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Strengthening Interoperability and Collaboration in Humanitarian Supply Chains

Advancing Inter-Agency Coordination across the United Nations

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The research was conducted independently by the author, who retains full responsibility for the research design, analysis, and validation of the findings and recommendations. The views and conclusions expressed in this report are those of the author and do not necessarily reflect those of HELP Logistics or the Kühne Foundation.

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List of acronyms

3PL	Third-Party Logistics provider
ADEPT	Accelerating Delivery for Essential Products Together
AI	Artificial Intelligence
API	Application Programming Interface
ASYCUDA	Automated System for Customs Data
BI	Business Intelligence
CSCMP	Council of Supply Chain Management Professionals
DG ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
ERP	Enterprise Resource Planning
ESUPS	Emergency Supply Prepositioning Strategy
FAO	Food and Agriculture Organization of the United Nations
HLGSC	Humanitarian Leadership Group on Supply Chain
HLCM	High-Level Committee on Management
IASC	Inter-Agency Standing Committee
ICRC	International Committee of the Red Cross
IMPACCT	Importation and Customs Clearance Together
IOM	International Organization for Migration
KPI	Key Performance Indicator
LTA	Long-Term Agreement
NGOs	Non-Governmental Organizations
QSE	Quality, Social and Environmental Working Group
SKU	Stock Keeping Unit
STOCKHOLM	Stock of Humanitarian Organizations Logistics Mapping
UN	United Nations
UNCTAD	United Nations Trade and Development
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHAS	United Nations Humanitarian Air Service
UNHCR	United Nations High Commissioner for Refugees
UNHRD	United Nations Humanitarian Response Depot
UNICC	United Nations International Computing Centre
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
WASH	Water, Sanitation, and Hygiene
WFP	World Food Programme
WHO	World Health Organization

Executive summary

The procurement, transportation, storage, and distribution of relief supplies account for some of the largest expenses for United Nations (UN) agencies. As humanitarian needs increase and funding becomes more constrained, the performance of humanitarian supply chains has become a strategic concern. However, most agencies continue to manage their supply chains independently, resulting in fragmented systems that constrain inter-agency collaboration and limit opportunities for cost savings, economies of scale, and operational efficiencies.

Over the last 20 years, several UN agencies have launched supply chain collaboration initiatives, ranging from joint air transportation to shared warehousing and information exchange. These initiatives reflect growing recognition that collaboration can deliver measurable efficiency gains. Institutional donors have actively encouraged such models, and this emphasis has intensified in recent years. In 2025, the UN Secretary-General reinforced this approach through the UN80 reform framework, explicitly calling for deeper inter-agency collaboration, including in supply chain functions. While many existing initiatives have delivered tangible benefits, progress toward system-wide interoperability has remained uneven, and the full efficiency potential of collaboration has yet to be realized. The reasons for this gap remain insufficiently understood.

To address this gap, HELP Logistics funded a research project examining why supply chain collaboration advances in some areas and faces barriers in others, and how interoperability across UN agencies could be expanded in practice. The project seeks to identify key drivers and barriers to collaboration, map existing shared services and interoperability mechanisms, and assess which supply chain enablers and functions offer the greatest potential for efficiency gains. Rather than proposing new structures, the analysis focuses on how existing mechanisms could be strengthened, extended, or better aligned.

The research was supported by an advisory board of senior supply chain practitioners and academics, who helped define the study's scope and ensure its relevance for practice. The analysis combined a desk review of ten major UN supply chain collaboration

initiatives with semi-structured interviews conducted with 36 senior supply chain leaders. Interviewees represented six UN agencies, three shared service organizations, eight international organizations, and three private-sector actors. The interviews were analyzed using qualitative research tools, producing over 2,200 coded text segments across 28 thematic categories.

The findings show that supply chain collaboration is shaped by a combination of enabling and constraining factors rather than by technical limitations alone. Key drivers include trust between organizations, recognition of collaboration benefits, institutional pressure, and sustained senior leadership commitment. Barriers include competition for funding and visibility, limited incentives for collaboration, organizational and operational differences, and resistance to change. Many of these barriers are structural and governance-related, indicating that interoperability challenges cannot be addressed through technology or systems alone.

The analysis further indicates that interoperability potential is concentrated in specific areas of the supply chain. Data and information management, together with processes, were identified as the enablers with the greatest potential impact, as they form the basis for nearly all other forms of collaboration. Among supply chain functions, procurement and transportation emerged as the areas with the highest interoperability potential. These functions account for a significant share of humanitarian supply chain costs and continue to be managed in parallel across agencies.

Based on these findings, the study identifies a set of evidence-based recommendations to strengthen interoperability and collaboration across UN supply chains. These include formalizing in-country collaboration on localization and customs clearance, strengthening supply chain coordination through centralized or lead-agency mechanisms, and expanding joint procurement, particularly for non-specialized items. Taken together, the recommendations point toward a more coordinated and interoperable supply chain ecosystem that builds on existing initiatives rather than creating new institutional structures.



Introduction

The procurement, transportation, storage, and distribution of humanitarian relief supplies represent some of the largest operational expenses for UN agencies. As humanitarian crises become increasingly complex and more frequent, the efficiency and effectiveness of humanitarian supply chains are more important than ever. At the same time, the humanitarian sector has been affected by unprecedented funding cuts, putting most organizations under severe financial pressure. Today, these organizations are expected to do more with fewer resources, a highly challenging task that calls for new and innovative approaches to humanitarian supply chain management.

Strengthening supply chain collaboration offers a promising response to these challenges. Until now, most UN agencies have managed their supply chains largely independently despite serving the same affected populations and operating in similar contexts. This fragmentation limits opportunities for economies of scale, reduces system-wide visibility, and constrains inter-agency collaboration. In recent years, UN agencies and humanitarian organizations have increasingly explored supply chain collaboration models, including shared services and interoperability mechanisms.

Examples include common inventory pre-positioning networks, joint air transport services, shared procurement platforms, and mechanisms that enable agencies to leverage each other's contracts and supplier bases. Institutional donors and UN reform initiatives, most recently under the UN80 reform framework, have further intensified pressure to improve coordination and reduce duplication across humanitarian supply chains. While several of these initiatives have demonstrated tangible benefits, their implementation remains uneven, and the humanitarian system has yet to realize the full potential of supply chain collaboration and interoperability.

Existing research highlights both the promise and difficulty of collaboration in humanitarian supply chains (see e.g., Grange et al., 2020). While the literature identifies a range of drivers, barriers, and coordination mechanisms, empirical evidence on how shared services and interoperability function in practice across UN agencies remains limited. In particular, there is a need for a structured overview of existing initiatives, a clearer understanding of the conditions under which they generate value, and an assessment of where further collaboration could yield the greatest efficiency gains.

In this context, this study examines shared supply chain services and supply chain interoperability among UN agencies. The research pursues two complementary objectives. First, it seeks to systematically map and analyze existing shared services and interoperability mechanisms across the UN system, addressing the following research questions:

- What shared services and interoperability mechanisms already exist across UN agencies?
- How do these shared services and interoperability mechanisms benefit UN agencies and their beneficiaries?
- What are the drivers and barriers to implementing shared services and interoperability across UN agencies?
- How can existing mechanisms be adapted to better support collaboration and interoperability?

Second, the study explores opportunities for strengthening and expanding collaboration by identifying areas where new or enhanced shared services and interoperability mechanisms could deliver the greatest value. In this context, it addresses the following questions:

- For which supply chain enablers and functions do shared services and interoperability have the largest potential efficiency gains?
- What are the benefits of shared services and interoperability for these enablers and functions?

To answer these questions, this study combines desk research of existing initiatives with in-depth qualitative interviews with senior humanitarian supply chain practitioners across UN agencies, shared service organizations, donors, and private-sector actors. The study is supported by an advisory board composed of academics and practitioners from the humanitarian sector who provide strategic guidance on the research scope and design. This engagement ensures that the research remains methodologically robust and aligned with operational realities. By grounding the analysis in both existing literature and practitioner perspectives, the study aims to provide actionable insights for policymakers, donors, and practitioners seeking to strengthen supply chain collaboration, improve efficiency, and enhance the collective performance of humanitarian supply chains.

Ultimately, this report contributes to ongoing debates on humanitarian reform by offering a structured assessment of current collaboration models and formulating a set of evidence-based recommendations for advancing supply chain interoperability across the UN system.



1: Theoretical background

Collaboration in humanitarian supply chains is challenging due to the nature of hastily formed relief networks (Schulz and Blecken, 2010, Tatham and Kovács, 2010). To address these challenges, coordination across humanitarian organizations has been formalized through inter-organizational initiatives, most notably the Inter-Agency Standing Committee (IASC) and the implementation of the cluster approach. The Logistics Cluster, for example, plays a network orchestration role by coordinating logistics activities among multiple actors (Grange et al., 2020). Besides its operational coordination tasks during disasters, the Logistics Cluster also supports knowledge exchange and informal collaboration initiatives between humanitarian organizations.

Beyond orchestration, network choreography represents a more advanced form of supply chain collaboration. This approach relies on decentralized, peer-to-peer coordination rather than a central coordinating body, with individual organizations autonomously aligning their actions and collaborating horizontally across processes. Grange et al. (2020) argue that both network orchestration and network choreography depend on trust-based relationships and robust governance mechanisms within the supply chain network. The limited presence of these conditions may help explain why such collaborative models remain difficult to

implement at scale within the humanitarian sector.

Literature has identified several drivers of supply chain collaboration in the humanitarian sector. These include the measurable benefits organizations can derive from collaboration (Adsanver et al., 2024), resource complementarity (Moshtari, 2016), relationship management capabilities (Moshtari, 2016), and compatible information systems that support data visibility and sharing (Adsanver et al., 2024, Comes et al., 2020). Mutual trust and legitimacy have also been highlighted as critical enablers (Ruesch et al., 2022, Shaheen et al., 2024, Moshtari, 2016), along with recognized credentials and past accomplishments (Shaheen et al., 2024). In addition, respected umbrella organizations such as the IASC play an important role in facilitating collaboration (Adsanver et al., 2024).

Research has identified a number of barriers to supply chain collaboration in the humanitarian sector. These include competition for funding and scarce resources (Adsanver et al., 2024), competition for donor visibility and media attention (Eftekhar et al., 2017), and the costs and time required to establish collaboration (Maghsoudi et al., 2018). Additional barriers relate to funding constraints and donor policies (Shaheen and Azadegan, 2020), a strong emphasis on fundraising activities (Eftekhar

et al., 2017), and volatile or fragmented information flows (Comes et al., 2020), as well as the absence of reliable coordination structures (Comes et al., 2020). A lack of incentives for coordination has also been highlighted as a key constraint (Corbett et al., 2022). Furthermore, the use of coercive power by partner organizations can undermine collaboration (Shaheen et al., 2024), as well as the absence of a strong coordinating voice within the humanitarian sector (Corbett et al., 2022).

Existing research also identifies a range of mechanisms through which supply chain collaboration can be operationalized in the humanitarian sector. These include common inventory pre-positioning (Toyasaki et al., 2017, Kasap-Şimşek et al., 2024, Acimovic and Goentzel, 2016), information sharing related to needs assessments (Maghsoudi et al., 2018), and the standardization of relief supplies (Jahre and Fabbe-Costes, 2015, Kovács and Falagara Sigala, 2021). Other collaboration mechanisms highlighted in the literature include the establishment of common framework agreements (McLachlin and Larson, 2011), the harmonization of information flows across organizations (Maghsoudi et al., 2018), and the centralization of funding policies and allocation decisions to reduce duplication (Eftekhari et al., 2017).

Several avenues for further research have been identified in the literature. These include studying common inventory management practices, particularly inventory pre-positioning mechanisms (Adsanver et al., 2024, Kasap-Şimşek et al., 2024), as well as shared transportation arrangements (Adsanver et al., 2024). Additional research is needed on the underlying drivers of supply chain collaboration (Adsanver et al., 2024, Nagurney et al., 2019). Shaheen and Azadegan (2020) note that much of the existing research focuses on collaboration within single disaster contexts and call for more studies examining inter-organizational collaboration across multiple countries and disaster settings. Improving coordination between global humanitarian organizations and local Non-Governmental Organizations (NGOs) is another important direction for future research (Corbett et al., 2022). Finally, Jahre and Jensen (2021) highlight the need for further research on collaboration during the disaster preparedness phase.



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2: Methodology

This research was conducted in two phases: (1) desk research on existing shared supply chain services and interoperability mechanisms, and (2) semi-structured interviews with 36 practitioners. The study was supported by an advisory board comprising six practitioners and three academics.

2.1. Scoping through the advisory board

The advisory board was established to refine the scope of the study and ensure its relevance for research and practice. Board members met at the beginning of the project after reviewing the research proposal. They were invited to provide input on the proposed research objectives and research questions and to help refine the overall scope of the study. This consultation took place during a 1.5-hour virtual meeting, followed by two additional follow-up meetings with selected practitioners from the advisory board.

The insights gathered through this process were used to: (1) refine the research questions and overall scope of the study; (2) define the shared services and interoperability mechanisms to be examined during the desk research phase; and (3) identify the supply chain enablers and functions with the highest interoperability potential to be assessed during the interview phase. The composition of the advisory board is presented in Table 1.

