**International Forum**

*Unleashing Science, Technology and Innovation for Food and Nutrition Security*
*With special focus on Africa, Caribbean and the Pacific*

**Developing a road map**

15-17 October 2014

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*«Libérer la Science, la Technologie et l'innovation pour promouvoir la sécurité alimentaire et nutritionnelle*
*Avec, comme axe prioritaire, l'Afrique, Les Caraïbes et le Pacifique »*

***Élaborer une feuille de route***

*15-17 Octobre 2014*

NH Rijnhotel Arnhem, The Netherlands

# Supply Chain Management and Food Security During Crises

*Gyöngyi Kovács*
*Erkko Professor in Humanitarian Logistics*

# *Agenda*

- Insights from various projects – a kaleidoscope
  - NB! Taking the perspective of supply chain management
- Implications for innovation
- The HUMLOG Institute

# Hydro-meteorological disasters


EM-DAT

**Figure 7 – Natural disaster impacts by disaster sub-group: 2013 versus 2003-2012 annual average**

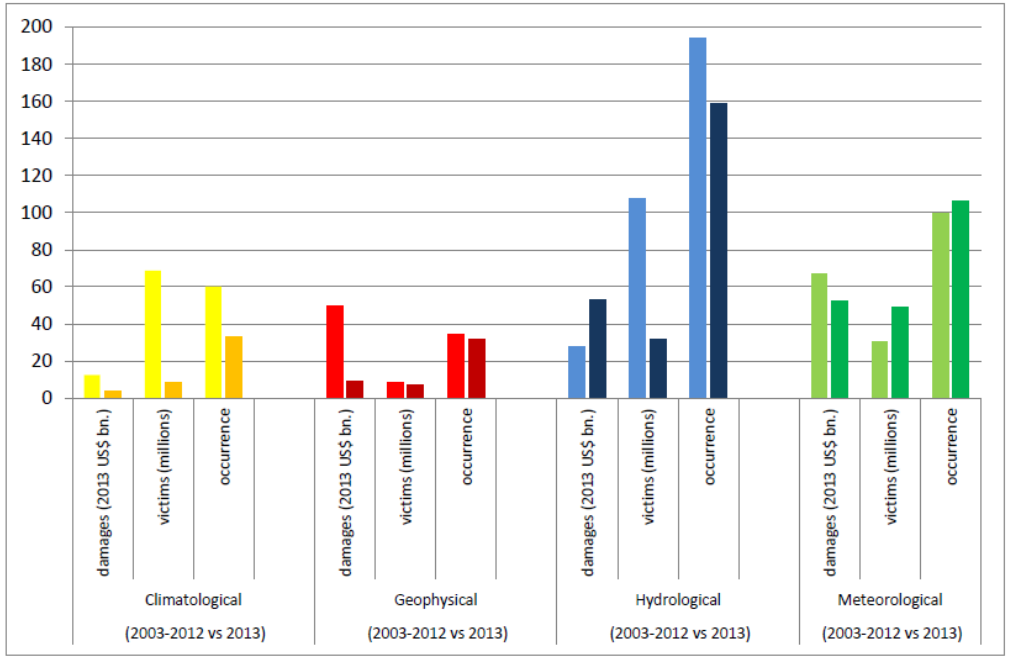
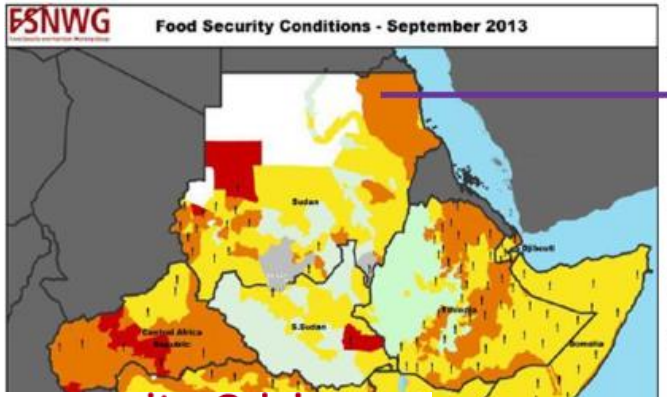


