant amount of financial, human, and material resources, without proper collaboration and coordination among these entities, inefficiencies and waste of resources would be inevitable. Consequently, there is increasing pressure from donors and governments on HOs to engage in collaboration with each other as well as other actors such as local governments, military, and private sector companies, in particular, logistics service providers (Jahre et al. 2007, Falagara Sigala and Wakolbinger 2019).

The benefits of collaboration are well-known and comprise, for example, higher operational efficiency, better quality of service, faster learning from other organizations' practices, acquisition of new skills, risk sharing, higher public accountability, and conflict avoidance among different parties (see, e.g., Gazley 2010). But there are also numerous obstacles that render collaboration in the humanitarian context particularly difficult. Actors are often considerably different in terms of purpose, skills and expertise, capacity, mandate, values, and organizational cultures. They may follow different agendas for their strategic and operational decisions, have varying degrees of autonomy, and consider different time frames for their missions. Under such heterogeneity, it may be difficult

to find common grounds for collaboration (Balcik et al. 2010). Other impediments of collaboration include the threat of losing a core competency, lack of trust and transparency regarding the fair allocation of benefits, and lack of resources (Schulz and Blecken 2010). Therefore, HOs with similar vision, mission, and internal policies have easier routes to collaboration. Willingness to share valuable assets (e.g., access to unique information, supply chain expertise, infrastructure) among HOs, especially when they are complementary, is another key predictor of the success of collaboration (Moshtari 2016). Finally, mutual trust, reciprocal commitment and information sharing are among the most cited success factors of collaboration.

2.2 Types of collaboration

Collaboration in humanitarian operations can be categorized as vertical, horizontal, and diagonal collaboration.

Vertical collaboration concerns collaboration between upstream and downstream partners of a humanitarian supply chain, such as donors, fundraising entities, organizations with procurement, warehousing, and transportation capabilities, and last-mile delivery organizations. Often, vertical collaboration benefits from a *Central chain coordinator*. A successful example of vertical collaboration is the *World Food Program (WFP)*, which collaborates with more than 1,400 organizations and coordinates the operations of all of its partners (Moshtari and Gonçalves 2017).

Horizontal collaboration refers to collaboration among organizations that provide similar services or functions. This type of collaboration may involve HOs that are at the same time competing with each other on other parts of the value chain, leading to what is known as *coopetition*. An example of coopetition is the collaboration between the *Muslim Aid* and the *United Methodist Committee on Relief* in Sri Lanka's Trincomalee District, where the two organizations established joint offices and warehouses, and shared staff, vehicles, aid supplies and logistical support, while working in coordination with their respective faith and community councils to collect funds and coordinate the mobilisation of volunteers. A successful model for horizontal collaboration is the *Service provider approach*, in which one organization takes the role of the 'service provider' and the other partners act as 'customers'. This approach has several advantages for the HOs, in particular with regard

to logistics-related activities. It provides economies of scope and economies of scale and facilitates the consolidation of transportation and operations of multiple HOs (Schulz and Blecken 2010). Although horizontal collaboration can significantly enhance the capacity, efficiency, and agility of humanitarian operations, there usually exist several barriers, such as the impediments mentioned in Section 2.1.

Diagonal collaboration occurs between organizations that are in different sectors and that are also at different stages in the supply chain, with no direct competition or relationship in terms of the service they provide. Humanitarian-business partnerships usually fall in this category, and provide HOs with the access to resources, expertise, processes, and technologies of the private sector, and improves the professional and managerial skills of HOs (Cozzolino 2012). An example is the partnership between MasterCard and *Save the Children* in developing the *MasterCard Aid Network* that is designed to streamline aid distribution even in the absence of telecommunications infrastructure³.