Table 1: Membership of the advisory board

Name	Function	Organization
Jakob Kern	Former Director of Global Supply Chain	Ex-WFP
Richard Kneller	Coordinator Strategic Supply Chain	DG ECHO
Ruben Naval	Head of Global Supply	ICRC
Benjamin Safari	Head of Supply Chain Management Services	UNHCR
Luk Van Wassenhove	Professor	INSEAD
Jonas Stumpf	Regional Director, Europe	HELP Logistics
Bruno Vandemeulebroecke	Regional Director, West Africa	HELP Logistics
Judith Binder	Scientific Collaborator	Bern University of Applied Sciences
Nathan Kunz	Professor, Principal Researcher	Bern University of Applied Sciences

2.2. Desk research

The objective of the desk research was to analyze existing supply chain collaboration initiatives within the UN supply chain landscape. The identification of initiatives was supported by the advisory board, and resulted in the selection of seven shared services and three interoperability mechanisms (see full list in Table 3).

For each initiative, a research associate collected and synthesized information from both academic and institutional publications and prepared a structured summary covering the initiative’s purpose, benefits, challenges, and key lessons learned. These summaries are presented in Appendix and formed the basis for the analysis of existing supply chain collaboration initiatives presented in Section 3.2.

2.3. Interviews

The second phase of the research consisted of semi-structured interviews with humanitarian supply chain practitioners. The study aimed to capture insights from a diverse set of actors involved in humanitarian supply chain collaboration. While the primary focus was on UN agencies responding to humanitarian emergencies, non-UN actors were also included to ensure a broader range of perspectives on supply chain interoperability. Table 2 presents the types and names of organizations represented in the interviews. Among the six UN agencies interviewed, three are large agencies (UNHCR, UNICEF, WFP), while three are smaller agencies with more limited operational footprints (FAO, IOM, UNFPA). The selected agencies also reflect differing perspectives on recent UN80 supply chain reforms. To encourage open and candid discussion,

respondents were guaranteed anonymity, and no individual statements are attributed to specific organizations or individuals.

All interviews were conducted virtually via Microsoft Teams using a semi-structured interview protocol that reflected the research questions and scope defined by the advisory board. The interview guide was reviewed, refined and validated by an external senior academic. Interviews lasted an average of 38 minutes and were all conducted by the researcher. Most interviews involved a single expert; however, two interviews included two experts, and one interview involved three experts. In total, 31 interviews were conducted, representing approximately 20 hours of recorded material.

The interviews were transcribed, resulting in 482 pages of transcripts, which were analyzed using the qualitative data analysis software MAXQDA. Data analysis followed a hybrid deductive-inductive approach. A deductive coding framework was first developed based on the research questions, and this was complemented by inductive coding to capture additional themes that emerged repeatedly from the data. In total, 28 codes were identified and applied to 2,235 segments of text, with some segments assigned multiple codes. Coded segments were then exported and further analyzed by grouping them into thematic categories that informed the structure of the results presented in this report.

For example, the code “Supply Chain Collaboration Barriers” was applied to 277 text segments. These segments were exported to Excel and analyzed to identify the main themes emerging from the data. They were subsequently classified into 13 thematic categories, which form the basis of the analysis presented in Section 3.1.2.

Table 2: Organizations interviewed for this research

Type of stakeholder	Organizations	Number of experts interviewed
UN agencies	FAO, IOM, UNFPA, UNHCR, UNICEF, WFP	20
UN shared services & interoperability mechanisms	IOM Common Pipeline, Logistics Cluster, QSE Group	4
Other relevant actors	Company 1,* Company 2,* DG ECHO, Dubai Humanitarian, ESUPS, Gates Foundation, Global Fund, Hulo, ICRC, Kühne + Nagel, World Economic Forum	12

* Small companies which cannot be named without divulging the interviewee name

2.4. Validation

2.4.1. Practitioner seminar

The findings of this research were presented at a seminar with 14 practitioners¹ in December 2025. The researcher actively encouraged participation and open feedback on the presented results. During the three-hour discussion, a research associate systematically collected feedback, which resulted in 22 additions or refinements to the draft report.

Following the seminar, participants were invited to provide additional feedback on the presentation material and to complete an individual Miro board² exercise. This tool enabled participants to rank the proposed recommendations according to their perceived level of priority. Participants were guaranteed anonymity and were asked to express their personal views rather than official organizational positions. They were given one week to complete the exercises and submit their feedback. Eight participants responded, and their input was consolidated and used to inform the prioritization of recommendations (see Section 5). In total, 38 comments collected during this feedback round were also integrated into the revised draft of the report.

2.4.2. Research seminar

The results were also presented during a research seminar to an academic audience composed of professors, postdoctoral researchers, and doctoral students specializing in humanitarian logistics research. This audience provided feedback on the proposed recommendations, validating the overall direction of the findings while suggesting a few refinements. First, they noted that advisory board members and most interviewees hold headquarters-based roles, which may introduce bias on certain themes such as localization that are more relevant for country office staff. They also highlighted potential tradeoffs between product standardization and localization that require careful consideration, confirming an input also received from practitioners. In addition, participants pointed to existing shared services that could inform the implementation of the recommendations, including the UN Office for Project Services (UNOPS) Web Buy Plus mechanism supporting joint procurement, the World Health Organization (WHO) medicine prequalification system as an example of an

effective lead-agency model, and ongoing inter-agency collaboration on sustainability.

Finally, the academic participants emphasized the importance of integrating a diverse range of perspectives among interviewees and advisory board members. They acknowledged the study's effort to include agencies of different sizes and with differing views on recent collaboration initiatives, such as the UN80 reform framework. In total, seven comments from the academic consultation process were incorporated into the revised draft of the report.

2.4.3. Advisory board consultation

The study's findings and the feedback gathered during the practitioner and academic seminars were consolidated into a draft report, which was shared with the members of the advisory board. This consultation was limited to members of the advisory board who are not affiliated with HELP Logistics or the Bern University of Applied Sciences. Board members were invited to review the draft and provide feedback to ensure its relevance, accuracy, and practical applicability.

All invited advisory board members reviewed the draft report and expressed strong appreciation for its contribution to the ongoing discussion on supply chain collaboration in the humanitarian sector. They noted that the analysis reflects widely shared strategic thinking, clearly articulates key priorities for advancing interoperability, and is well aligned with current debates within the UN80 reform framework and the Humanitarian Leadership Group on Supply Chain (HLGSC). Several members emphasized that the analysis clearly identifies the priorities agencies must address to advance interoperability in a meaningful way.

In addition to their overall endorsement, advisory board members identified some factual inaccuracies, areas requiring clarification, and statements that would benefit from more nuanced wording. In total, 66 comments were received, of which 61 were incorporated into the final report. The remaining five suggestions were not implemented either because the original text was deemed to already capture the intent of the feedback or because the researcher chose to avoid overly prescriptive formulations in certain recommendations. In all such cases, the rationale for non-integration was communicated to the respective contributors to ensure transparency in the review process.

1. 8 staff members from UN agencies, 6 from other organizations.

2. Online tool, see miro.com.



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3: Results

3.1. Drivers and barriers of supply chain collaboration

This section presents the drivers and barriers of supply chain collaboration identified through the interviews (see Figure 1 for an overview).

3.1.1. Drivers of supply chain collaboration

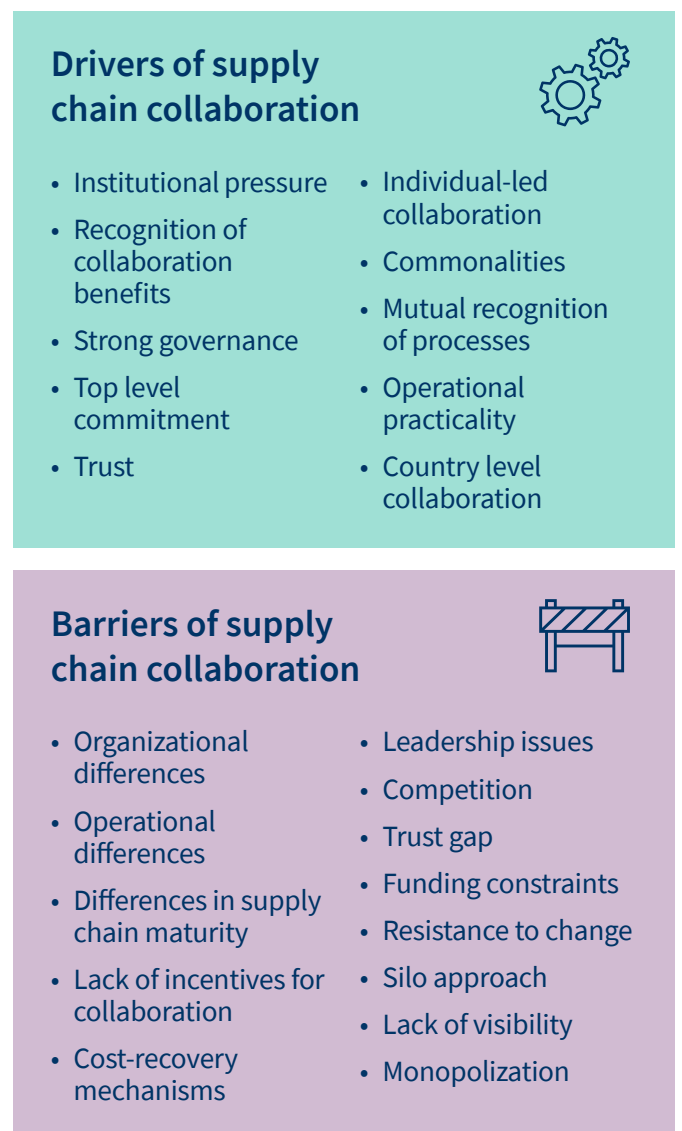
This section presents the ten drivers of supply chain collaboration identified through the interviews, ranked by frequency of mention.

Institutional pressure

One of the strongest drivers of supply chain collaboration is external institutional pressure. Such pressure may come from institutional donors, who increasingly require agencies to collaborate in their supply chain operations. It may also be imposed from the highest levels of the UN system, such as the UN80 reforms currently underway. In other cases, collaboration can be mandated through formal administrative decisions. An example is the directive of the UN High-Level Committee on Management to establish the United Nations Humanitarian Air Service (UNHAS) as the sole air transportation provider for the entire UN system.

These institutional pressures may be motivated by political priorities, funding constraints, or operational necessity when no single agency is able to deliver a service effectively on its own. Decisions taken at the highest level of the UN system tend to benefit from strong legitimacy, particularly when individual agencies lack the capacity to independently provide such services, as in the case of UNHAS.

Figure 1: Drivers and barriers of supply chain collaboration



Recognition of collaboration benefits

The benefits generated by collaboration, such as economies of scale and cost reductions, constitute a major driver of supply chain collaboration. Clear evidence of these advantages provides strong incentives for organizations to work together. Several voluntary collaboration mechanisms are already widely used by agencies, including the contract sharing mechanism commonly known as piggybacking, coordination through the Logistics Cluster, and shared pre-positioning through the UN Humanitarian Response Depot (UNHRD) network. These mechanisms demonstrate agencies' intrinsic motivation to collaborate when tangible operational and financial benefits can be achieved.

Several respondents emphasized the mutual benefits of collaboration, suggesting that the most successful initiatives are those that create a clear win-win situation for all parties involved. For example, joint procurement can reduce costs for one agency while increasing the purchasing power of another. Similarly, when one agency uses the freight forwarding long-term agreement (LTA) of another, both organizations benefit, as does the freight forwarder, who can pool shipments and optimize capacity.

Strong governance

Strong governance of collaboration initiatives is a key driver, which confirms the findings of Grange et al. (2020). Successful initiatives are clearly defined, neutral, and ensure that all participating agencies have equal representation and voice. The credibility, legitimacy, and neutrality of the entity governing the collaboration are of central importance, and its independence from any affiliated agency must be guaranteed.

Effective initiatives build on the existing supply chain capabilities of individual agencies while ensuring that no single organization dominates visibility or influence. The terms and conditions of the collaboration must be discussed and agreed upon at the outset to secure broad buy-in from all participating agencies.

Top level commitment

Supply chain collaboration is most effective when it is supported by a clear strategic vision and strong commitment from agency leadership, which institutionalizes collaborative practices. This is often achieved when senior leadership actively sponsors collaboration initiatives. While country-

level collaboration is essential, a certain degree of centralized decision-making is also necessary to ensure consistent and standardized levels of collaboration across different operational contexts. Such alignment can only be achieved when top-level leadership actively supports and drives the collaboration agenda.

Supply chain collaboration frequently requires a cultural shift within organizations, which can only be effectively implemented through a strong mandate from headquarters. To incentivize such behavior, it is also important to formally integrate collaboration objectives into organizational key performance indicators (KPIs), thereby ensuring that staff across all levels are encouraged to actively pursue and sustain collaborative practices.

Trust

In line with Grange et al. (2020), several respondents identify trust as the most critical driver of supply chain collaboration. When an agency delegates tasks to another organization, it must have confidence in the quality of the work performed, the fairness and reliability of order prioritization, and the transparency and auditability of the associated processes. It must also trust that its own mandate will be respected, that the partner organization will not try to take over visibility, and that services will be provided without overcharging.