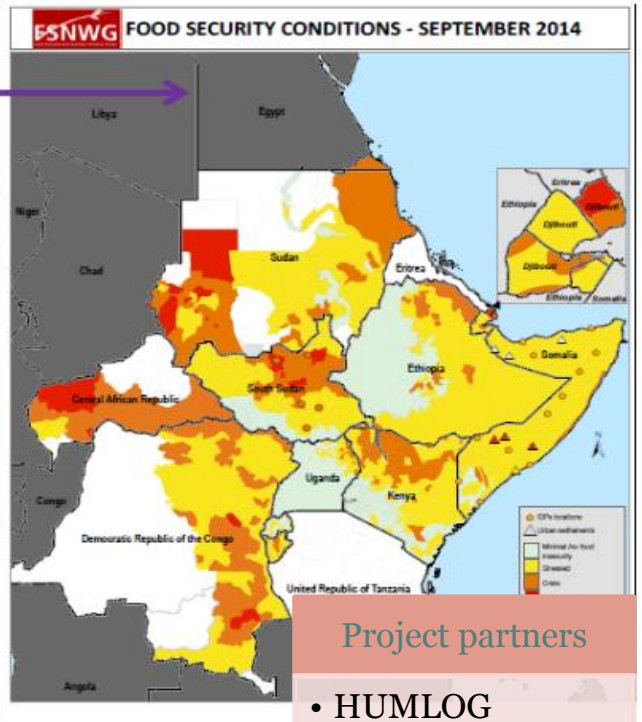

**Table 1 – Natural disaster subgroup definition and classification**

| Disaster Subgroup | Definition | Disaster Main Types |
|---|---|---|
| **Geophysical** | Events originating from solid earth | Earthquake, Volcano, Mass Movement (dry) |
| **Meteorological** | Events caused by short-lived/small to meso scale atmospheric processes (in the spectrum from minutes to days) | Storm |
| **Hydrological** | Events caused by deviations in the normal water cycle and/or overflow of bodies of water caused by wind set-up | Flood, Mass Movement (wet) |
| **Climatological** | Events caused by long-lived/meso to macro scale processes (in the spectrum from intra-seasonal to multi-decadal climate variability) | Extreme Temperature, Drought, Wildfire |
| **Biological**[4] | Disaster caused by the exposure of living organisms to germs and toxic substances | Epidemic, Insect Infestation, Animal Stampede |

Hydro-meteorological disasters

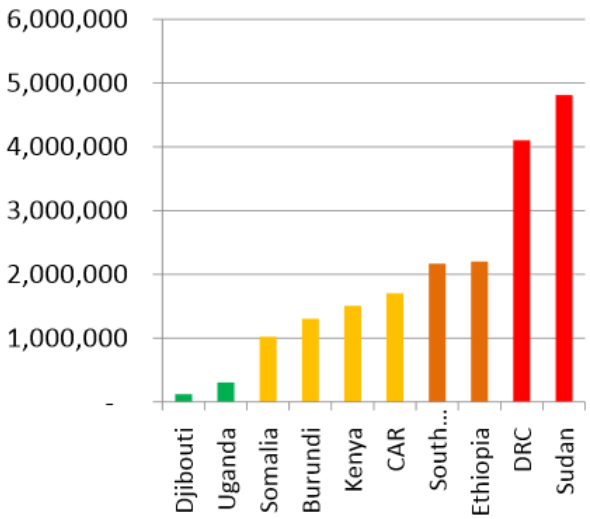
# *Early warnings and supply chain scalability (Kenya 2014)*




FSNWG (Sep 2014)

## Population in Food Insecurity Crisis or Emergency (IPC Phase 3 & 4)




| Country | Source |
|---|---|
| Sudan | IPC Aug 2014 |
| DRC | IPC June 2014 |
| Ethiopia | GoE, WFP |
| South Sudan | Sept 2014 IPC |
| CAR | IPC May 2014 |
| Kenya | KFSSG Aug 2014 |
| Burundi | Burundi Aug IPC |
| Somalia | July IPC |
| Uganda | Sept IPC 2014 (preliminary) |
| Djibouti | |
| TOTAL | 17.7 |