2.3 The United Nations model of collaboration

To give a better idea of the scale and the players involved, in this part we provide an overview of the largest and most organized humanitarian collaboration, supported by the UN. The UN has been implementing international collaboration mechanisms for humanitarian responses since 1991 through subordinate entities such as Inter-Agency Standing Committee (IASC), Emergency Relief Coordinator (ERC), and Resident Coordinators (RC) for each country. In 1998, the UN established the *Office for the Coordination of Humanitarian Affairs (OCHA)* to further coordinate humanitarian actions among different actors to achieve timely decision making and effective disaster preparedness and humanitarian response. OCHA alerts the affected population and HOs in the early stages of a disaster or even before its occurrence. It provides a comprehensive picture of overall needs and prioritizes actions, ensuring that assistance and protection reach the people who need it most. To that purpose, OCHA engages with a diverse set of actors to achieve a common understanding of the humanitarian context and a collective plan for the response. These actors include UN entities, the Red Cross/ Red Crescent Movement (IFRC, ICRC), national and foreign

militaries, local and international NGOs and private sector companies, faith-based organizations, and many more. OCHA assembles and mobilizes the resources, plans the operations and coordinates the actions of hundreds of different actors that collaborate vertically, horizontally and diagonally⁴.

In 2005, the UN introduced the *Cluster approach*⁵, with the objective to bring together all actors relevant to certain key activities of humanitarian aid, such as logistics, health, or food security. A cluster lead is assigned to each cluster to coordinate the actions within the cluster. The goal of the cluster approach is to enhance preparedness and response capacity in humanitarian crises, as well as to provide clear leadership and accountability. Figure 1 demonstrates the UN’s 11 clusters. These clusters can be activated in case of a major sudden-onset crisis, or as a result of a natural disaster or conflict, that requires a system-wide mobilization of resources.



Figure 1: UN clusters with the associated cluster lead(s).

The Logistics Cluster: Considering the importance of logistics in humanitarian operations, the Logistics cluster is one of the most important clusters. WFP was chosen as the cluster lead due to its expertise and infrastructure in the field of humanitarian logistics. The role of the Logistics cluster is, among others, to fill logistical gaps, to alleviate bottlenecks, to prioritize logistics investments, to collect and share information, to coordinate ports and corridor movements with the objective of

reducing congestion, and to provide guidance on customs issues. Obviously, WFP cannot handle alone all of these tasks for the logistics cluster. To that purpose, it has been engaging in partnerships with governments, NGOs, and the private sector. For example, the Boston Consulting Group, TNT, Citigroup, Unilever, DSM, the Vodafone Group Foundation, the Bill and Melinda Gates Foundation are among WFP's partner organizations (Quinn 2010).

A key initiative of the cluster that facilitates the collaboration of different members is the *Logistics Cluster Preparedness Platform*⁶. This global platform shares updated, processed and relevant information with different actors and associates of the cluster. This platform is a dynamic data collection tool that integrates real time reports with images, mapping and analytics to enhance decision makings for both preparedness and response phases⁷.

Logistics Emergency Teams: One of the main entities working for the Logistics cluster is *Logistics emergency teams (LET)*. LET is a unique and successful model of partnership between humanitarian organizations and the private sector. Through the LET, four of the largest global transportation companies, Agility, UPS, Maersk, and DP World, work together to support the Logistics cluster. The LET continuously holds more than one hundred trained volunteers on standby in different countries, who are ready to be deployed upon the request of the WFP within 48 hours⁸. LET has a steering committee, where they convene regular meetings, together with the representatives of the Logistics cluster⁹.

The LET contributes to the logistics cluster in several ways such as providing logistics experts (e.g., warehouse managers), logistics assets (e.g., trucks and warehouses), and logistics services (e.g., airlifts) (Cozzolino 2012). It also develops internal knowledge for HOs (e.g., through workshops) and assists agencies and governments in improving their preparedness for humanitarian crises. In that regard, one of the main contributions of the LET are *Logistics Capacity Assessments (LCA)* for different countries. LCAs are formal evaluations containing information on the region's logistic infrastructure such as roads, customs, airports, bridges, etc. As of 2019, the LET has performed LCAs for more than 100 countries and identified the overall emergency response strategy and execution, support for contingency planning activities, preparation of emergency response plans, and measures to improve overall response time and operations costs¹⁰.

