

## Private-humanitarian outsourcing partnerships and contracts

Falagara Sigala Ioanna, Wakolbinger Tina, WU

### Research Questions

1. **Why** are HOs and LSPs **entering into outsourcing partnerships** and **how** do they **choose partners** throughout the disaster phases?
2. Which **humanitarian logistics activities** are **outsourced** to LSPs throughout the disaster phases?
3. Which **types of partnerships and contracts** exist between humanitarian organizations and logistics service providers throughout the disaster phases and what is the motivation for their choice?

### Method

This study is based on **empirical data** collected by interviewing **24 practitioners** from commercial **logistics service providers** and **humanitarian organizations**. A review of the related literature guided this research.

**Participants : HOs:** World Vision, CARE, Oxfam, Lutheran World Relief, AMREF, Flying Doctors, IOM, ICRC, UNFPA, UNHRD, UNHCR.

**LSPs:** DHL, Kuehne & Nagel, UPS, TNT, Agility, Maersk, Bolloré Logistics, Brussels Airlines, Accu-Logistics, UTI, Deloitte, BLG Logistics. Group.

### Results

- The outsourcing process of humanitarian logistics is **highly affected by the disaster phases**. It differs with respect to incentives to initiate outsourcing partnerships, partner selection criteria, activities to be outsourced and types of partnerships and contracts pursued.
- **HOs lack a strategic perspective of the outsourcing process**. Many HOs are mainly adopting an ad-hoc /short-term perspective and contracts between partners are guided by donor requirements and the uncertainty of humanitarian operations.
- Many **HOs lack a specific outsourcing policy**.
- **HOs** can play an important role with respect to **development** and capacity building of **local logistics providers**.
- Five **areas for future research** were identified based on practitioners' priorities.

## Best practices for outsourcing logistics in disaster relief

Gossler Timo, Falagara Sigala Ioanna Wakolbinger Tina, Buber Renate (WU)

Details are provided on the poster of Timo Gossler

For more information, contact:

Name: Ioanna Falagara Sigala and Timo Gossler  
E-mail: [ioanna.falagara.sigala@wu.ac.at](mailto:ioanna.falagara.sigala@wu.ac.at),  
[Timo.gossler@wu.ac.at](mailto:Timo.gossler@wu.ac.at)

## Horizontal cooperation between humanitarian organizations: the UNHRD case\*

Toyasaki Fuminori (York University)

Arikan Emel, Silbermayr Lena, Falagara Sigala Ioanna (WU)

### Research Questions

1. What are members' **incentives** to join the UNHRD network?
2. What are the effects of introducing the premium fee on member HOs? Can the premium be used as a coordination mechanism which achieves **system optimality**?
3. What are the impacts of members' decisions about the **ratio of stocks allocated between UNHRD's warehouses** and members' own warehouses?

### Method

**Two-step research approach:** collection of **empirical data** and **quantitative modeling**.

1. **Interviews with members of UNHRD** network: CARE, NCA, LWR, MercyCorps, ShelterBox and World Vision, JICA and UNHRD

2. **News vendor model in the context of non-cooperative game theory**

### Results

- **Incentives to join the network:** cost efficiency is a major/single reason for some HOs but it does not always lead HOs to participate in the network fully.
- Members follow different policies concerning stock transshipments:
  - Some member HOs are **reducing their stocks in the UNHRD** and use the **stock transshipment system** to compensate for their stock deficits.
  - Long **lead times** of restocking, lack of **traceability**, and long **tendering** processes.
- We propose the **premium** for usage of backup stocks as a measure for system optimality: (1) direct controllability, (2) no cost burden, (3) revenue opportunity
- **Premium fees** for backup stocks would achieve system **optimality**.
- **No applicable premium fee** exists under **partial** participation of members.

### Managerial recommendations for UNHRD

- As long as every member HO has stocks to loan in warehouses of the UNHRD, **charging the premium** would achieve first-best system **optimality**.
- Implementing the premium would lead partially-participating HOs to enjoy a **free-rider benefit**. This would accelerate member HOs' **reduction** of their **stock ratio** in UNHRD's warehouses
  - **Managerial recommendation for HOs**
- HOs would enjoy **cost-saving benefits** by participating in the UNHRD.
- For a **higher (lower) premium**, member **HOs should increase (decrease)** their order quantities.
- **Partial** participants could **enjoy a lower expected inventory cost** than full participants.