**Total=17.7 million**

opia, Uganda
outh Sudan, Djibouti, Burundi, K
Burundi.
Eastern DRC, CAR

### Project partners

- HUMLOG Institute
- UNICEF Kenya
- FSNWG / FAO
- Government of Kenya / Ministry of Health
- Various NGOs supporting the nutrition & health sector



September 2014

# *Supply chain scalability*
## *(Kenya, 2014)*

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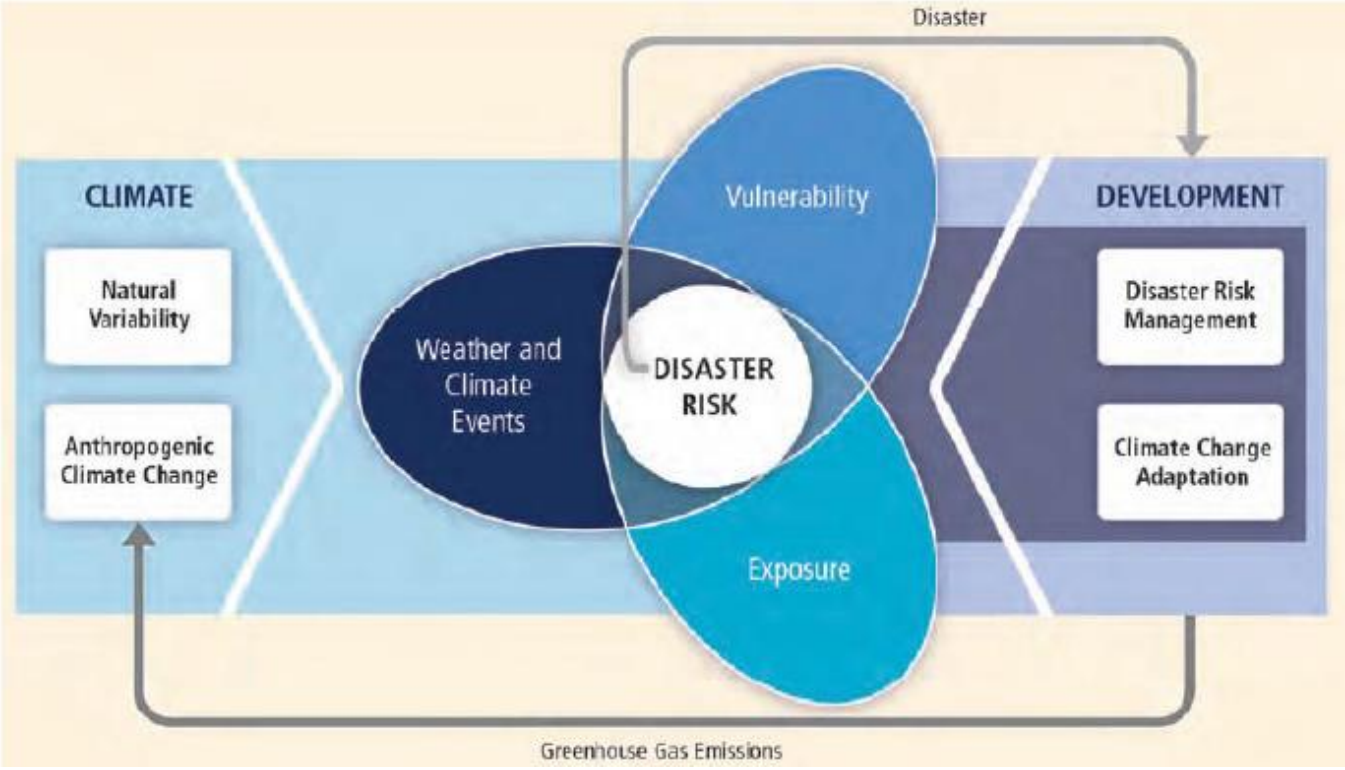
- Preparedness
  - Permanent structures of agro-food and public health supply chains
  - Supporting temporary structures of humanitarian supply chains
- Early warnings