Case 1 - LET Intervention after the Flooding in Northern Peru: In March 2017, massive flooding struck northern Peru. The flood was the worst in more than 50 years; more than 125,000 houses were destroyed, leaving nearly 200,000 people homeless. Approximately 2,500 km of roads were destroyed, and the main roadway from Lima to the affected northern regions of the country was blocked. The LET supported the Peruvian government in its response to the flooding. DP World took the "on-the-ground" leadership role in coordinating with the Ministry of Production and the Ministry of Defence teams to provide logistics support. Agility and UPS donated local trucking support and moved more than 500 tons of donated relief items from Callao to government consolidation facilities. DP World donated port storage and processing space in the port of Lima to enable the efficient processing, loading and storage of cargo awaiting transportation to the north of the country. DP World also worked with its ocean carrier partners to provide free shipping of relief materials to the Northern part of the country¹¹.

2.4 Collaboration along the Humanitarian SCOR model

In this part, we discuss collaboration among HOs and its implications in all phases of the humanitarian SCOR model.

Collaboration in planning (PLAN)

According to UNDP, spending one dollar on preparedness activities and reducing people's vulnerability, could save around 7 dollars during disaster response¹². Cost effectiveness, as well as other objectives, has forced HOs to invest in preparedness and planning activities. Collaboration with other actors should be established at this phase, as it would allow for a more timely, effective and efficient response, compared to ad-hoc collaborations. For example, in periods of normalcy, the UN clusters continuously conduct tasks such as developing relationships with local authorities, establishing emergency supply chain preparedness, and identifying evacuation plans specific to each region.

A successful collaboration planning should go beyond verbal agreements; formal contracting and mutual framework agreements can result in better collaborations (Van Wassenhove 2006, Berenguer

et al. 2020). Moreover, similar to the cluster approach, having a central coordination entity and clear cooperation mechanisms are mandatory for successful collaboration. These mechanisms should define the responsibility of each actor, develop strategies to overcome unpredictable issues during relief operations, and allow other HOs to join the collaboration.

HOs should also adopt a strategic approach toward building trust in the preparedness phase. To that purpose, HOs have to invest in developing relationship management capabilities, such as coordination, communication, and bonding skills (Moshtari 2016). Wagner and Thakur-Weigold (2018) propose an experiential learning approach to bring different actors together. Building trust also facilitates the exchange of data and communication of IT systems, which is vital for successful collaboration. Different actors should accumulate their knowledge and information about the field in a central platform (see for example the Logistics Cluster Preparedness Platform discussed in Section 2.3). Consequently, the missing data should be identified and collected in advance of crises. An example of data that is crucial for humanitarian operations are digital maps of underdeveloped regions. The *Humanitarian OpenStreetMap Team*¹³ is an initiative which provides open mapping, to which HOs and volunteers can contribute in building accurate maps for vulnerable areas.

Case 2 - Earthquake Response Workshop in Bangladesh: *Bangladesh is particularly vulnerable to natural hazards such as earthquakes, flooding and tsunamis. Its capital Dhaka is one of the most densely populated cities in the world, and an earthquake in this region could lead to a high number of casualties. In August 2019, more than 100 humanitarian experts gathered in Dhaka for a three day Earthquake Response Workshop to build collective disaster preparedness. Jointly organized by the Bangladesh Ministry of Disaster Management and Relief, the WFP, and the UN, the workshop consisted of a disaster simulation that placed humanitarian workers in a real-life scenario. Participants gained a better understanding of how different types of disasters impact Dhaka, and how to mitigate this impact. Through the workshop, participants examined and simulated different supply chain operations during a potential urban earthquake, identified bottlenecks and gaps, and designed and fine-tuned their response plans to such an event. Each team's operational plan was evaluated by a panel of government officials who oversaw and coordinated the country's overall emergency response*¹⁴.

Collaboration in sourcing and funding (RAISE & SOURCE)

Donors usually allocate funds according to the stand-alone performance of the HOs. This leads to competition of HOs over funds and media attention (Nagurney et al. 2016), and discourages collaboration. Earmarked donations can further exacerbate the situation. One solution for this is to have a central agency responsible for the collection of donations and their allocation to different HOs during humanitarian crises (Eftekhar et al. 2017). Nonetheless, with a strategic fundraising attitude, even competing HOs can join forces to raise funds more effectively. *Alliance Urgences*¹⁵ is an example for such a collaboration, that unites six HOs in France that collaborate through joint donor contact, fundraising, and budget allocation. Pooled humanitarian funds is another mechanism that allows for better collaboration in the funding stage.