Individual-led collaboration

Collaboration is often initiated and driven by individuals who recognize the value of working together beyond potential inter-agency rivalry. Such collaboration may first emerge as ad hoc initiatives between people who know one another, even in the absence of formal incentives or directives from headquarters. It requires individuals with a strong collaborative mindset to initiate and coordinate these efforts, which frequently develop through informal arrangements.

The attitudes of individuals engaged in inter-agency collaboration are therefore critical. Participants must be willing to acknowledge that colleagues from other organizations may contribute with complementary capabilities, and to recognize that collaboration can generate greater collective value. This requires setting aside individual or organizational pride and openly recognizing both the strengths and limitations of each participating agency.



Commonalities

Effective supply chain collaboration among organizations is facilitated by commonalities, including the provision of similar products, comparable operational contexts, common duty stations, and similar organizational size, culture, and funding structures. Collaboration tends to be more effective when organizations are like-minded and operate under comparable conditions.

Mutual recognition of processes

Mutual recognition of other agencies' processes is another important driver of supply chain collaboration. Each organization must have confidence that the processes of partner agencies are rigorous, ethical, and transparent, as this trust is a prerequisite for delegating or sharing procurement and transportation activities. Such recognition is a precondition for the piggybacking mechanism, which allows one agency to use contracts negotiated by another or to utilize and distribute items sourced through another organization's supply chain.

Operational practicality

Effective collaboration initiatives tend to be practical, focused, and readily implementable. Simplicity is essential, and the benefits of collaboration must be concrete and clearly identifiable. It is generally preferable to begin with small-scale initiatives and expand them progressively over time, rather than attempting to establish complex systems that may prove difficult to implement and sustain.

Country level collaboration

Several respondents note that supply chain collaboration is often initiated and driven at the country office level, as staff from different agencies are familiar with one another and respond to the same emergency contexts. For this reason, collaboration feels more natural and operationally relevant at the field level than at distant headquarters, where interactions are more limited. Such decentralized collaboration is particularly effective for localization efforts that require close proximity to local markets and partners, such as contracting local actors.



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3.1.2. Barriers of supply chain collaboration

This section presents 13 barriers of supply chain collaboration identified through the interviews, ranked by frequency of mention.

Organizational differences

Organizational differences are recognized as a major barrier to effective supply chain collaboration. Agencies with distinct mandates tend to adopt different operational approaches, prioritize different types of supplies, and serve different groups of affected populations. For mandate-driven organizations such as UN agencies, accountability to their specific mandates and governing bodies is critical, and collaboration with another organization may at times be perceived as a deviation from those mandates.

Operational differences

As with organizational differences, operational disparities also constrain collaboration across agencies. Differences in information systems, particularly Enterprise Resource Planning (ERP) software, represent a major barrier as they limit data exchange and system interoperability. Although recent efforts have introduced data-sharing

mechanisms through Application Programming Interfaces (APIs), the absence of widely adopted data standards continues to make interoperability complex and resource-intensive.

Collaboration is further hindered by the limited harmonization of operational processes, which have been developed independently by each agency, often without alignment with established commercial logistics standards. Significant variations exist across core functions such as bidding, ordering, transportation, warehousing, distribution, and payment processes. Even traditional logistics processes and definitions are not harmonized. In addition, the diversity of supplies handled by agencies drives different transport modalities, from bulk sea freight for grain to air transport for temperature-sensitive vaccines. Even when agencies procure similar categories of items, such as medicines, they may apply different product standards (e.g., size, origin, or packaging), making stock exchanges and joint procurement particularly challenging. Agencies may also use different definitions of key terms (e.g., what is included in procurement costs) and data collection methods, which make comparisons and interoperability challenging.

Finally, agencies operate under different delivery models, which may be influenced by donors' preferences. Some outsource most programmatic activities to cooperating partners, while others rely predominantly on their own staff. These differences translate into varying interpretations of roles and responsibilities. For example, the scope of a logistician's role may range from managing a warehouse holding tens of millions of dollars' worth of goods to maintaining guesthouse facilities. Such diverse operational models and role definitions further complicate inter-agency collaboration.

Differences in supply chain maturity

Variations in supply chain maturity also limit collaboration, particularly among organizations that differ in scale, procurement volumes, or funding structures. An organization's level of supply chain maturity influences both its willingness and its capacity to engage in collaboration initiatives. Differences in legal recognition, governing bodies, regulatory exemptions, and institutional status across countries further contribute to these maturity gaps, adding complexity that constrains inter-agency collaboration.

Lack of incentives for collaboration

The lack of incentives represents another significant barrier to supply chain collaboration. At an institutional level, many collaborative initiatives are designed on a voluntary basis, allowing agencies that prefer to maintain independent supply chains to opt out. This limits both participation and the potential scale of collaborative efforts.

Respondents noted that collaboration is sometimes merely tolerated rather than actively encouraged. In many organizations, staff are rewarded more for compliance with established procedures than for innovation or collaborative behavior. Until organizational incentive structures are better aligned with collaborative objectives, the adoption of inter-agency cooperation is likely to remain slow. At the organizational level, some departments also exhibit a tendency toward self-preservation, seeking to justify their continued role and resources rather than transferring certain supply chain functions to other agencies. This dynamic works against effective collaboration.

Cost-recovery mechanisms

Current cost-recovery mechanisms in many agencies also restrict collaboration. Such arrangements are

often mandated by agencies' executive boards, which require organizations to generate funding through procurement fees. Several agencies finance their supply chain functions through fees charged to program budgets, creating incentives to retain procurement volumes in-house or to charge fees for the use of LTAs or procurement services provided to other agencies. Such practices undermine the objectives of supply chain collaboration. Respondents further observed that budgetary risk aversion may discourage collaboration, as agencies offering services to others sometimes include high safety margins in their budgets, resulting in uncompetitive pricing. These financial accounting mechanisms create misaligned incentives and defensive reactions among partner agencies.

Leadership issues

Insufficient endorsement and support from senior leadership significantly constrain supply chain collaboration. Establishing collaborative initiatives requires a strong commitment in terms of time, funding, and human resources. The humanitarian sector has faced growing resource constraints in recent years, and launching collaboration initiatives without dedicated personnel, adequate financing, and sustained managerial attention significantly reduces their likelihood of success.

The absence of strong and clearly mandated leadership for collaborative initiatives represents an additional barrier. Effective coordination is critical, as participating agencies often operate under different governance structures and must navigate multiple internal decision-making and approval processes. Weak leadership and insufficient coordination can therefore lead to delays or ultimately result in implementation failures. In addition, collaborative initiatives must be appropriately scoped and focused on practical implementation. Initiatives that are too broadly defined often fail to deliver tangible results, while those that are too large or overly ambitious tend to be difficult to implement effectively.

Competition

Competition among agencies represents a major barrier to supply chain collaboration. In a context of limited resources, agencies often seek to be the first to "plant the flag" in an emergency in order to maximize donor visibility. There is a widespread perception within the sector that the first and most visible responders are more likely to attract donor funding. Donors themselves also face pressure to

demonstrate to their stakeholders that they are supporting highly visible crises, which can further reinforce this dynamic. Competition can also occur across mandates, when agencies prioritize their own target populations over others. Taken together, these dynamics can create incentives that favor donor visibility over the needs of affected populations.

This competitive behavior directly undermines collaboration, as agencies prioritize presence and visibility over coordinated action. This can result in the distribution of branded relief items to signal an agency's presence, thereby reducing opportunities for shared warehousing and joint procurement. Agencies also compete for access to suppliers and logistics capacity, often driving up prices to secure limited resources for their exclusive use. In sudden-onset emergencies, local transportation markets are frequently strained, prompting some agencies to pay premiums to secure all available trucks to meet their own needs. This competition for capacity is inefficient and ultimately increases costs for all actors involved. Finally, agencies may be reluctant to rely on the capacity of others for fear of appearing dependent, which further constrains collaborative approaches.

Trust gap

Trust gaps also significantly constrain supply chain collaboration. Respondents reported mistrust regarding the intentions of partner organizations. Several concerns were raised, including fears that another agency might overstep their mandate, prioritize its own deliveries over shared commitments, or withdraw from the collaboration at a later stage. Such perceptions have led to hesitancy in sharing operational data, thereby limiting effective collaboration across supply chains.

A second dimension of the trust gap relates to perceived operational capabilities. Some respondents expressed limited confidence in the ability of partner organizations to deliver goods on time, as well as concerns that larger, shared pipelines might be slower and less agile than agency-specific arrangements. These doubts further reduce willingness to engage in joint supply chain initiatives.

Funding constraints

Respondents identified three main barriers related to funding constraints. First, agencies noted that duplication of activities can occur when the same donor funds similar assistance through multiple organizations. Institutional donors also seek visibility

and often wish to be recognized as the first to support a specific emergency. This competition for visibility may unintentionally drive parallel responses by agencies and their supply chains, leading to inefficiencies and duplication of effort.

Second, donors' funding requirements can create obstacles to collaboration. Each donor applies its own procurement rules, which can make it difficult or impossible to transfer stock procured under one grant to a project funded by another donor. In addition, donors often expect the funded agency to implement the project directly and may be reluctant to allow subcontracting of services to other agencies. Similarly, donors do not always permit agencies to use allocated funds to support the operations of another organization.

Finally, most humanitarian funding is currently program-based, which makes collaborative efforts difficult to finance. This funding structure often leads to suboptimal use of resources and increased duplication of efforts.

Resistance to change

Resistance to change also emerged as a significant barrier to supply chain collaboration. Transferring certain tasks or supplies to another agency implies giving up control and visibility, an adjustment that some respondents were not ready to make. External observers further pointed to self-preservation dynamics within some organizations, where agencies fight for their continued relevance and existence, sometimes at the expense of potential efficiency gains that could be achieved through deeper collaboration.

More broadly, the humanitarian sector is shaped by a long-standing institutional culture that has traditionally rewarded consensus-building and strict adherence to rules over performance and efficiency. As a result, staff who have spent many years within the system may find it challenging to adopt a results-oriented mindset that prioritizes efficiency gains and inter-agency collaboration. In addition, a strong reliance on existing policies, systems and established practices within organizations can further slow the adoption of new and more collaborative ways of working.

Silo approach

Until recently, many agencies have operated largely in silos, which has limited supply chain collaboration. There is a strong tendency to develop systems from scratch and address challenges independently,

rather than building on existing solutions with other agencies or the private sector. This approach has resulted in duplicated efforts and parallel systems, as well as incompatible data standards and platforms that are unable to communicate with one another.

Some agencies also prefer to rely exclusively on their own logistics assets, fleets, warehouses, or product specifications. This runs counter to the principles of economies of scale, and respondents noted that some suppliers have exploited this lack of coordination by charging premium prices to certain agencies for identical products. There were even reports of collaboration initiatives themselves duplicating efforts, with multiple systems intended to improve interoperability being launched in parallel.

Lack of visibility

The limited visibility of existing initiatives has also restricted opportunities for supply chain collaboration. Beyond well-known shared services and headquarters-level agreements, a range of less visible collaborative initiatives exist at the country

level but are not systematically disseminated across contexts.

The UN Global Marketplace procurement platform has improved the visibility of existing contracts and LTAs for other agencies. However, it remains difficult for individual staff members to easily identify which agreements are available and can be leveraged. Moreover, much of the communication and information exchange related to the piggybacking mechanism is still handled manually, which limits its efficiency and uptake.

Monopolization

Perceptions of monopolization within collaborative initiatives also represent a barrier to effective collaboration. Smaller agencies are often hesitant to join efforts led by one or a few larger organizations. Some respondents emphasized that agencies differ significantly in mandates, operating models, and constraints, and that one-size-fits-all approaches are therefore ineffective. There is a concern that larger agencies may seek to impose their perspectives



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and operating principles on the broader system. These concerns are often reinforced by existing trust gaps between agencies and were noted particularly in discussions related to recent supply chain collaboration initiatives associated with the UN80 reform framework.

3.2. Existing supply chain collaboration initiatives

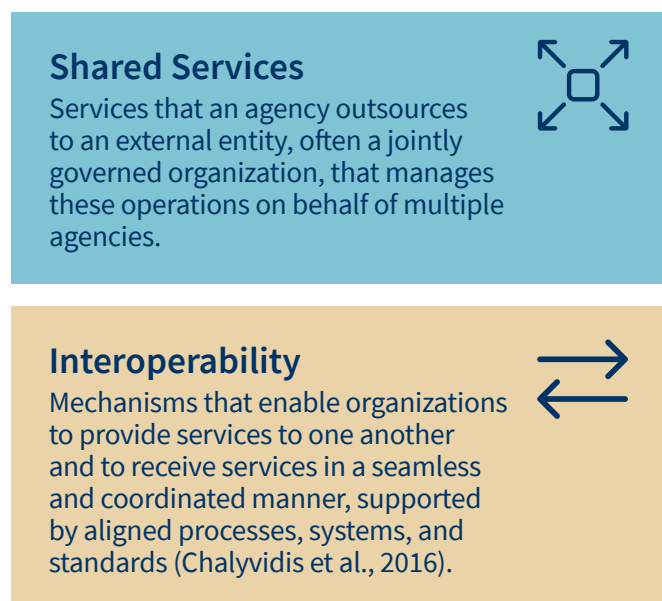
3.2.1. Mapping of supply chain collaboration initiatives

Supply chain collaboration can be pursued through two main approaches: (1) the sharing of supply chain services across agencies and (2) the development of supply chain interoperability mechanisms among agencies. Several such initiatives already exist within the sector, and one of the objectives of this study was to map them in a structured and systematic manner. Based on this mapping, two types of initiatives were identified, as presented in Figure 2.