  - Monitoring population movement, disasters, and crop development
  - Monitoring malnutrition – admission trends in health care centres
  - Forecasting weather and climate
  - For example: drought 1 => activation of RUTF/RUSF procurement, pre-positioning; drought 2 => setting up distribution mechanisms
- Expect the change!
  - Climate change, population movements, urbanisation…

# *More on extreme weather events… (Zambia / Malawi 2013-14)*

- Focus on the early warning chain of weather forecasts
  1. Warnings -> farmers / agro-food sector
  2. Warnings -> disaster management




**Main project partners**

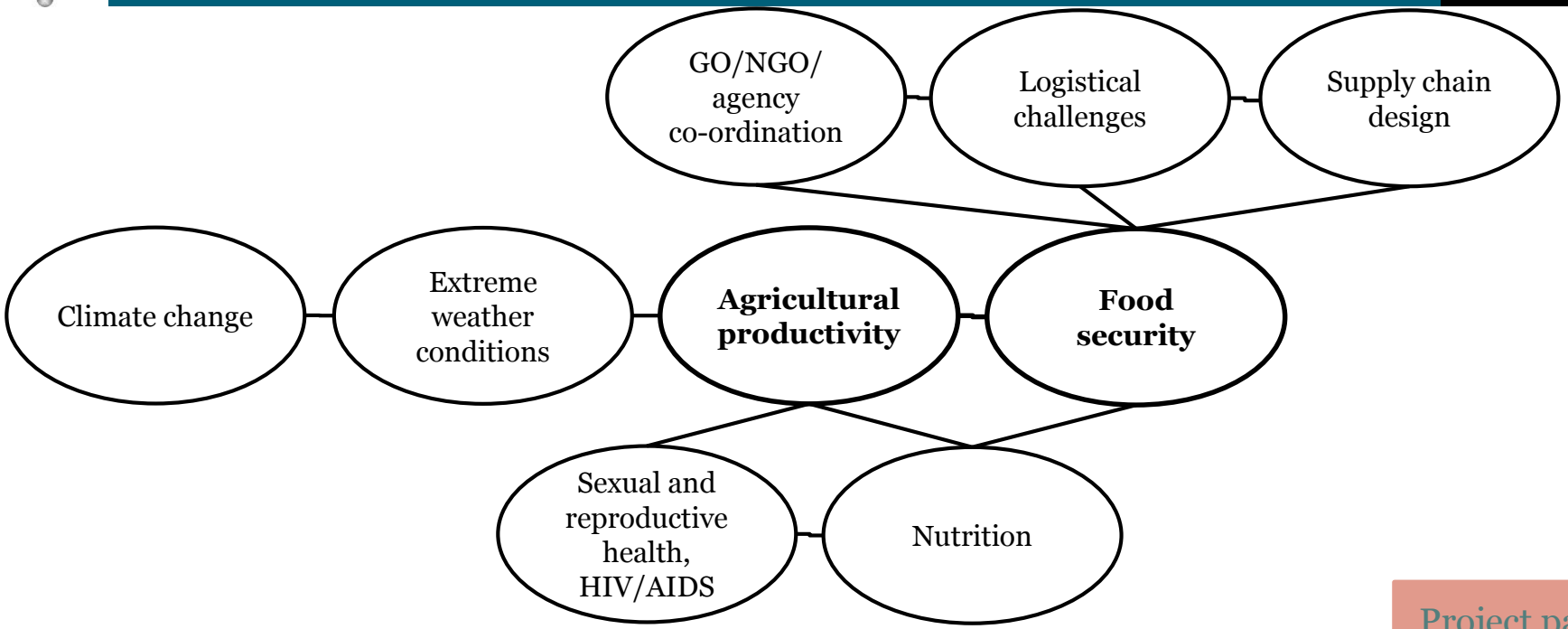
- Finnish Meteorological Institute
- HUMLOG Institute
- Met offices in Zambia and Malawi