Lack of trust and transparency is a key barrier to collaborative fundraising. Several HOs have recently started adopting blockchain technology. Blockchain-based platforms for donations can enhance swift trust among different actors, leading to higher collaboration among HOs, and enhanced supply chain resiliency (Dubey et al. 2020). Coordination among large donors such as governments, for example about the destination of funds, can also facilitate the collaboration among HOs.

Collaboration is also of strategic importance for sourcing, in particular for smaller HOs. Joint purchasing between multiple HOs to combine expertise as well as purchasing volume is an effective way to manage purchasing of complex products and services. Joint purchasing of items results in lower purchase prices, improved supplier selection processes with higher product quality, and long term contracts with suppliers which reduces the risk of supply shortage (Schulz and Blecken 2010). Participating in such partnerships can also strengthen an HOs' visibility among donors and the general public. An example of joint purchasing is the *COVID-19 Emergency Service Marketplace* of the UN (see also Section 3).

Case 3 - Country Based Pooled Funds (CBPF) and Central Emergence Reponse Fund (CERF): *CBPFs are multi-donor resources dedicated to countries with ongoing humanitarian crisis (18 countries as of 2021). With these funds, hundreds of local and international HOs could finance urgent projects without having to raise funds on their own. In 2020, the CBPFs received USD 891 million, which were allocated to 682 partners for 1,339 projects in the 18 different coun-*

tries. International HOs received the largest share of the funds (42%), followed by national HOs (33%), and UN agencies (22%). CERF, on the other hand, is a central, non-earmarked fund to satisfy the most critical needs worldwide. With a USD 1 billion annual target, CERF allows OCHA to immediately fund operations right after disasters, to scale-up activities when a situation deteriorates, and to maintain critical operations when other funding falls short. To allocate funds to the most urgent projects during emergencies, the UN agencies and other HOs jointly assess and prioritize the needs and apply for CERF/CBPFs. Funds are immediately released if the proposals meet the previously-developed criteria. This collaborative process allows for quick, flexible, efficient, and effective financing of humanitarian operations¹⁶.

Collaboration in storage (STORE)

Collaborative storage is frequent among large HOs. In this case, several HOs share a network of common warehouses and storage facilities for aid items and certain equipment (e.g., vehicles and generators). The benefits of shared storage in humanitarian operations are similar to those for the private sector, including decreased fixed costs by consolidating facilities, equipment and personnel, access to a wider network of warehouses and therefore, larger area coverage, lower transportation costs, and shorter lead times for aid delivery (Schulz and Blecken 2010).

Some items such as water, tents, medicine, blankets, chlorination tablets and protein biscuits, are particularly important in relief operations. Shared storage for these items is particularly effective when combined with joint purchasing, such that HOs use the same material and supplies. In such case, HOs can go beyond sharing storage and also share inventories and equipment, leading to higher flexibility and reduced risk of stock-out.

Case 4 - UN Humanitarian Response Depots (UNHRD): Managed by WFP, UNHRD serves 86 partners including UN agencies, governments, and NGOs. The core function of UNHRD is to provide warehousing, inspection and handling of prepositioned relief items free of charge for its partners. UNHRD runs a network of six humanitarian support hubs located in Italy, Ghana, United Arab Emirates, Spain, Malaysia, and Panama. The location of each hub provides easy access to airport, port, and road systems, allowing response times of 24-48 hours in case of a disaster. The

hubs support dry storage, cold chain storage, special storage for dangerous goods, and storing a wide range of items from refrigerated medicines to armored vehicles. In addition to storage, the UNHRD provides a range of related services such as procurement and transportation. Through long term agreements with a wide range of suppliers for core products as well as transportation providers, the partners do not need to go through a long tendering process for each order. Due to the consolidation effect, the procurement of items and their transportation from suppliers to the field via the warehouses can happen at a lower cost and in a shorter time. Interchange of stock or stock loans is also common among the partners of UNHRD, where HOs can borrow the stock of other organizations in case of urgent need and replenish it later. UNHRD encourages its partners to keep stock that meets common standards in unbranded condition, to allow the borrowing organization to brand it with its own logo before dispatching it¹⁷.