In addition, a number of coordination mechanisms support strategic exchanges between agencies, including the UN Supply Chain Network (formerly the Procurement Network), and the HLGSC. These bodies make an important contribution to supply chain collaboration but were excluded from this classification, as their role is primarily strategic rather than operational.

This study identified and analyzed seven shared service organizations and three interoperability mechanisms, as presented in Table 3.

Figure 2: Types of supply chain collaboration initiatives



The following pages provide a concise overview of each initiative. A detailed description of their objectives, benefits, challenges, and lessons learned is presented in Appendix.

The **UNHRD** is a global network of inventory pre-positioning hubs established by the World Food Program (WFP) in 2000. It enables more than 100 humanitarian partners, both UN and non-UN, to pre-position and rapidly deploy emergency relief items to crises worldwide. Its services are designed to ensure fast, cost-efficient, and environmentally responsible logistics support during humanitarian emergencies. UNHRD's services can be grouped into three main categories: (i) standard services, such as the storage of emergency relief items, which are provided free of

Table 3: Analyzed supply chain collaboration initiatives

Name of initiative	Type
UN Humanitarian Response Depot (UNHRD)	Shared service
UN Logistics Cluster	Shared service
UN Global Marketplace	Shared service
UN Humanitarian Air Service (UNHAS)	Shared service
UN Fleet	Shared service
UN Mobility	Shared service
UN International Computing Centre (UNICC)	Shared service
International Office of Migration (IOM) Common Pipeline	Interoperability mechanism
Interchangeable Vendor List	Interoperability mechanism
Quality, Social and Environmental (QSE) Working Group	Interoperability mechanism



charge; (ii) specific services delivered on a full cost-recovery basis, including stock maintenance; and (iii) specialized training services.

The **UN Logistics Cluster** is a community of partner organizations established in 2005 under the IASC's cluster approach, with WFP serving as its lead agency. Its core services include coordinating humanitarian logistics operations, facilitating access to common services such as transport and warehousing, and providing critical information management. These services are activated during crises when national logistics capacities are overwhelmed. Beyond emergency response, the Logistics Cluster also plays an active role in preparedness, training, capacity building, and post-crisis learning.

The **UN Global Marketplace** is the official procurement portal of the UN system, designed to connect procurement staff of UN agencies with the global supplier community. It was established in the late 1990s under the Inter-Agency Procurement Working Group, which later evolved into the Supply Chain Network. The UN Global Marketplace was originally created to provide suppliers with a single point of entry to the UN market, serve as a global supplier sourcing platform, and consolidate the supplier rosters of various UN agencies into a single database. Over time, the platform has evolved to enhance transparency and harmonization across UN procurement practices, simplify supplier registration,

expand access for vendors from developing countries, and serve as a common global procurement portal for the UN system.

The **UN Humanitarian Air Service (UNHAS)** is a common air transportation service for humanitarian personnel and light cargo. It was established in 2004 in response to the growing need for a reliable and neutral air transport system in complex operational environments. Operated by the WFP in 21 countries, UNHAS primarily serves areas where surface transportation is unsafe, unreliable, or non-existent. These include regions affected by active conflict or natural disasters, where infrastructure is often damaged or inaccessible. In such contexts, UNHAS frequently represents the only safe and viable means of transport. The service provides scheduled and ad hoc flights, medical and security evacuations, rapid assessments, and support for high-level missions to actors across the humanitarian community.

UN Fleet is a centralized service designed to streamline light vehicle leasing and fleet management across the UN system. It was established in 2022 by UNHCR and WFP, both of which had successfully operated self-sustaining vehicle leasing systems prior to its creation. The primary objective of UN Fleet is to pool vehicle procurement to achieve economies of scale and to reduce administrative costs by offering a unified fleet management model to participating UN agencies. The services provided cover the full

fleet lifecycle, including vehicle procurement, leasing, preparation, and disposal. UN Fleet provides access to a standardized catalogue of vehicles and services and, over time, aims to support operations through additional tools such as vehicle tracking, training materials, and fleet optimization support.

UN Mobility is a passenger mobility solution based on shared transportation services across UN agencies. The service was initiated in 2023 by WFP with the objective of making ride-sharing and inter-agency carpooling the new standard for UN personnel mobility. It offers both ride-sharing and carpooling services, with the overarching goal of optimizing fleet utilization and ultimately reducing fleet sizes in locations where multiple UN agencies operate. The model is currently being expanded to 45 countries, and its operational governance structure is financially sustained through a combination of annual subscription fees and a trip-based cost-recovery model.

The **UN International Computing Centre (UNICC)** provides a broad range of IT solutions and services to participating UN agencies. It was established in 1970 by the UN General Assembly, UN Development Programme (UNDP), and WHO to serve as a common electronic data processing facility for the UN system. UNICC is governed by a management committee comprising one representative from each participating UN agency (usually the Chief Information Officer). Its service portfolio includes cybersecurity, data governance and artificial intelligence, cloud services, network and infrastructure management, client services, and platform services for ERP and Business Intelligence (BI) solutions.

The **IOM Common Pipeline** is an interoperability mechanism that supports joint procurement and pre-positioning of humanitarian relief items for shelter, non-food items, and Water, Sanitation, and Hygiene (WASH) supplies. It was first established in 2015 in Nepal and has since been extended to 13 additional countries. The IOM Common Pipeline's services include the procurement of items, their transportation to strategically selected pre-positioning locations, and their storage for subsequent collection by partner organizations, which are typically responsible for last-mile distribution. These stocks are provided at no cost to its partners and are coordinated with donors in advance. Access to the IOM Common Pipeline is restricted to approved partners, usually based on recommendations from the Logistics Cluster.

The **Interchangeable Vendor List** is an interoperability mechanism through which UN agencies can rely on procurement contracts concluded by other agencies. Although it is primarily enabled through UN Global Marketplace's shared supplier registration system, the mechanism is not limited to procurement conducted on that platform. This mechanism, often referred to as "piggybacking", is a well-established form of UN system interoperability that allows one agency to use another agency's existing LTA or contract, by turning a single agency's contract into a reference point for others. It facilitates interoperability by reducing the need for additional procurement review and tendering processes that agencies would otherwise have to undertake. The mechanism also enables the exchange of vendor information across the UN system, ensuring that all participating agencies have access to the same pool of vetted suppliers.

The **Quality, Social and Environmental (QSE) Working Group** was established in 2010 as a joint initiative of the UN High Commissioner for Refugees (UNHCR) Quality Department and the Red Cross/Red Crescent Emergency Items Catalogue Project. Over time, it expanded to include additional UN and non-UN organizations, evolving into an interoperability mechanism aimed at harmonizing procurement practices and strengthening product standardization across the humanitarian sector. The Group develops common technical product specifications to improve quality management, social compliance, environmental sustainability, and product development within humanitarian supply chains. Its thematic focus includes unified technical specifications, sustainability, local procurement, innovation, and mutually recognized supplier audits. Its activities concentrate on eight core relief items that together account for the largest share of goods procured by humanitarian organizations.

3.2.2. Benefits of existing supply chain collaboration initiatives

This section summarizes the key benefits of existing shared services and interoperability mechanisms, based on the findings of the desk research (see Table 4).

Table 4: Key benefits of analyzed supply chain collaboration initiatives

Name of initiative	Key benefits
UN Humanitarian Response Depot (UNHRD)	<ul style="list-style-type: none"> • Enables pre-positioning and rapid dispatch of essential relief items within 48 hours of an emergency • Generates cost savings through consolidated procurement, shared transport, and free warehousing • Provides training and capacity-building to strengthen local and international response capacity
UN Logistics Cluster	<ul style="list-style-type: none"> • Improves efficiency, coordination, and predictability of humanitarian logistics operations • Facilitates information sharing and alignment among actors to avoid duplication during emergencies • Provides access to shared logistics services, including warehousing, transport, and customs facilitation • Delivers training and capacity-building to improve operational readiness, enhance interoperability and strengthen national response capacity
UN Global Marketplace	<ul style="list-style-type: none"> • Reduces duplication of supplier registration across UN agencies • Enhances procurement transparency through shared supplier data and common vetting mechanisms • Expands access for global suppliers, particularly from developing countries • Supports harmonized vendor registration and evaluation processes
UN Humanitarian Air Service (UNHAS)	<ul style="list-style-type: none"> • Provides access to hard-to-reach and insecure areas for humanitarian personnel and cargo • Ensures safe and reliable transport, including medical and security evacuations • Eliminates the need for agencies to operate separate air fleets through centralized services • Strengthens national aviation capacity through training and safety support
UN Fleet	<ul style="list-style-type: none"> • Improves operational efficiency across participating agencies • Reduces procurement costs through economies of scale achieved via pooled purchasing and LTAs with manufacturers • Lowers lifecycle vehicle costs through standardization and use of newer vehicles • Simplifies vehicle acquisition through a centralized one-stop service
UN Mobility	<ul style="list-style-type: none"> • Reduces fleet sizes and operating costs through shared mobility services • Improves fuel efficiency and reduces CO₂ emissions through fleet optimization • Enables centralized data collection, and performance analysis • Creates opportunities for UN staff to connect and build stronger working relationships across agencies
UN International Computing Centre (UNICC)	<ul style="list-style-type: none"> • Provides secure cloud, Artificial Intelligence (AI), and digital solutions for UN agencies • Supports ERP and BI system implementation • Enhances cybersecurity through the UN's common Public Key Infrastructure • Offers a shared digital environment to support inter-agency collaboration
International Office of Migration (IOM) Common Pipeline	<ul style="list-style-type: none"> • Reduces costs through bulk procurement • Improves response times through centralized logistics • Ensures consistency in quality through standardization of relief items • Facilitates collaboration among partners and reduces duplication of efforts
Interchangeable Vendor List	<ul style="list-style-type: none"> • Reduces procurement costs by enabling access to the best negotiated prices • Creates a shared pool of vetted vendor information, supporting transparency and competition • Shortens vendor onboarding timelines • Enables rapid supplier mobilization through existing LTAs
Quality, Social and Environmental (QSE) Working Group	<ul style="list-style-type: none"> • Improves supply chain efficiency through standardized product specifications • Strengthens purchasing power and reduces unit costs through coordinated procurement • Formalizes quality, social compliance, and environmental sustainability criteria in humanitarian supply chains • Provides a platform for sharing innovations and best practices across agencies

3.2.3. How can existing initiatives better support supply chain collaboration?

UN Humanitarian Response Depot (UNHRD)

Several respondents proposed opportunities to broaden the scope of UNHRD's services. This common inventory pre-positioning network is highly valued by participating agencies, as it enables rapid and cost-effective response during emergencies. Some respondents suggested extending this service beyond preparedness and early response, transforming it into a shared warehousing network that could also support more stable operational contexts, including long-term response and recovery phases. In this scenario, UNHRD could facilitate the replenishment of regular humanitarian operations by supplying unbranded items that agencies could source directly from the nearest UNHRD hub. Additional suggestions included expanding the geographical footprint of the UNHRD network, for instance by establishing new regional hubs in areas such as Central Africa. Respondents also noted potential value in UNHRD managing joint in-country warehouses, thereby reducing the duplication resulting from maintaining separate agency-specific facilities. Such extensions would require corresponding adjustments to UNHRD's mandate and governance arrangements to ensure acceptance and buy-in from participating agencies.

UN Global Marketplace

The UN Global Marketplace was also identified as a shared service with significant potential for expansion. Several respondents suggested that it could evolve into a more comprehensive centralized procurement platform, moving beyond its current functions of supplier registration and posting business opportunities. Such an expansion would strengthen the current contract piggybacking mechanism by enabling agencies to access detailed information on each other's procurement contracts. At the same time, respondents emphasized that any expansion would need to carefully assess the UN Global Marketplace's financial model and clearly demonstrate its value added, particularly in light of potential overlaps with other existing procurement services, including those provided by UNOPS. Another proposed enhancement was to open the platform to NGOs, thereby broadening its reach and usefulness. However, this option is constrained by the legal and fiscal exemptions granted to UN agencies under their multilateral status, which cannot be extended to NGOs. Respondents also noted that the UN Global

Marketplace could play a stronger role in advancing localization efforts by increasing the visibility and accessibility of UN procurement opportunities for local suppliers.

Logistics Cluster

Several respondents highlighted opportunities to expand the role of the Logistics Cluster. Many expressed strong appreciation for the Logistic Cluster's current work and noted that its involvement in coordinating humanitarian supply chains could be strengthened and extended beyond declared disasters. However, the organization's current mandate is limited to emergency contexts, and it operates in a country only when formally activated for a specific disaster. Some respondents suggested that the Logistics Cluster could extend its coordination and information-sharing functions, for instance by collecting and disseminating information on regional and national customs clearance procedures and facilitating the exchange of such information among agencies operating in-country. Respondents also noted that the Cluster could leverage its neutrality and legitimacy to coordinate inter-agency data exchange, including through the development of shared data-sharing standards and practices.

Asset management

Asset management represents another promising domain for inter-agency collaboration. Respondents suggested extending centralized procurement and management models, such as the UN Fleet approach, to additional assets, including generators, trucks, or real estate. This would allow country offices to rent assets centrally, reducing both capital investment requirements and the high costs of local rentals.