# *Local vs. global sourcing of food*
## *(with insights from various cases)*

| Type of resource | Local resources in HSC configuration | Impact | Kosovo | FYROM |
|---|---|---|---|---|
| **Physical** | Local / regional prepositioning | - Immediate / early availability (speed of response, lead times) | ++ | o |
| | | - Cost efficiency | + | + |
| | | - Effectiveness of the response | + | + |
| | | - Adaptation to local needs | o | o |
| | Use of local materials | - Cultural appropriateness of items incl. the use of local technologies | o | o |
| | | - Gatekeeping, waste avoidance | n.a. | n.a. |
| | | - Balancing the local economy | ++ | + |
| | | - Cost efficiency | + | + |
| **Human** | Local staff | - Knowledge of local culture and customs, local needs and local authorities | o | o |
| | | - Access to beneficiaries | ++ | ++ |
| | | - Stimulation of economic growth through employment | ++ | + |
| | | - Beneficiary satisfaction | ++ | ++ |
| | | - Capacity building for long-term effects (e.g. continuity and resilience) | o | o |
| | | - Cost efficiency | + | + |
| **Organisational** | Local chapter / implementing partner | - Access to the disaster area, lead time (speed of response) | + | + |
| | | - Knowledge of local standards and customs | ++ | ++ |
| | | - Capacity building and community building | o | o |
| | | - Knowledge of local authorities | ++ | ++ |
| | Local decision-making | - Community participation | ++ | ++ |
| | | - Equity in aid and beneficiary satisfaction | – | + |
| | | - Ownership of the decision | + | + |
| | Local sourcing, local suppliers | - Balancing the local economy | ++ | ++ |
| | | - Cost efficiency | – | – |
| | | - Reduced need for customs clearance reducing lead times | + | + |
| | | - Ensuring cultural and legal appropriateness incl. local technical solutions | o | o |
| | Local distribution / LSPs | - Access to remote / insecure areas | o | o |
| | | - Knowledge of the area | o | o |
| | | - Stimulating economic growth | o | o |
| | | - Cost efficiency | o | o |

Matopoulos, Kovács and Hayes (2014)

# SCM & food security
## (Nepal 2009-11)




- The problem:
  - Humanitarian on top of development activities
  - Cyclical (reoccurring) hydro-meteorological disasters