Collaboration in aid delivery (DELIVER)

Aid delivery is the final stage of a humanitarian supply chain. Geographical dispersion of beneficiaries and difficulties of accessing them, the diversity of logistics requirements, reliability of available information, and security concerns are some of the issues that render this step particularly challenging. In relief operations, the urgency and criticality of aid delivery brings even higher attention to the last mile delivery, and collaboration plays a particularly important role in this step.

Collaboration requires coordination. The absence of organized coordination among different actors during relief operations not only results in inefficient use of resources, but also leads to unnecessary congestion and chaos, worsening the situation by delaying the aid operations. In case of large disasters, local governments with the help of the UN are usually the main coordinators, controlling the entry and intervention of actors and coordinating different activities (Van Wassenhove 2006). Collaboration is particularly effective if it involves HOs with different resources and specializations, such as vehicles, drones, doctors, and relief items. For example, during a large scale crisis, up to thousands of actors from all of the 11 UN clusters with different competencies in logistics, nutrition, healthcare, etc., collaborate to deliver aid.

Collaboration in humanitarian operations highly depends on effective information sharing and re-

liable IT platforms that are accessible to many actors. Having cloud-based IT solutions and using mobile devices for aid workers significantly enhances the efficiency of operations, as it provides HOs with improved data collection as well as real-time and optimized decision making.

Case 5 - The Relief.iO Platform: *In 2017, the SAP 1BL venture Relief.iO was launched. The venture offers a robust collaboration platform to enable stronger collaboration between humanitarian stakeholders such as HOs, governments, and the private sector. The platform provides a mobile app for activity planning and collaboration among HOs; HO workers in the field can report the needs, accompanied with GPS information and pictures. The app also uses machine learning tools to inform the field workers about similar activities by other HOs, and allows to connect with staff of those HOs. Moreover, Relief.iO uses a machine learning based tool to support the coordination and reporting activities. For example, it allows to read the reports from different HOs in various formats, understand and extract the required data, correct wrong data and even fill missing data, and finally consolidate them into a single report. Relief.iO also allows establishing a disaster relief supplier network. Real time supply chain optimization techniques are used in the background to improve the aid efficiency¹⁸.*

3 Learnings from the COVID-19 Pandemic about Collaboration in HOs

Mark Lowcock, Head of OCHA, writes in December 2020: "The picture we're painting this year is the bleakest and darkest perspective on humanitarian needs we've ever set out"¹⁹. The COVID-19 pandemic has affected the populations and economies in many countries, with more than an estimated 134 million people infected by the novel coronavirus and 2.9 million related deaths by April 2021. The pandemic has also led to a global decline of economic activity in 2020 in the order of 4-6%²⁰.

The COVID-19 pandemic has put many humanitarian supply chains to its limit, and has forced actors to rethink their operations and collaboration. Many organizations had to adapt by improvising

new operational processes and by rethinking their collaboration with other actors. We believe that much can be learned from the current period and some of the crisis adjustments may be maintained for the long term. In this section, we review some of the impacts that the pandemic has had on humanitarian operations and how HOs reacted to them.

Surge and Shift in Humanitarian Need

The economic and political consequences of the pandemic have led to a surge in humanitarian need. In December 2020, OCHA estimated that 235 million people worldwide were in need, representing a 40% increase in humanitarian need compared to the previous year²¹. The pandemic also led to a shift in the priorities of humanitarian missions. For example, the displaced population, more than 80 million persons globally of which many live in camps or camp-like settings, have substantial vulnerabilities during the pandemic, and their protection against the disease requires additional activities such as providing personal protective equipment and material for basic hygiene. In April 2020, 68% of HOs reported a reallocation of resources to missions related to the fight against COVID-19²². Finally, the geographic distribution of need also shifted.

The surge and shift in the demand for humanitarian aid forced many HOs to reconsider their planning and prioritization of missions, to re-allocate resources to new countries and new activities, while reducing their engagement in others. This is a particularly difficult task and requires building new capacities and competencies and relocating supplies and personnel. Earmarked donations render the adjustment of operations to the pandemic particularly complex. Changing the prioritization of missions requires a careful assessment of the global impact of the decisions. The effects of a reduced engagement in some missions can have dramatic consequences. For example, it was estimated that a 15% reduction in the vaccination activity against measles would lead to more than a quarter of a million related childhood deaths, potentially exceeding the impact of COVID-19²³.