3.3. New supply chain collaboration initiatives

In the initial phase of the research, the advisory board identified potential supply chain enablers and functions that could most effectively support interoperability across UN agencies. This assessment was guided by three criteria: their degree of commonality across agencies, their potential to generate efficiency gains, and their relative ease of implementation.

Through a structured consensus-building process, including an advisory board meeting and several follow-up discussions, three supply chain enablers and three supply chain functions were selected for

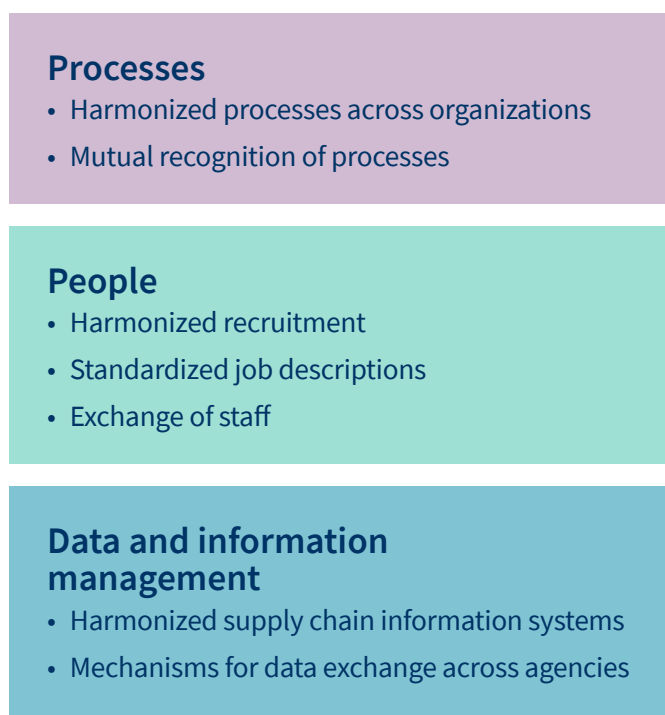
further analysis. These were identified as areas where interoperability could deliver meaningful efficiency gains while remaining operationally feasible. The analysis focused on enablers and functions that are found across agencies, while more specialized or mandate-specific activities were left to individual organizations.

These areas can be considered “low-hanging fruits” for advancing interoperability, offering practical insights for strengthening collaborations across UN supply chains. To validate this selection, interviewees were asked to assess and, where possible, rank the select enablers and functions based on the benefits they believed could be achieved through enhanced interoperability. The following subsections present these enablers and functions, and summarize the results of the interviews.

3.3.1. Supply chain enablers for interoperability

Supply chain enablers are defined as the tools, resources, and capabilities that support a functional and high-performing supply chain. Based on this definition, the advisory board identified three key enablers for which interoperability was expected to generate the greatest benefits across UN supply chains (see Figure 3).

Figure 3: Identified supply chain enablers with strongest interoperability potential (with few illustrative examples)



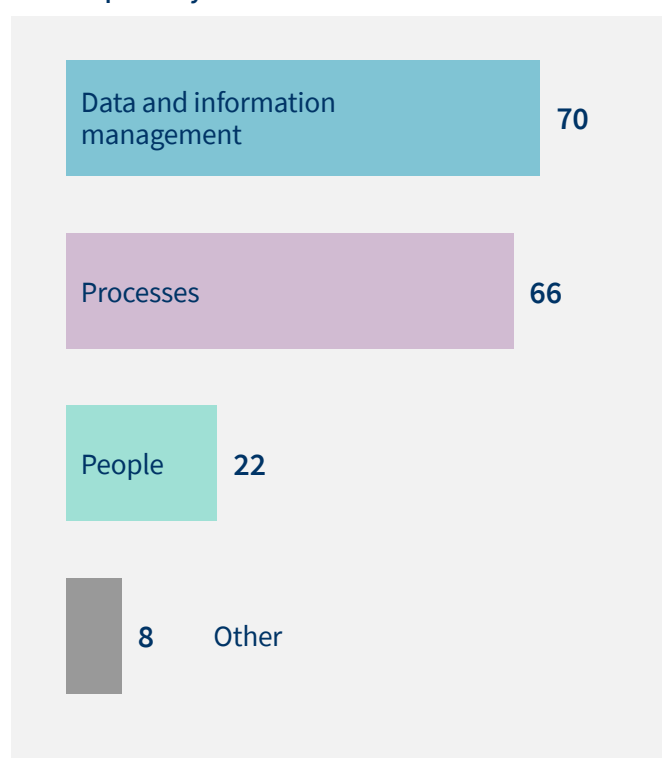
During the interviews, respondents were asked two guiding questions: “For which of these supply chain enablers is interoperability most beneficial?” and

“How would interoperability work for this enabler?” Most respondents referred to more than one enabler and discussed both the potential benefits and the practical challenges associated with implementing interoperability in these areas. They were also invited to identify additional enablers beyond the initial selection where interoperability could generate efficiency gains.

Respondents were not asked to provide strict rankings or numerical scores. Instead, the researcher conducted a qualitative analysis of the interview data and applied a structured scoring approach to reflect the relative importance placed on each enabler. For each interview, a total of six points were manually allocated across the enablers mentioned. The resulting allocation varied, with the researcher assigning all six points to a single enabler for some respondents, while distributing points evenly across three enablers for others. Additional enablers identified by respondents were grouped under the category “Other”.

Figure 4 presents the aggregated results of this analysis. *Data and information management* emerges as the supply chain enabler for which interoperability is expected to generate the greatest benefits. At the same time, this enabler would likely require the highest implementation effort and investment and could face significant institutional resistance.

Figure 4: Relative importance of supply chain enablers for interoperability



Processes were identified as the enabler with the second-highest potential benefits. While respondents consistently highlighted the importance of human resources in humanitarian supply chains, interoperability at the level of *People* was generally not perceived as offering comparable efficiency gains. The total number of points assigned to each enabler are shown in Figure 4.

3.3.2. Supply chain functions for interoperability

A similar process was used to identify the supply chain functions for which interoperability is expected to generate the greatest benefits. Supply chain functions are defined as the core operational processes involved in managing supply chains, including planning, scheduling, procurement, transportation, warehousing, distribution, order fulfillment, packaging, and related activities (CSCMP, 2022). Based on the same selection criteria applied to supply chain enablers, the advisory board identified three key functions with strong potential for interoperability-related efficiency gains (see Figure 5).

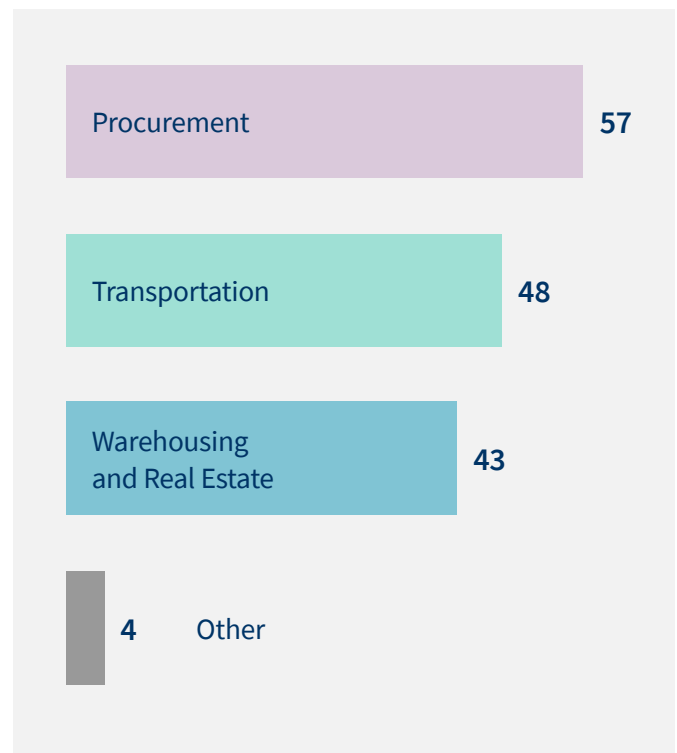
Consistent with the qualitative, semi-structured interview approach, respondents were not asked to rank functions or assign numerical scores. Instead, the researcher conducted a qualitative analysis of the interview data and manually allocated points based on the emphasis placed on each function in the responses. For each respondent, a total of six points were distributed across the functions mentioned. The allocation varied, ranging from all six points being assigned to a single function to an even distribution of two points across three functions. The category “Other” captures additional functions identified by respondents.

Figure 6 presents the results of this analysis. *Procurement* emerges as the supply chain function for which interoperability is expected to deliver the greatest benefits, followed closely by *Transportation*, and *Warehousing and real estate*. Overall, the findings suggest that interoperability has the potential to generate meaningful efficiency gains across all three functions. The total number of points assigned to each function are shown in Figure 6.

Figure 5: Identified supply chain functions with strongest interoperability potential (with few illustrative examples)



Figure 6: Relative importance of supply chain functions for interoperability





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Chapter 4: Recommendations

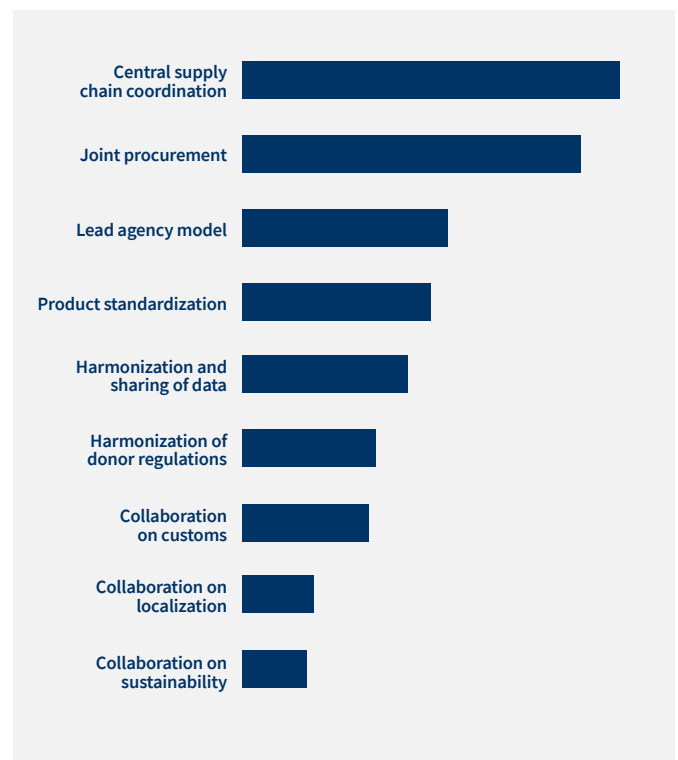
This section presents a set of nine recommendations aimed at strengthening supply chain collaboration and interoperability across UN agencies, building on the supply chain enablers and functions identified in the previous section. Many of these recommendations are also applicable to humanitarian organizations beyond the UN system. These recommendations are derived from collaboration opportunities identified through the interview process and are presented in order of frequency, from the most frequently mentioned to less frequently cited ideas (see overview in Figure 7). For each recommendation, the number of text segments in which it was mentioned is indicated, noting that a single respondent may have referred to the same idea multiple times.

4.1. Central supply chain coordination entity (48 mentions)

Establishing a central unit responsible for supply chain coordination and visibility is one of the most frequently mentioned opportunities to enhance interoperability. This unit would function as an orchestrator for the supply chain (Grange et al., 2020). This suggestion is based on the observation that individual agencies tend to optimize their own supply chains with little consideration for overall system performance. This fragmentation leads to competition among agencies, duplication of efforts, and competition for access to scarce resources and assets.

Respondents suggested that this role should be assigned to a neutral, non-profit entity mandated to optimize the UN supply chain as a whole. While operationally independent, the entity should be overseen by a board of directors with broad representation from participating agencies, similar to the governance model of UNICC. Its mandate should prioritize the needs of affected populations rather than the interests of any single agency. Donors would play

Figure 7: Overview of recommendations with their number of mentions



an important role in the supply chain coordination entity and participate in its supervision. The entity could either take the form of a donor-led independent body with representatives from the donor community or a UN entity mandated by the Secretary-General.

One of the key responsibilities of a supply chain coordination entity would be to set priorities for activities and goods delivered, based on the evolving situation in a given country. Currently, this role is often assumed by the country director of the largest UN program in a country (the Resident Coordinator), which may lead to the priorities and mandates of larger agencies being prioritized. In some cases, shared services also set priorities independently. This may be problematic, because each agency tends to consider its own mandate as the most important, creating a need for an external entity to arbitrate between competing needs. Such priority-setting should therefore be guided by the central coordination entity to ensure a balanced, needs-based, and system-wide approach. Similar to the way the Logistics Cluster establishes a humanitarian logistics coordination mechanism when activated, the central supply chain coordination entity would prioritize cargo flows according to agreed criteria (e.g., health first, shelter second, food third). Given that demand almost always exceeds supply in emergency contexts, such prioritization mechanisms are essential. Without them, the largest or best-funded organizations risk monopolizing available resources and assets (e.g., trucking capacity). Prioritization could be based on well-defined emergency scenarios that specify which activities receive priority under different conditions.