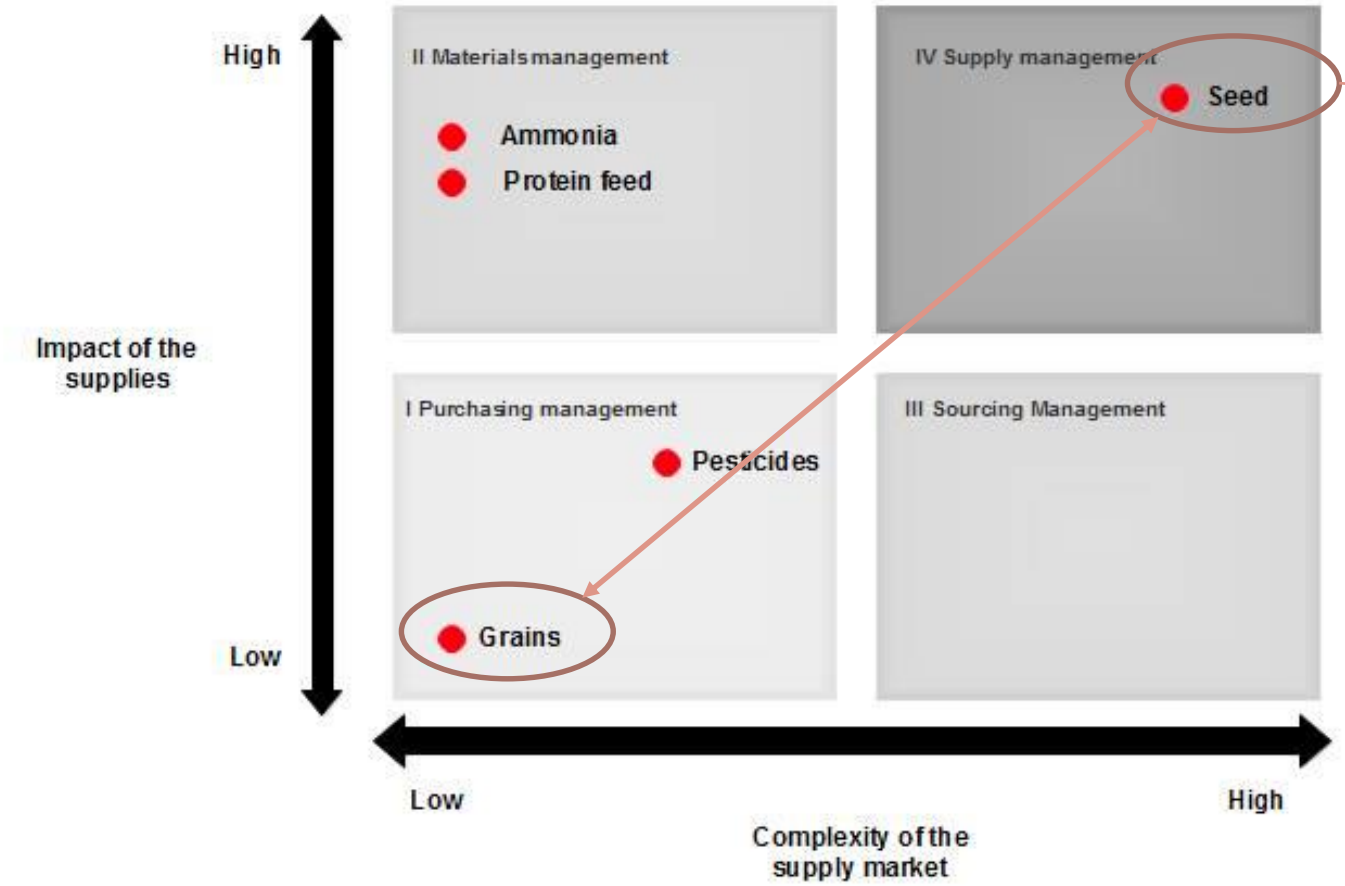
**Project partners**

- HUMLOG Institute
- Finnish Family Federation
- Institute of Medicine, Tribhuvan University

# *Overlaps vs. co-ordination*
## *(Nepal, 2009-2011)*

- Typical criticism towards humanitarian aid: lack of co-ordination
- Problem at hand: overlap between humanitarian and development supply chains
  - Same sectors and concerns
  - Many of the same NGOs and aid agencies – though different programmes
  - Same employees on the ground! & same regional authorities, lower level officials in spite of political instability
- Other issues
  - Problem of cross-border river regulations – need multilateral approach
  - Sourcing of food outside of the region for crises – instead of local food-stocks that would maintain diversity of food production
  - Problems with transport infrastructure and access to impacted regions

# Security of supply
## (Finland 2014)




Seeds for the climate(!)

Project partners

- HUMLOG Institute
- NESA

Lönnblad, Pirjetä, Stolt & Rantanen (2014)

# *Operational challenges – the cold chain*

Storing PAN products at too high/low temperatures may result in…

| | Pharmaceutical products | Nutritional products |
|---|---|---|
| **Impact on supplies** | Product efficacy may be reduced. | May turn rancid / spoilt & important nutrients lost. |
| **Impact on beneficiaries** | Patients do not receive the expected treatment, and in fact their health is jeopardized further. | |
| **Impact on service provider** | Reduced programme delivery, reputational risk and wastage due to spoilt supplies. | |

# *Implications for innovation*

- Process innovation
  - Mechanisms for early warning (e.g. weather products, monitoring systems)
  - Early warning ⇔ mechanisms for supply chain scalability, “early action”
  - Integration of permanent and temporary supply chains
- Product innovation
  - Climate adaptation (seeds/crops)
  - Robust products – not requiring cold chain nor electricity, locally maintainable
- Business model innovation
  - Cash-based programmes – get rid of the logistics! (or well, almost)
  - Change of roles – retailers as first responders