A key learning from prior pandemics is that rapidly changing needs should be met with a strengthening of the local deployment of aid activities, which leads to more agility and also more relevance for local needs. HOs should seek to decentralize decision making to local *emergency response centers*. Konyndyk et al. (2020) suggest an *Area-based coordination* of humanitarian operations compared to the more common cluster-based coordination. Under an area-based approach, coordi-

nation is performed locally by involving all relevant actors of the same area. This approach is more holistic and human-centered than the cluster approach, and consequently allows better alignment of humanitarian actions with local needs and more autonomy for front-line actors. Local emergency response centers should also work closely with local governments and public authorities to build buy-in.

Uncertainty of Donations for Humanitarian Aid

The COVID-19 pandemic has not only affected aid receiving countries but also aid providing countries in the developed world. The economic impact and the need for adapting national health systems and economies to the pandemic has led some public top donors to reconsider their commitment to funding humanitarian aid. For example, in July 2020, Global News reported that overall donation commitments from the largest governments has been only USD 16.9 billion, representing a drop of 30% compared to the commitments in 2019 at the same time of the year²⁴.

The sputtering arrival of donation commitments and the general level of uncertainty in the first part of the COVID-19 pandemic has also raised doubts about the certainty of the commitments made. This doubt led to additional uncertainty, and consequently to more difficult operational planning. HOs hesitated to commit resources to some of their planned missions, waiting for the confirmation of donations. This led to a delay in execution and even to cancellations of humanitarian missions, even if donations finally arrived as planned.

Protecting against donation uncertainty is difficult. On the upstream side, HOs can prepare by keeping a buffer of financial resources available (see, for example, Keshvari Fard et al. (2019)) and by being transparent on the prioritisation of their missions. On the downstream side, HOs may seek to build agile operations and to postpone key decisions as much as possible, for example through redesigned logistics processes and flexible supplier contracts.

Restrictions for International Transport and Logistics

Right from the onset of the COVID-19 pandemic, many countries restricted the movement of goods and people. By April 2020, 145 out of 195 countries had put in place border closures and 141 countries had at least partially suspended international flights. These restrictions were particularly

harmful to humanitarian operations, because of their international nature and the moderate budget available: 79% of HOs reported restrictions on their international movements and 22% reported limitations on the import and export of their humanitarian supplies. As a consequence, HOs had to reduce their activities. 7% of HOs had to stop all operations and 13% had to limit their operations exclusively to life-saving activities²⁵.

Some HOs decided to switch to activities that do not require complex logistics, such as providing cash-based assistance. Another strategy to counter the effect of limited international movements is to rapidly build local capacity and skills. Building local capacity includes recruiting and training local staff, which reduces the need for international movement, reduces exposure of foreign aid workers, and helps building local buy-in. 43% of HOs reported using this strategy during the COVID-19 pandemic²⁶.

In May 2020, the European Union (EU) put in place and financed the temporary *EU Humanitarian Air Bridge (EU HAB)*. Under this air bridge, the European Commission together with the EU member states provided dedicated air cargo and passenger capacity to maintain the flow of goods in the humanitarian supply chain, in particular to Africa. Any HO that requested transportation for humanitarian aid could apply to the services. In addition to the financing, the European Commission and the member states also provided diplomatic support for the organization of the dedicated flights. The *Humanitarian Logistics Network (Reseau Logistique Humanitaire - RLH)* and its member associations helped to coordinate the transportation by consolidating needs and transportation specifications. By the end of 2020, with a budget of only EUR 10 million, EU HAB transported 1150 tons of cargo and 1700 humanitarian aid workers to more than 20 different countries²⁷.

Since then, WFP has set up the *COVID-19 Emergency Service Marketplace*, an online platform for free cargo consolidation and transportation services of humanitarian supplies. The network provided air, sea, and ground transportation to many different countries and relies on eight global hubs (Guangzhou, Dubai, Liege, Kuala Lumpur, Addis Ababa, Panama City, Accra, Johannesburg). Wherever possible, the marketplace helped to consolidate cargo to allow for direct transportation from the source to the destination country²⁸.