Beyond its prioritization function, the coordination entity would assume several additional

responsibilities. It should enhance supply chain visibility by proposing harmonized data standards, developing a shared dashboard with relevant indicators, and disseminating assessments of supply chain infrastructure conditions, current delays, port maturity levels, access constraints, and related factors to all agencies. Improved supply chain visibility would support better decision-making at the agency level by enabling risk mitigation, bottleneck identification, and early detection of disruptions. The coordination entity could also manage shared supplier data, allowing agencies to access a common database and gain visibility into suppliers and contractual conditions used by other organizations.

Additional responsibilities would include determining which digital tools and interoperability mechanisms should be pursued, ensuring that resources are allocated to priority projects, and avoiding duplication of efforts. The coordination entity could coordinate and implement supply chain digitalization initiatives and serve as an innovation hub for the sector. It could also play a role in assigning funding priorities based on the most pressing operational needs.

Finally, the entity would serve as a coordination mechanism for the entire supply chain from forecasting to end-of-use. It could support joint forecasting by pooling demand across agencies to ensure future needs are satisfied. It could also coordinate procurement from key manufacturers to secure favorable pricing and ensure that production capacity is used efficiently. Furthermore, it could replace the multitude of existing contracts, described by one respondent as a “spaghetti junction” of agencies engaging with multiple service providers, with unified LTAs. The coordination entity could



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launch and manage tenders for such LTAs and make them available to individual agencies. Finally, it could also be involved in the coordination of end-of-use activities, such as asset disposal or waste management.

The recommendation to establish a central supply chain coordination entity also involves potential risks that must be carefully managed. First, a central coordination mechanism may place too much emphasis on the priorities of larger agencies. It is therefore essential to ensure that the needs and perspectives of smaller organizations are adequately represented, including through appropriate representation in the governance structures of the coordination entity. Second, a central coordination mechanism may place excessive emphasis on efficiency gains at the global level, potentially overlooking other core humanitarian objectives such as localization and sustainability. To mitigate this risk, the coordination entity must actively promote these priorities and allow sufficient flexibility for local adaptation and decentralized decision-making.

4.2. From piggybacking to joint procurement (43 mentions)

Today, a number of suppliers hold LTAs with multiple UN agencies for the same or very similar products and services. In many cases, however, these contracts continue to be managed separately by each agency. The UN Global Marketplace has facilitated some degree of collaboration by enabling agencies to publish tender opportunities on a single platform and to share their LTAs. UNOPS offers an e-commerce platform called UN Web Buy Plus³ which allows other agencies to tap into existing LTAs and procure their goods through UNOPS. Mutual recognition of procurement processes has been another important step, enabling mechanisms such as piggybacking, which allows one agency to use a contract negotiated by another and benefit from the same terms. This approach has produced significant advantages, particularly for smaller agencies that can leverage the purchasing power and negotiated conditions of larger organizations. It has also reduced the time, cost, and administrative burden associated with tendering processes. However, several limitations reduce the potential benefits achieved through piggybacking. First, piggybacking does not allow agencies to jointly

engage with suppliers or pool their procurement volumes. Second, the rules and conditions governing piggybacking are not applied consistently across agencies. While some agencies allow access to LTAs at no cost, others impose cost-recovery fees or require purchases to be made through the contract-owning agency, which can reduce incentives for collaboration. Third, information on existing contracts and LTAs is not always fully transparent or easily accessible to other agencies, which limits the opportunities for piggybacking on these agreements. Finally, even when contracts for a specific item already exist, some agencies may still be required to conduct additional procurement or compliance checks to ensure that the contract they are piggybacking on offers the best value-for-money and complies with internal regulations.

Respondents noted strong potential to extend this mechanism by enabling agencies to engage the market collectively. Because the humanitarian sector represents a relatively small share of most suppliers' business, pooling procurement volumes across agencies could significantly strengthen bargaining power. Rather than one agency issuing a tender, negotiating a contract, and subsequently allowing others to piggyback on it, collaboration could begin at the tendering stage. This would ensure that procured items and services meet the needs of multiple agencies while consolidating demand to secure more favorable contractual conditions. At the same time, respondents cautioned that joint procurement can entail bureaucratic burdens and opportunity costs. In particular, coordinating multiple agencies at the tendering stage may introduce delays, for example when procurement timelines depend on aggregating sufficient volumes across partners. This can reduce responsiveness in time-critical contexts, unless collaboration is structured around aggregated demand forecasts or expected volumes over a defined period rather than single, ad-hoc purchases. Such contracts could take the form of LTAs accessible to all agencies, therefore improving both pricing and predictability. UNICEF's LTA for freight forwarding services illustrates the feasibility and value of such an approach: after jointly defining requirements with several partner agencies, UNICEF launched a tender and established LTAs with multiple third-party logistics providers (3PLs), which are now available to 32 agencies.

3. <https://unwebbuyplus.org/>

Agencies might begin by jointly procuring non-specialized items, such as tarpaulins, tents, blankets, kitchen sets, and IT equipment, or support services, such as local transportation, security, and travel.

This collaborative approach could be further extended beyond procurement to include joint forecasting, replenishment planning, quality management, and warehousing, with “white stock” (i.e., unbranded items) stored in a common warehouse and allocated to agencies based on needs. In addition, joint procurement could be expanded to include institutional donors, allowing them to pool funds and jointly procure life-saving items in a more efficient and coordinated manner.

4.3. Lead agency model for category-based collaboration (26 mentions)

Most agencies have developed expertise in particular categories of items or services as a direct result of their institutional mandates, giving them a comparative advantage in managing those areas. For instance, WFP has developed strong capabilities in food assistance and bulk transportation; UNICEF holds expertise in vaccines and cold chain management; WHO is recognized for its leadership in global health response; and the UN Population Fund (UNFPA) for its specialization in reproductive health commodities and contraception.

Building on these strengths, respondents suggested that agencies could serve as lead entities for the categories in which they are most specialized, for example, health, food, or shelter items, or services such as transportation, warehousing, or cold chain logistics. Within their categories, these lead agencies would be responsible for product specification, vendor identification, supply chain coordination, forecasting, knowledge management, private sector engagement, and the negotiation of long-term agreements. The lead agency would act as a supply chain “orchestrator” within its designated category, offering services and expertise to other agencies while also facilitating knowledge sharing and coordination. Participation by other agencies would remain voluntary, and they could continue procuring independently if preferred. By outsourcing selected supply chain functions to the agency best equipped to manage them, organizations could give more

attention to their own programmatic priorities, where they may be the recognized lead agency. Recent discussions under the UN80 reform framework point in the same direction, with the lead agency model increasingly viewed as a pragmatic and relatively low-barrier step toward stronger collaboration, even though sensitivities around roles and responsibilities remain in some categories.

Donors also play a key role in enabling such a model. They should formally recognize and support designated lead agencies for each category, based on their expertise and institutional mandate, and engage them as primary counterparts when funding projects in these areas. Donors should also ensure that lead agencies are adequately resourced, including through sufficient staff and funds, to effectively fulfill their coordination function. In addition, donors should accept that funded organizations may outsource selected activities to lead agencies where this improves efficiency and overall system performance.

For this model to be widely accepted, it must remain inclusive and avoid creating monopolies. Some respondents mentioned the risk that lead agencies could receive all donor and media attention, potentially reducing the visibility of smaller agencies. This underscores the importance of designing inclusive collaboration mechanisms in which the lead agency assumes a coordination and orchestration role while ensuring that other agencies retain appropriate visibility for their contributions. In parallel, robust governance and accountability mechanisms should be established to ensure that lead agencies remain accountable to donors and continue to drive improvements in performance, efficiency, and innovation within their respective product or service categories.

The designation of lead agencies should be determined through high-level decision-making, for example by the High-Level Committee on Management (HLCM)⁴, ensuring that each organization plays a leadership role in the area where it holds the strongest comparative advantage. Each lead agency should be built on a homogenized structure, with similar roles, responsibilities, and be accountable to the same high-level body. It should also be insulated from short-term swings in donor preference for specific mandates, to ensure that capacity and knowledge can be built and developed

4. <https://unsceb.org/high-level-committee-management-hlcm>



in the long term within a specific agency. Overall, this approach would extend the existing IASC cluster model by granting each lead agency a broader supply chain mandate within its respective category.

4.4. Product standardization (24 mentions)

Product standardization is a key enabler of supply chain interoperability. Using standardized products across agencies enables greater opportunities for joint procurement, shared warehousing, common pre-positioning, stock exchanges during emergencies, the establishment of shared LTAs with vendors, and more consistent pricing across agencies. By procuring identical products, agencies can increase their collective purchasing power and enable vendors to achieve economies of scale. Standardization also requires the use of uniform item descriptions and identification numbers for the same stock keeping unit (SKU), regardless of the vendor or the purchasing agency. A significant implication of product standardization is the absence of branding (i.e., no agency logos displayed on the product), which agencies and donors must accept despite the resulting reduction in visibility to media and aid recipients.

Standardization further extends to the joint definition of product characteristics through collaborative research and development to ensure that items meet the functional, quality, and cost requirements of all agencies. Such product characteristics should be driven by the needs of affected populations, and the process of defining product standards should extend beyond supply chain functions to also include representatives from programmatic functions. Once established, these standards should be shared

freely across the humanitarian community to allow other organizations to benefit from the generated knowledge.

The QSE Working Group is a voluntary network of procurement specialists from multiple agencies that promotes product standardization and has developed shared technical standards for high-volume items. Over the past decade, the group has established standards for eight core products and plans to expand this work to twelve products, which together account for over USD 500 million in annual procurement volume. In addition, the QSE Working Group supports standardized quality control and quality management systems, enabling the mutual recognition of supplier audits across organizations to assess social and environmental compliance. The QSE Working Group could therefore play a stronger role in extending the benefits of product standardization and mutual recognition to a wider range of items and participating organizations. A comparable approach exists in the health sector, where WHO contributes to product standardization through its prequalification mechanism for health products and medicines, enabling other agencies to procure standardized products while relying on WHO's recognized technical and regulatory expertise.

Despite its potential efficiency gains, product standardization also has several limitations. It can conflict with localization objectives, as local suppliers are not always able to meet global standards. Standardization may also limit the ability to respond to local preferences of affected populations. This is particularly problematic for items already widely available and commonly used in countries, such as medicines sold in specific packaging sizes. A standardized product may rely on different packaging

formats, creating confusion for healthcare workers and patients. Standardization can also inhibit product innovation, as revising global standards often requires significant time and effort. Finally, some donors express preferences regarding certain product specifications, such as country of origin or sustainability requirements, which further constrains the scope for product standardization.

4.5. Harmonization and sharing of data (21 mentions)

Exchanging data across agencies is fundamental for supply chain interoperability. Sharing information on suppliers and procured items enables agencies to compare costs, an important foundation for identifying efficiencies and reducing procurement costs. Increased data visibility also strengthens demand forecasting for future crises, such as droughts or food insecurity, and can support automatic replenishment based on stock levels held across different agency warehouses. Access to shared inventory data facilitates stock-loaning and borrowing mechanisms, allowing an agency facing a stockout to draw on another's surplus.

Data exchange could build on existing tools and mechanisms, including UNOPS' Annual Statistical Report,⁵ ESUPS' STOCK of Humanitarian Organizations Logistics Mapping (STOCKHOLM)⁶ system, the NetHope Frontline Humanitarian Logistics Data Standard,⁷ and UNCTAD's Automated System for Customs Data (ASYCUDA).⁸ Enhanced visibility into the quantities of items ordered, in transit, or stored by other agencies would offer substantial benefits and generate additional opportunities for collaboration. Data exchange between systems also supports automatic replenishment from suppliers, a common practice in commercial supply chains that humanitarian agencies could adopt. Existing data-sharing mechanisms should therefore be further enhanced and automated.

Effective data sharing requires participating organizations to adopt common data standards, ideally defined by a neutral coordinating entity (see Section 4.1 on supply chain coordination). Data harmonization is closely linked to product standardization, as shared product identifiers must refer to the same SKU across

agencies (see Section 4.4 on product standardization). Some respondents highlighted the need for a common ERP system across agencies to achieve this level of alignment. Others noted that high switching costs and organizational resistance make a single ERP system unrealistic, and instead recommended the use of APIs to automate data exchange across existing systems. Such automated interoperability works best when a central entity defines standards, protocols, and data management policies, and ensures strong buy-in and accountability from all participating agencies. This aligns with outcomes from recent discussions on digitalization within the HLGSC.

Respondents also emphasized that many organizations remain hesitant to share internal data due to concerns about confidentiality and potential loss of control over sensitive information. This challenge can be mitigated through clear data standards, appropriate anonymization measures, and a narrowly defined data scope limited to what is strictly necessary for supply chain collaboration. Respondents further noted that data and information can be perceived as sources of institutional power, which may make agencies reluctant to share them. Developing a trust-based culture that enables safe, transparent, and purpose-driven data exchange is therefore critical. One respondent further argued that organizations funded with public resources have an ethical responsibility to share data in ways that ultimately benefit the affected populations they serve.