# *Why is humanitarian logistics & SCM interesting?*

- Logistics is the biggest cost factor in humanitarian aid
  - Efficiency is key to saving lives
  - Timely recovery is the basis for "back to b[illegible]iness"

- Rising demand
  - Growing number ar[illegible]isasters -> number of beneficiaries
  - Growing i[illegible]

**Logistics accounts for 80 % of costs of humanitarian aid (van Wassenhove, 2006)**


- "M[illegible]upply chains
  - [illegible]ce-light, structural flexibility
  - Yet complex – myriad of actors, overlap with development activities, humanitarian principles vs. peacekeeping

# *Keeping an eye on the ball*

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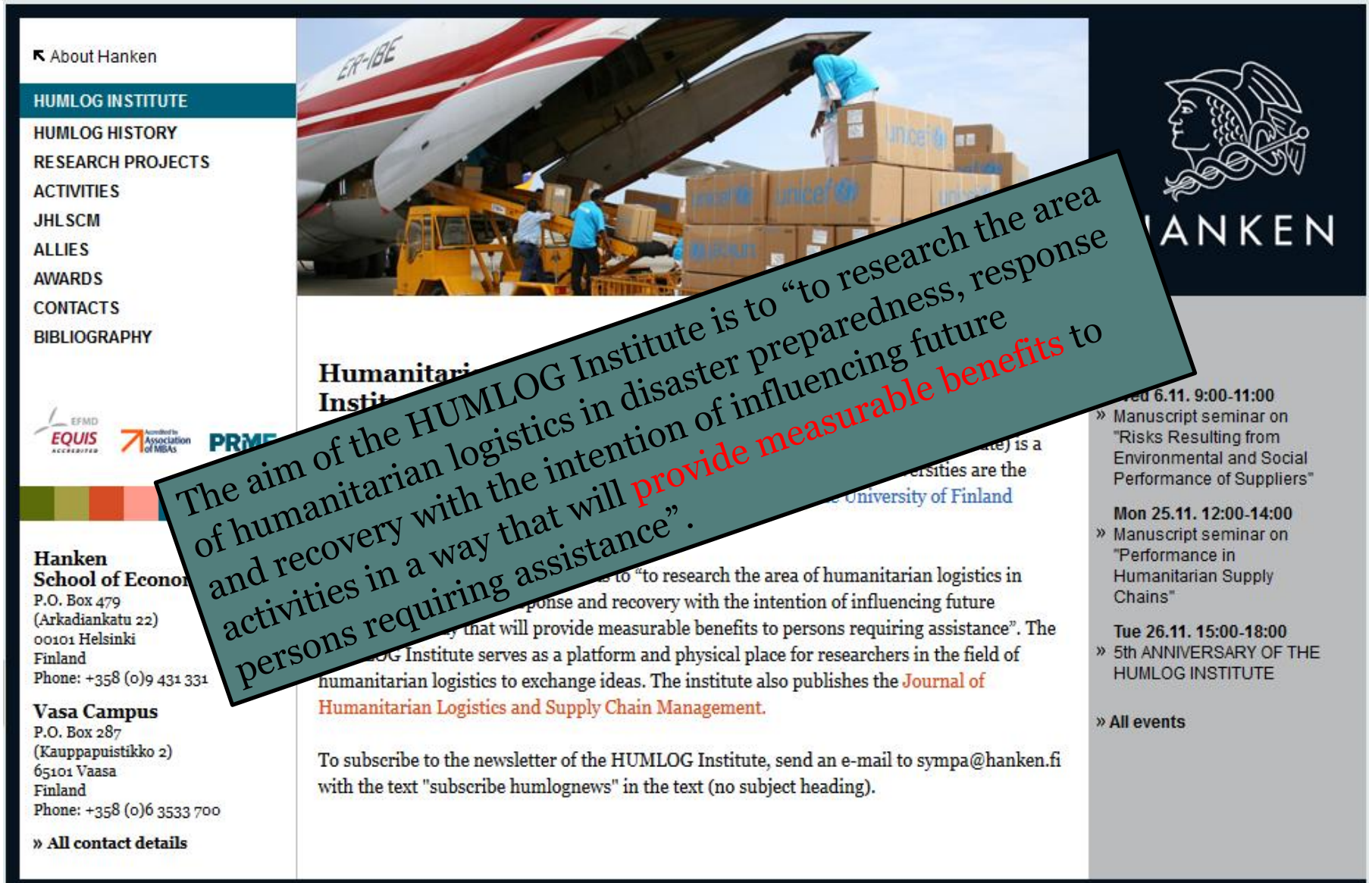