The two examples of the EU HAB and the COVID-19 Emergency Service Marketplace illustrate the necessity of collaboration among HOs during the pandemic. Given the many limitations and restrictions, individual HOs found it very difficult to ensure global transportation. A network of collaborating actors is much better suited to overcome the many obstacles resulting from the pandemic. In this network, every actor should contribute its specific competencies. In the case of EU HAB, the EU provided the political and financial support, while the RLH and other organizations contributed their competencies in humanitarian operations and their knowledge of the needs of the participating HOs.

Shortage of Essential Supplies

The outbreak of COVID-19 led to a severe shortage of essential items, such as personal protective equipment and medicine. This shortage triggered the emergence of several initiatives of collaboration, in particular in the area of procurement.

In the first half of 2020, the UN and the WHO created the *COVID-19 Supply Chain System*, consisting of a central supply chain task force to coordinate supply decisions, a supply portal and purchasing consortia to pool procurement of essential items, and a control tower for day-to-day coordination of the transportation from suppliers to the destination countries. The system provided access to a selection of 50 critical items such as personal protective equipment or diagnostics tools. Its objectives were to consolidate demand from different HOs (e.g., by aligning specifications and timing), to increase purchasing power by aggregating volumes, to ensure equitable allocation to different HOs and countries, and to provide efficient distribution, relying on the COVID-19 Emergency Service Marketplace (see above)²⁹.

In April 2020, the *Coalition for Epidemic Preparedness Innovations (CEPI)*, the *Global Alliance for Vaccines and Immunization (Gavi)*, and the WHO created the virtual *Global Covax Facility*, a pooled purchasing mechanism for COVID-19 vaccines³⁰. Because of its experience with vaccine logistics, UNICEF served as a key distribution partner for the Global Covax Facility, ensuring global transportation, traceability and authentication of vaccines, and waste management. Covax concerned more than 90 middle- and lower-income countries that would not be able to individually secure access to COVID-19 vaccines. A global procurement platform helped securing production

capacities for these countries. Allocation was based on peoples' needs rather than on a country's purchasing power. Developed countries and other large donors provided financial guarantees to vaccine manufacturers to invest into corresponding production capacities. Covax also established a continuous forecast on planned vaccine allocation volumes for each participating country, providing countries with planning stability to set up the necessary distribution logistics.

There are manifold career opportunities for operations graduates and professionals in HOs. HOs provide stimulating and international work environments, with a strong focus on execution and practice and a strong purpose to support those in need. For example, among many others, the ICRC has career opportunities in supply chain coordination, purchasing and supplier management, or warehousing and inventory management. The ICRC highlights the importance of language skills and flexibility to adapt to a constantly changing environments and particularly values leadership and people management skills³¹.

Notes

¹<https://reliefweb.int/sites/reliefweb.int/files/resources/ND19.pdf>

²<https://www.unocha.org/sites/unocha/files/20190CHAannualreport.pdf>

³<https://newsroom.mastercard.com/press-releases/mastercard-transforms-aid-distribution/>

⁴<https://www.unocha.org>.

⁵<https://www.humanitarianresponse.info>

⁶<https://www.arcgis.com/apps/MapSeries/index.html?appid=bc6ab99b622a4ef799b0cd0ad869b090>

⁷<https://logcluster.org/preparedness>

⁸<https://logcluster.org/logistics-emergency-team>.

⁹LET Annual Report 2018.

¹⁰LET Annual Report 2019.

¹¹LET Annual Report 2017.

¹²http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf

¹³<https://www.hotosm.org>

¹⁴<https://www.wfp.org/news/preparing-unexpected-humanitarians-build-their-capacity-earthquake-response>.