4.6. Harmonization of donor procurement regulations (17 mentions)

Currently, organizations operating with funding from multiple donors must comply with different supplier vetting and approval processes. This creates significant challenges during program design and implementation, as agencies may be required to procure from multiple sources that are not necessarily approved by all donors. Some donors, for example, maintain their own lists of pre-qualified suppliers from which agencies may procure directly without tendering; however, these lists are not harmonized

5. <https://www.ungm.org/Shared/KnowledgeCenter/Pages/ASR>

6. <https://esups.org/our-work/stockholm-platform/>

7. <https://nethope.org/programs/digital-inclusion/frontline-humanitarian-logistics/>

8. <https://unctad.org/topic/transport-and-trade-logistics/customs-automation-ASYCUDA>

across donors. This lack of alignment increases procurement complexity and reduces operational flexibility. It also limits the ability to reallocate leftover stocks between programs, as products purchased under one donor's funding often cannot be used for activities funded by another donor due to conflicting procurement regulations. These differing requirements often stem from donors' national laws and regulations, which limit the potential for harmonizing procurement rules.

Donors should harmonize their procurement regulations so that supplier approval by one donor would be automatically recognized by others, based on a shared procurement framework agreed across donors and agencies. Given that all donors and humanitarian organizations share the same imperatives of accountability, transparency, and the prevention of fraud and corruption, it should be feasible to establish a common humanitarian procurement regulation that reflects these shared standards. As part of these common regulations, donors should refrain from donating in-kind items which do not fulfill commonly agreed product standards. Such harmonized regulations should also prevent donors from pressuring agencies to procure supplies from specific countries of origin.

Donors could also share audit information with one another, allowing programs to be audited once rather than subjected to multiple parallel audits by different donors. This would reduce the administrative burden on agencies and provide greater operational clarity by replacing multiple, sometimes conflicting, requirements with a single harmonized set of rules.

4.7. Collaboration on custom clearance (16 mentions)

Agencies importing supplies into a country must navigate national customs clearance processes. These processes vary widely across countries, are often highly complex, and require close attention, as delays can extend for months and result in significant demurrage and detention costs. Currently, each agency manages its own customs clearance, and knowledge sharing is limited to information exchange facilitated by the Logistics Cluster. Several respondents see significant efficiency gains from stronger collaboration in this area, which has also been identified as a potential quick win in recent UN80 reform discussions.

Respondents identified clear potential to streamline this process through inter-agency collaboration. One proposal is the creation of a "one-stop shop": a dedicated entry point in each country to facilitate customs clearance for all UN agencies. Such a service would manage importation procedures, apply relevant customs exemptions, and coordinate interactions with national authorities on behalf of the entire UN system. By negotiating with key actors (national customs authorities, port authorities, and customs brokers) this entity would have a stronger bargaining position and could more effectively leverage diplomatic channels to resolve complex cases. Overall, establishing a single point of contact and harmonized customs clearance processes would not only benefit UN agencies but also provide greater clarity, predictability, and efficiency for local authorities and other stakeholders involved in the importation process.

This type of collaboration could also extend to import corridors used by landlocked countries. For example, goods sent to Chad and the Central African Republic typically transit through Cameroon and the port of Douala. Most agencies manage this corridor independently, renting their own bonded warehouses and handling clearance individually. A shared service could coordinate these movements across the corridor, improving efficiency and cost-effectiveness.

A facilitation service of this kind could work closely with existing customs and trade initiatives, including Accelerating Delivery of Essential Products Together (ADEPT), the Global Alliance for Trade Facilitation, and the Logistics Cluster's Importation and Customs Clearance Together (IMPACCT) working group. Such service could also align with ongoing digitalization efforts aimed at simplifying these procedures and consolidating importation data in a harmonized format.

A potential challenge of this approach is that individual agencies often operate under specific memoranda of understanding with host governments, which may not be applicable or transferable to other agencies. This can limit the scope and feasibility of joint customs clearance arrangements.

4.8. Collaboration on localization (9 mentions)

Localization of decision-making and procurement is an important objective of the humanitarian community but remains one of its most persistent

challenges. While donors and agencies consistently emphasize the importance of engaging local actors more proactively, progress in practice has been limited. Greater progress could be achieved through more systematic collaboration on localization efforts. Today, most inter-agency collaboration mechanisms are still designed and implemented at headquarters level, often with limited involvement of local actors and country-level stakeholders. However, supply collaboration already occurs at the local level to a significant extent, with agencies frequently sharing information about local suppliers. These informal practices could be formalized within a common localization framework that would enable agencies to systematically share best practices and pool their local procurement. Local suppliers often require guidance from procurement officers to meet the quality, safety and sustainability standards of UN agencies. By working collaboratively, agencies could accelerate this capacity-building process and ensure consistent requirements across organizations. Such efforts could also support local suppliers in navigating potential tradeoffs between localization objectives and the requirements associated with global standardized product specifications. Access to larger, pooled procurement volumes would incentivize local suppliers to develop dedicated products and production lines tailored to the UN market. Once a supplier is approved by one agency, this recognition could be extended to others, thereby facilitating broader UN procurement at the national or regional level.

Local collaboration should also extend to logistics service providers, which would benefit from being engaged in a coordinated manner by multiple agencies under harmonized conditions. By sharing information on procurement arrangements with local service providers, agencies can reduce the risks associated with cartel formation or market monopolization. In contrast, uncoordinated procurement approaches, where each agency independently engages the market, can lead to price competition in which the highest-paying organization secures the majority of available capacity, leading to cost inflation. Coordinated procurement would not only stabilize local markets and foster sustainable partnerships with local actors but also reduce costs for humanitarian agencies. Local collaboration has also been identified as a priority area in recent UN80 reform discussions.

4.9. Collaboration on sustainability (8 mentions)

Sustainability is an increasingly important imperative for humanitarian agencies, who must build competencies in this area and work to reduce their negative environmental and social impacts. While some degree of information sharing already exists on that topic across agencies, there is significant potential for stronger collaboration. Several large organizations have developed substantial expertise in supply chain sustainability, whereas smaller entities often lag behind in measuring and mitigating their environmental and social footprints. Complex processes such as waste management, reverse logistics, and emissions measurement can be difficult for these organizations to implement independently. They could therefore benefit from the knowledge, tools, and processes developed by agencies with more advanced expertise.

Inter-agency collaboration on sustainability is becoming increasingly important as institutional donors place growing pressure on humanitarian organizations to report on their sustainability performance and to reduce their operational impacts. Moreover, future regulatory frameworks may impose stricter reporting obligations related to environmental footprints. Sustainability collaboration could be institutionalized through a cluster model similar to the Logistics Cluster, in which a lead agency with more advanced expertise coordinates the development of standards and facilitates knowledge exchange across the sector. This type of arrangement would help consolidate existing expertise and disseminate it more effectively among agencies. Such collaboration already exists in the sector through the IASC Guidance on Environmental Responsibility in Humanitarian Operations,⁹ which, for example, coordinates action and develops standards on carbon accounting and sustainability requirements in procurement. However, limited agency participation has constrained its overall impact.

There is also strong potential to improve the sector's sustainability performance through the adoption of eco-design principles for products distributed to affected populations. Collaborative efforts in this area could inform the development of sustainable product standards that all agencies could adopt (see Section 4.4 on product standardization).

9. <https://interagencystandingcommittee.org/iasc-guidance-environmental-responsibility-humanitarian-operations>



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5: Implementation and future outlooks

This section discusses the prioritization of the recommendations presented in the previous sections, drawing on structured feedback collected during consultations with practitioners and academics (see Section 2.4). As part of this consultation process, respondents were asked to rank the proposed recommendations according to their perceived priority, distinguishing between top and secondary priorities. The following subsections synthesize and prioritize the recommendations based on this feedback, while also taking into account the feasibility of implementation and the expected benefits (see Figure 8 for an overview of the prioritization results).

Figure 8: Overview of implementation recommendations and priorities

Top priorities

- Formalization of in-country collaboration
- Strengthened supply chain coordination
- Joint procurement

Secondary priorities

- Product standardization
- Inter-agency collaboration on sustainability

5.1. Top priorities

5.1.1. Formalization of in-country collaboration

This group of recommendations focuses on strengthening and formalizing supply chain collaboration at the country level. Respondents identified collaboration on localization (selected five times as a top priority) and collaboration on customs clearance (selected four times) as the highest priorities. These two recommendations have the potential to deliver significant benefits with relatively moderate implementation efforts. Interview findings show that collaboration is often easier to initiate among agencies operating within the same

country and can generate substantial operational gains. However, such collaborative practices currently remain largely informal, unstructured, and highly dependent on the motivation and personal commitment of individual staff members. To unlock their full potential and ensure their long-term sustainability, we recommend formalizing two in-country collaboration mechanisms.

First, respondents identified localization as a priority area requiring continued investment to strengthen local markets and empower local actors. At country level, the Resident Coordinator could incentivize collaboration by establishing a formal group of localization champions, tasked with meeting

regularly to exchange best practices and coordinate approaches to working with local suppliers and service providers. This is in line with outcomes of recent discussions within the HLGSC localization workshop. In parallel, the UN Global Marketplace could strengthen its contribution to localization by developing country-specific sections targeting local suppliers, supporting them throughout the registration process, and ensuring that procurement opportunities are published in a transparent and accessible manner. Adapting the language of procurement opportunities to local business contexts would be essential to enable meaningful participation by local providers (e.g., using French in francophone West Africa).

Second, to strengthen collaboration on customs clearance, existing initiatives such as the Logistics Cluster's IMPACCT program or the UN Department of Operational Support's Logistics Division could be tasked with defining the scope and governance of inter-agency collaboration in this area. This could include the creation of an inter-agency "customs liaison officer" role in each country, responsible for facilitating relationships between UN agencies and national customs authorities. Over time, this function could evolve into a small team with expanded operational responsibilities, ultimately serving as a "one-stop shop" for customs clearance activities in this country on behalf of all UN agencies. To ensure ownership, effectiveness, and information sharing, country office staff from different agencies currently involved in customs clearance should be closely involved in the design and implementation of this approach.

5.1.2. Strengthened supply chain coordination

Two recommendations related to supply chain coordination were consistently prioritized during the validation phase: the establishment of a central supply chain coordination entity (selected five times as a top priority) and the adoption of a lead agency model for category-based collaboration (also selected five times). Both recommendations call for stronger and more centralized coordination of humanitarian supply chains and align with the concept of supply chain orchestration described by Grange et al. (2020).

While closely related, the two approaches address coordination challenges in different ways and each presents distinct advantages and limitations. A central supply chain coordination entity offers the benefit of greater neutrality, enabling system-wide coordination

across all product and service categories. Such an entity would be well positioned to set priorities, arbitrate trade-offs, and ensure coherence across the humanitarian supply chain as a whole. However, a centralized unit is unlikely to possess deep technical expertise across the full range of product categories and services, which may limit its ability to manage category-specific complexities effectively.

By contrast, the lead agency model assigns coordination responsibility within a given category to the agency with a dedicated mandate and the strongest technical expertise in that area. This approach ensures that category-specific decisions are informed by deep operational knowledge and sectoral experience. At the same time, it carries the risk that lead agencies may prioritize their own operational interests, potentially undermining trust and buy-in from other agencies. In addition, lead agencies may have limited capacity or incentives to coordinate effectively across categories, which could result in fragmentation at the system level.

Based on these findings, we recommend implementing both models concurrently, with clearly defined and complementary roles to avoid overlap and duplication. The central supply chain coordination entity should focus on system-wide orchestration across categories, including priority-setting, arbitration across competing needs, and ensuring overall coherence. Lead agencies, in turn, should retain decision-making authority within their respective categories, including responsibility for product standardization, supplier strategies, and the definition of category-specific data requirements. For example, a lead agency could determine product standards or define the type and format of data to be shared within its category, while the central coordination entity would aggregate and manage data across categories and support cross-category prioritization. This hybrid governance model would preserve the neutrality of the central coordination function while leveraging specialized expertise at category level.

Prescribing the specific entity that should be responsible for the central coordination function is beyond the scope of this report. However, interview findings point to several characteristics that would increase the likelihood of such an entity being recognized and broadly accepted by agencies. It should be a neutral, non-profit entity with a clear mandate and executive authority conferred at the

highest level of UN leadership. While operationally independent, the entity should be overseen by a governing board with broad representation from participating agencies. The involvement of major donors, either on the board or through a formal advisory structure, would further strengthen agency buy-in and help ensure sustained support from the donor community.

An additional recommendation frequently linked to supply chain coordination is the harmonization and sharing of data (selected four times as a top priority). Data sharing was widely identified as a foundational enabler of supply chain collaboration, whether under a central coordination model or a lead agency approach. Effective data sharing requires agreement on both the scope and format of information exchanged to support interoperability. Given the diversity of ERP systems used across agencies, we recommend starting with lightweight and pragmatic solutions, such as APIs that exchange a limited set of critical data for a small number of high-volume, standardized products. As trust is built and the benefits of data sharing become more evident,

lead agencies can progressively expand the scope of products and data elements included in these exchanges.

5.1.3. Joint procurement

A third group of recommendations focuses on collaborative procurement. The recommendation From piggybacking to joint procurement was identified as a priority during the validation process (selected five times as a top priority). While there is broad consensus on the benefits of the piggybacking mechanism, several interviewees highlighted its limitations in practice. These limitations stem primarily from a lack of willingness among some agencies to share contracts across organizations, despite the principle of mutual recognition being widely endorsed within the UN system. In addition, some agencies continue to treat contracts and LTAs as proprietary information and charge other agencies for access. Such practices undermine supply chain collaboration and should be eliminated. Respondents also noted that piggybacking may not be suitable for highly customized services, such as the procurement of complex IT systems.