## How to increase the impact of disaster relief: A study of transportation rates, framework agreements & product distribution

Gossler Timo, Wakolbinger Tina (WU), Anna Nagurny (University of Massachusetts), Patrizia Daniele (University of Catania)

### Research Questions

1. How are **transportation rates** negotiated in framework agreements between humanitarian organizations (HOs) and logistics service providers (LSPs), considering the competition among HOs and among LSPs?
2. What is the influence of framework agreements on relief allocation and distribution decisions, considering restricted budgets and competition among HOs?
3. How can **policy makers** and **aid agencies** best **intervene** in order to **mitigate** the existing **limitations** and increase the impact of disaster relief?

### Method

**Game-theoretic models** on (1) simultaneous negotiations of framework agreements between multiple HOs and carriers and (2) simultaneous decisions of HOs on purchase volumes, relief allocations and carrier selection.

Solution approach: Numerical simulations leveraging the concepts of **Nash Equilibrium, Variational Equilibrium and Variational Inequalities**

### Results

- **Increasing the number** of preselected **carriers**, with which framework agreements are set up, **strengthens the bargaining power of HOs** and **improves impact** up to a certain limit.
- **Reductions of transportation costs** have a **positive**, but **decreasing marginal benefit** for all types of **relief items**.
- **Extending the volumes of framework agreements** provides the **highest benefits** when the bargaining power of HOs is strong, or when spot market rates are high.
- **Strongly asymmetric** demands, budgets, capacities or cost structures can entail relevant differences **and need to be considered by decision makers** when assessing the improvement potential of interventions.
- Interventions can also lead to **inefficiencies** when humanitarian organizations over-fulfill the needs of beneficiaries to signal their performance to donors.

\*Toyasaki F., Arikan E., Silbermayr L. Falagara Sigala, I. (2017). "Disaster Relief Inventory Management: Horizontal Cooperation between Humanitarian Organizations". Production and Operations Management, Vol. 26, Iss. 6, pp. 1221–1237

### Funding

This research is funded by the **Austrian Science Fund (FWF)**.  
Project:26015

## Prospects and bottlenecks of reciprocal partnerships in cash transfer programming for humanitarian response

Falagara Sigala Ioanna (WU) Toyasaki Fuminori (York University)

### Research Questions

1. What are the main **challenges** in partnerships between humanitarian organizations and financial service providers in implementing **Cash Trash Programming (CTP)**

### Method

This study is based on **empirical data** collected by interviewing **8 humanitarian organizations** (DRC, NRC, WFP, CRS Red Cross, Welthunger, 2 cash consultants), **2 private companies** (Master Card and Red Rose) and a **donor** DG ECHO.

### Results

- **Knowledge on finance:** One of the challenges of the relationships between FSPs and HOs is the different expertise that may result in communication gaps and different perceptions.
- **Market competition and service offered:** HOs demand tailored solutions to adapt to the environment where they operate. This adaptation may not be affordable for FSPs.
- **Humanitarian data protection:** Concerns about beneficiaries' privacy and data protection by using financial products to distribute CTPs.
- **Differences in governance structure and planning horizon** between HOs and FSPs.
- **Signs of new donation flows from institutional donors**, that they are willing to contract directly the FSPs to implement CTPs.

## Literature review of outsourcing in humanitarian logistics

Gossler Timo, Wakolbinger Tina (WU)

### Research Questions

1. How is the **practice of outsourcing** in humanitarian logistics described and analyzed in **literature**?
2. What are promising **directions** for future **research**?

### Method

- **Systematic literature review**
- Development of an **integrative framework** for outsourcing in humanitarian logistics which includes five dimensions: **subject, object, partner, design and context**

### Results

- **37 peer reviewed** publications refer to outsourcing in humanitarian logistics to **commercial, humanitarian or armed service providers**.
- Further **research** is required with respect to the **suitability of outsourcing under different circumstances**, the formalization of the **outsourcing process**, the specification of the **outsourcing design** and the development of the **service provider market**.