- ¹⁵<https://www.allianceurgences.org>
- ¹⁶<https://www.unocha.org/our-work/humanitarian-financing>
- ¹⁷<https://unhrd.org/about-us>.
- ¹⁸<https://relief.io>.
- ¹⁹<https://abcnews.go.com/Health/wireStory/pandemic-fan-surge-humanitarian-2021-74474230>.
- ²⁰Report 'Global Economic Effects of COVID-19 - Update on 10 February 2021', Congressional Research Service, 2020.
- ²¹<https://abcnews.go.com/Health/wireStory/pandemic-fan-surge-humanitarian-2021-74474230>.
- ²²Report 'COVID-19 Impact on Humanitarian Operations', ACAPS, 2020.
- ²³<https://science.sciencemag.org/content/369/6501/261>.
- ²⁴<https://globalnews.ca/news/7203980/coronavirus-humanitarian-aid-drops>.
- ²⁵Report 'COVID-19 Impact on Displaced Populations', ACAPS, 2020.
- ²⁶Report 'COVID-19 Impact on Humanitarian Operations', ACAPS, 2020.
- ²⁷https://ec.europa.eu/echo/eu-humanitarian-air-bridge-helping-aid-reach-people-need-during-coronavirus-pandemic_en.
- ²⁸<https://emergency.servicemarketplace.wfp.org>.
- ²⁹<https://www.who.int/publications/m/item/COVID-19-supply-chain-system-requesting-and-receiving-supplies>.
- ³⁰<https://www.who.int/initiatives/act-accelerator/covax>.
- ³¹<https://www.icrc.org/en/publication/4317-humanitarian-logistics-supply-chain-management>.

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Practitioner's note

Linda Romano, Faculty Development Manager, University of Ottawa, Humanitarian practitioner since 2006

What role does collaboration play in the humanitarian sector? Collaboration is essential as humanitarian organizations seek to maximize their efficiency and increase their footprint when carrying out their missions. Agencies in this sector collaborate in various capacities with similar organizations, as well as with actors in the private and public sectors to share knowledge, expertise, resources, and to address societal issues in a comprehensive manner. The most successful humanitarian endeavours engage a multitude of players in complex collaboration with government agencies, philanthropic foundations, individual and corporate donors, service providers, and other humanitarian organizations. Collaboration in the humanitarian sector has been also a key element in the humanitarian response to the COVID-19 pandemic, where organizations leveraged existing partnerships to respond to increasing needs in a rapidly changing environment. These relationships had been cultivated over several years, at times decades, which enabled the humanitarian sector to mobilize rapidly and pivot during the unprecedented crisis.

What are the career opportunities in supply chain and logistics in the humanitarian sector and what are the skills needed? The sector offers operations graduates opportunities to apply their skillset in an alternate environment, merging the need to optimize operations with a humanitarian organization's mission and values. Available positions range in scope, from community-based to international work environments for applicants. Experience in data analysis, optimization, and simulation are assets in these positions.

Recently, there has been an emphasis on optimizing processes and streamlining procedures to decrease operating costs and increase outputs. The sector has seen an accelerated shift in adapting more efficient solutions, such as working with external vendors or using new software to better manage inventory. As service delivery needs change, people in these positions require a high-level of adaptability and creativity, and the ability to critically analyze their operations through the HO lens, which can mean the incorporation of ethical considerations into planning and execution. This enables agencies to alter their approaches to meet the needs of their target population. As the demand for humanitarian relief can increase exponentially in uncertain times, leaders with experience in crisis management and contingency planning, are particularly equipped to help ensure the service delivery in a timely fashion.

Essentially, while supply chain roles remain similar across sectors, working for a humanitarian organization requires additional levels of analysis and planning to ensure that internal and external processes coincide with the humanitarian organization's values.

How do you expect the humanitarian sector to change in the post-COVID world? As the pandemic persists, the humanitarian organizations that have the capacity to respond to the increasing needs of their stakeholders by adapting their operating models, being flexible and partnering with other organizations or sectors will continue operating. These agencies will expand as humanitarian needs and wealth disparity continue to grow, but they will also fill in the gaps left behind by organizations who have not succeeded in adapting to the digital age or who had to cease operating for other reasons. The humanitarian sector has experienced waves of consolidation in the past, typically associated with decreased funding. In those instances, the ones that survived had solid donor bases, diversified revenue streams, and the capacity to collaborate with different sectors to fulfill their mandates. Another aspect to consider is the emergence of social entrepreneurship that combines private and humanitarian sector operating models. While these models are not pervasive, their influence continues to grow and may impact how the humanitarian sector operates. These effects remain to be seen on a broad scale. To sum up, the humanitarian sector in the post-COVID world will be one of increased collaboration between the private, public, and humanitarian sectors, which at times may appear blurred with the advent of social entrepreneurship. The agencies that thrive in this changed environment will have a renewed focus on efficient service delivery, increased investment in digital transformation, social media presence and revenue generating activities.