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HUMLOG HISTORY
RESEARCH PROJECTS
ACTIVITIES
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ALLIES
AWARDS
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» All contact details

**Humanitari… Insti…**

…te) is a …ersities are the …University of Finland

…to "to research the area of humanitarian logistics in …ponse and recovery with the intention of influencing future …y that will provide measurable benefits to persons requiring assistance". The …OG Institute serves as a platform and physical place for researchers in the field of humanitarian logistics to exchange ideas. The institute also publishes the Journal of Humanitarian Logistics and Supply Chain Management.

To subscribe to the newsletter of the HUMLOG Institute, send an e-mail to sympa@hanken.fi with the text "subscribe humlognews" in the text (no subject heading).

…ANKEN

…ed 6.11. 9:00-11:00
» Manuscript seminar on "Risks Resulting from Environmental and Social Performance of Suppliers"

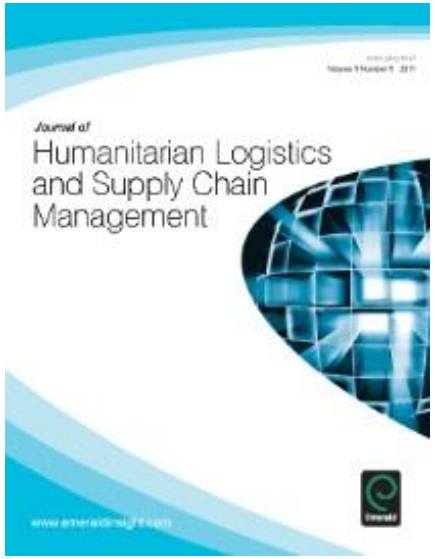
Mon 25.11. 12:00-14:00
» Manuscript seminar on "Performance in Humanitarian Supply Chains"

Tue 26.11. 15:00-18:00
» 5th ANNIVERSARY OF THE HUMLOG INSTITUTE

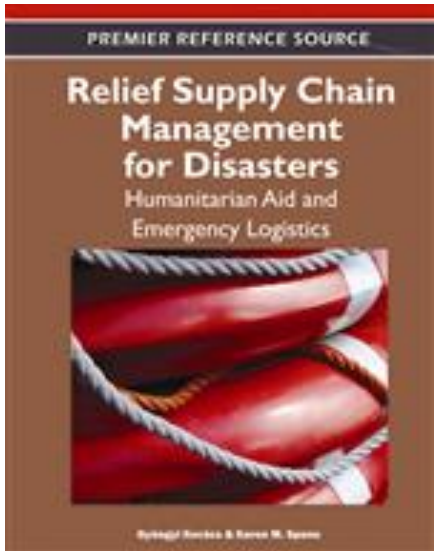
» All events

The aim of the HUMLOG Institute is to "to research the area of humanitarian logistics in disaster preparedness, response and recovery with the intention of influencing future activities in a way that will provide measurable benefits to persons requiring assistance".

# *Major publications*




- *Journal of Humanitarian Logistics and Supply Chain Management* (JHLSCM)
  - http://www.emeraldgrouppublishing.com/jhlscm.htm
  - Established in 2011, 2 issues / year
  - Edited at the HUMLOG Institute




- Anthology on "*Relief Supply Chain Management for Disasters: Humanitarian Aid and Emergency Logistics*" (2012)

# Further information:

HUMLOG Institute:
www.hanken.fi/humloginstitute

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To subscribe to the newsletter of the HUMLOG Institute, send an e-mail to sympa@hanken.fi with the text "subscribe humlognews" in the text (no subject heading).

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