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There is clear potential to strengthen existing platforms to better support piggybacking. For example, the UN Global Marketplace could offer a common supplier performance evaluation module accessible to all agencies. Several respondents further suggested that the UN Global Marketplace could serve as a centralized vendor repository, with regularly updated supplier data and clear references to contracts and LTAs available for piggybacking. Although the platform has explored such functionalities, their voluntary nature has resulted in uneven adoption and inconsistent data sharing across agencies. Requiring agencies to systematically publish their contracts and LTAs on a platform such as the UN Global Marketplace could significantly increase the effectiveness of piggybacking.

Respondents also viewed joint procurement as a natural progression beyond piggybacking. Approaching the market jointly, with harmonized requirements and pooled procurement volumes, offers the potential for greater efficiency gains. Such collaboration should initially focus on the procurement of non-specialized items commonly used across agencies and could later be extended to more items, as well as shared tendering for transportation and warehousing services.

Finally, several respondents identified donor-specific procurement requirements as a constraint to joint procurement. The recommendation to harmonize donor procurement regulations (selected four times as a top priority) would help address this challenge by enabling goods procured with funds from one donor to be transferred to programs funded by another. At present, such transfers are often not permitted. Achieving this would require institutional donors to align around a common set of procurement rules and to refrain from using procurement requirements to favor national suppliers or imposing standards that are not shared across the donor community.

5.2. Secondary priorities

5.2.1. Product standardization

It was somewhat surprising that product standardization was assigned only a secondary priority (mentioned once as a top priority and seven times as a secondary priority), despite the significant impact associated with this recommendation. A possible explanation lies in the perceived trade-off

between product standardization and localization, which was highlighted by several academics and practitioners during the validation process. Addressing this trade-off will require the adoption of product standards that consider local preferences of affected populations as well as the production capacities of local suppliers. Nevertheless, we consider increased product standardization to be an important enabler of deeper supply chain collaboration, including common procurement, shared warehousing, and expanded inter-agency stock exchanges.

5.2.2. Inter-agency collaboration on sustainability

The recommendation to collaborate on sustainability was mentioned twice as a top priority and six times as a secondary priority. This relatively low prioritization is surprising given the central importance of sustainability in humanitarian supply chains. One possible explanation is the existence of collaborative mechanisms that already address sustainability-related issues, such as the IASC Guidance on Environmental Responsibility in Humanitarian Operations, which may reduce the perceived urgency for additional initiatives. Another explanation may be that sustainability considerations are being deprioritized in the context of current funding cuts, which is particularly concerning.

However, sustainability and efficiency objectives are closely interconnected. Collaborative approaches to sustainability, such as harmonizing environmental standards, reducing packaging, optimizing transport routes, improving asset utilization, or investing in energy-efficient equipment can lead to cost savings over time while reducing the environmental footprint of operations. Despite current financial pressures, sustainability should therefore be viewed not as an additional burden, but as an enabler of more efficient and resilient supply chains. Strengthened inter-agency collaboration in this area remains essential to achieving both environmental and economic benefits for the humanitarian system. Such collaboration could start with the development of harmonized standards for measuring sustainability impacts and progress against shared targets. It could also include the development of common guidance on sustainability priorities and implementation mechanisms.

Conclusion

This research examined how shared supply chain services and interoperability mechanisms can improve the efficiency and effectiveness of humanitarian supply chains across the UN system. This concluding section synthesizes the main findings and reflects on their implications for ongoing UN reform efforts, particularly in a context of constrained funding and rising humanitarian needs. While the study focuses on UN agencies, several findings are also relevant to humanitarian organizations operating outside the UN system.

The findings confirm that supply chain collaboration in the humanitarian sector is shaped by a complex interaction of drivers and barriers. The results indicate that collaboration is most likely to emerge when institutional incentives, leadership commitment, and trust converge, and least likely where competition for funding, misaligned incentives, and fragmented governance structures persist. Many of the barriers identified are structural and institutional rather than technical, underscoring that interoperability challenges cannot be addressed through technology and systems alone but require sustained attention to governance, incentives, and change management across agencies.

The mapping of existing supply chain collaboration initiatives demonstrates that shared services and interoperability mechanisms already deliver tangible value to UN agencies and their partners. Rather than pointing to a lack of solutions, the findings suggest that the primary challenge lies in uneven adoption of existing initiatives, mandate-related constraints, and limited alignment of policies and processes across agencies. Extending such initiatives would therefore require targeted mandate adjustments and stronger coordination, rather than the creation of new institutional structures.

The analysis shows that interoperability potential varies across the supply chain. *Data and information management*, and *Processes*, are identified as the supply chain enablers with the highest potential gains from interoperability. Harmonized data standards, supply chain visibility and automated data exchange are foundational to almost all other forms of collaboration, from joint procurement to inventory sharing and coordinated transport.

In terms of supply chain functions, *Procurement* was recognized as the area with the greatest interoperability potential, followed closely by *Transportation* and *Warehousing and real estate*. These functions account for a large share of humanitarian supply chain costs and are still characterized by significant overlap across agencies. These findings suggest that prioritizing interoperability in a limited number of high-impact areas may yield greater returns than pursuing broad but system-wide harmonization.

Building on these findings, the report formulates nine evidence-based recommendations to strengthen supply chain collaboration and interoperability. Together, these recommendations propose a shift from fragmented, agency-centric supply chains toward a more coordinated, interoperable, and collectively optimized humanitarian supply chain ecosystem. The recommendations are therefore best understood as mutually reinforcing elements rather than standalone interventions.

While all recommendations are relevant, the research highlights several implementation priorities based on the insights from interviewees and an extensive consultation process with academics and practitioners. First, *formalizing in-country collaboration* offers immediate and practical gains with relative ease of implementation, particularly in areas such as localization and customs clearance. Second, *strengthening supply chain coordination*, whether through enhanced use of existing arrangements or, where appropriate, new mechanisms, is an important step to set priorities, coordinate supply chain activities, prevent duplication, and enable data sharing across agencies. Third, *joint procurement*, especially for non-specialized items, represents one of the most tangible and scalable opportunities for efficiency gains. Although recognized as secondary priorities, *product standardization* and *inter-agency collaboration on sustainability* must also be implemented. These priorities reflect a pragmatic sequencing approach, favoring feasible interventions with demonstrable benefits over more complex structural reforms.

Many of the approaches discussed in this report, such as central coordination, joint procurement, category leadership, data sharing, and product standardization, are well established in commercial supply chains, where collaboration is typically driven by direct financial incentives. In the humanitarian context, their application is constrained by institutional mandates, accountability arrangements, organizational cultures, and funding structures that differ fundamentally from the private sector. Some of these approaches already exist within the UN system to varying degrees, demonstrating that the challenge is not the absence of collaboration models but their uneven adoption, limited scale, and insufficient system-wide alignment. Today's context of funding pressure, reform momentum, and increasing digital maturity creates a window of opportunity to better align these approaches within the specificities of humanitarian operations.

To translate recommendations into practice, a phased and pragmatic implementation approach is proposed, starting with pilot projects focused on a limited set of product categories or services in selected countries. A central coordination entity would oversee these pilots, define clear KPIs, and ensure systematic monitoring and evaluation in order to build an evidence base before scaling. Successful models could then be adapted and replicated in additional contexts, allowing interoperability to expand progressively across the system while managing operational and institutional risks.

This study has several limitations that should be acknowledged. Most interviewees and advisory board members hold headquarters-level roles, which may bias perspectives toward global coordination challenges, although their prior field experience provides important operational insight. In addition, the qualitative nature of the research does not allow for precise quantification of costs or efficiency gains, highlighting the need for future work on return-on-investment assessments. Finally, while the focus on UN agencies was intentional, collaboration with non-UN actors remains an important area for further investigation. Several of the recommendations proposed may also be relevant for humanitarian organizations operating outside of the UN system. These limitations do not undermine the findings but help define the boundaries within which they should be interpreted.

Bibliography

- ACIMOVIC, J. & GOENTZEL, J. 2016. Models and metrics to assess humanitarian response capacity. *Journal of Operations Management*, 45, 11-29.
- ADSANVER, B., BALCIK, B., BÉLANGER, V. & RANCOURT, M.-È. 2024. Operations research approaches for improving coordination, cooperation, and collaboration in humanitarian relief chains: A framework and literature review. *European Journal of Operational Research*, 319, 384-398.
- CHALYVIDIS, C. E., OGDEN, J. A., JOHNSON, A. W., COLOMBI, J. M. & FORD, T. C. 2016 A method for measuring supply chain interoperability. *Supply Chain Forum: An International Journal*, 17, 246-258.
- COMES, T., VAN DE WALLE, B. & VAN WASSENHOVE, L. 2020. The coordination-information bubble in humanitarian response: theoretical foundations and empirical investigations. *Production and Operations Management*, 29, 2484-2507.
- CORBETT, C. J., PEDRAZA-MARTINEZ, A. J. & VAN WASSENHOVE, L. N. 2022. Sustainable humanitarian operations: An integrated perspective. *Production and Operations Management*, 31, 4393-4406.
- CSCMP. 2022. *CSCMP Supply Chain Management Definitions and Glossary* [Online]. Council of Supply Chain Management Professionals (CSCMP). Available: https://cscmp.org/CSCMP/Educate/SCM_Definitions_and_Glossary_of_Terms.aspx [Accessed 31.01.2026].
- EFTEKHAR, M., LI, H., VAN WASSENHOVE, L. N. & WEBSTER, S. 2017. The role of media exposure on coordination in the humanitarian setting. *Production and Operations Management*, 26, 802-816.
- GRANGE, R., HEASLIP, G. & MCMULLAN, C. 2020. Coordination to choreography: the evolution of humanitarian supply chains. *Journal of Humanitarian Logistics and Supply Chain Management*, 10, 21-44.
- JAHRE, M. & FABBE-COSTES, N. 2015. How standards and modularity can improve humanitarian supply chain responsiveness: the case of emergency response units. *Journal of Humanitarian Logistics and Supply Chain Management*, 5, 348-386.
- JAHRE, M. & JENSEN, L.-M. 2010. Coordination in humanitarian logistics through clusters. *International Journal of Physical Distribution & Logistics Management*, 40, 657-674.
- JAHRE, M. & JENSEN, L.-M. 2021. Coordination at the 10-year mark of the JHLSCM—from global response to local preparedness. *Journal of Humanitarian Logistics and Supply Chain Management*, 11, 585-598.
- KASAP-ŞİMŞEK, L. G., BALCIK, B. & CHANÉ, F. 2025. Investigating the impact of postponement and stock-sharing strategies on prepositioned relief stocks. *Decision Sciences*, 56, 533-552.
- MAGHSOUDI, A., ZAILANI, S., RAMAYAH, T. & PAZIRANDEH, A. 2018. Coordination of efforts in disaster relief supply chains: the moderating role of resource scarcity and redundancy. *International Journal of Logistics Research and Applications*, 21, 407-430.
- MCLACHLIN, R. & LARSON, P. D. 2011. Building humanitarian supply chain relationships: lessons from leading practitioners. *Journal of Humanitarian Logistics and Supply Chain Management*, 1, 32-49.
- MOSHTARI, M. 2016. Inter-organizational fit, relationship management capability, and collaborative performance within a humanitarian setting. *Production and Operations Management*, 25, 1542-1557.
- NAGURNEY, A., SALARPOUR, M. & DANIELE, P. 2019. An integrated financial and logistical game theory model for humanitarian organizations with purchasing costs, multiple freight service providers, and budget, capacity, and demand constraints. *International Journal of Production Economics*, 212, 212-226.

- RUESCH, L., TARAKCI, M., BESIOU, M. & VAN QUAQUEBEKE, N. 2022. Orchestrating coordination among humanitarian organizations. *Production and Operations Management*, 31, 1977-1996.
- SCHULZ, S. F. & BLECKEN, A. 2010. Horizontal cooperation in disaster relief logistics: Benefits and impediments. *International Journal of Physical Distribution & Logistics Management*, 40, 636-656.
- SHAHEEN, I. & AZADEGAN, A. 2020. Friends or colleagues? Communal and exchange relationships during stages of humanitarian relief. *Production and Operations Management*, 29, 2828-2850.
- SHAHEEN, I., HOSSAIN, M. I., AZADEGAN, A. & ALI, M. 2024. Power in coordinating supply chain projects in humanitarian settings: A case study of Rohingya refugee camps. *Journal of Supply Chain Management*, 60, 79-104.
- TATHAM, P. & KOVÁCS, G. 2010. The application of “swift trust” to humanitarian logistics. *International Journal of Production Economics*, 126, 35-45.
- TOYASAKI, F., ARIKAN, E., SILBERMAYR, L. & FALAGARA SIGALA, I. 2017. Disaster relief inventory management: Horizontal cooperation between humanitarian organizations. *Production and Operations Management*, 26, 1221-1237.

Editorial note

AI-assisted tools were used to support editing and improve the clarity and consistency of the report's language and writing style.

Appendix

The Appendix containing a detailed description of the analyzed supply chain collaboration initiatives, including their objectives, benefits, challenges, and lessons learned, can be downloaded from the following link: <https://www.unifr.ch/inf/scm/en/research/projects/interoperability>

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