Re-thinking the economy of delivering aid

A closer look at existing paradigms in the sector and a different perspective on the growing funding gap

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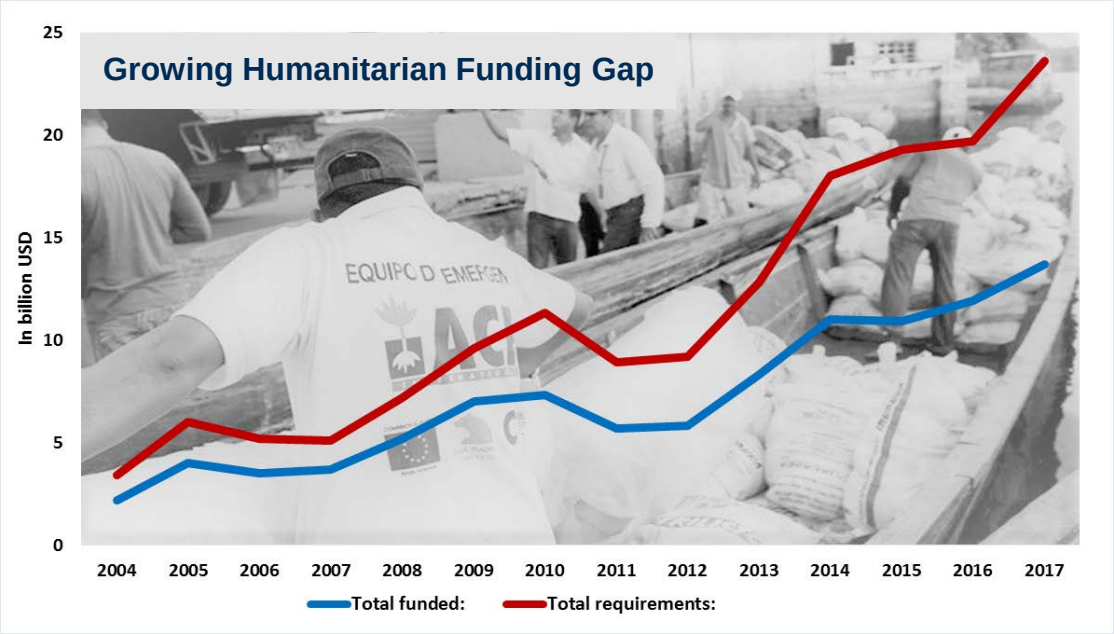
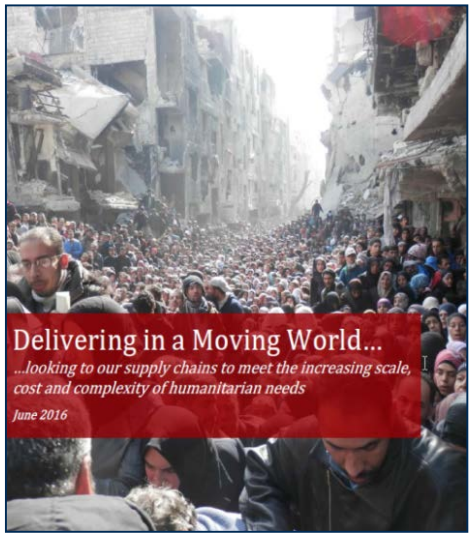
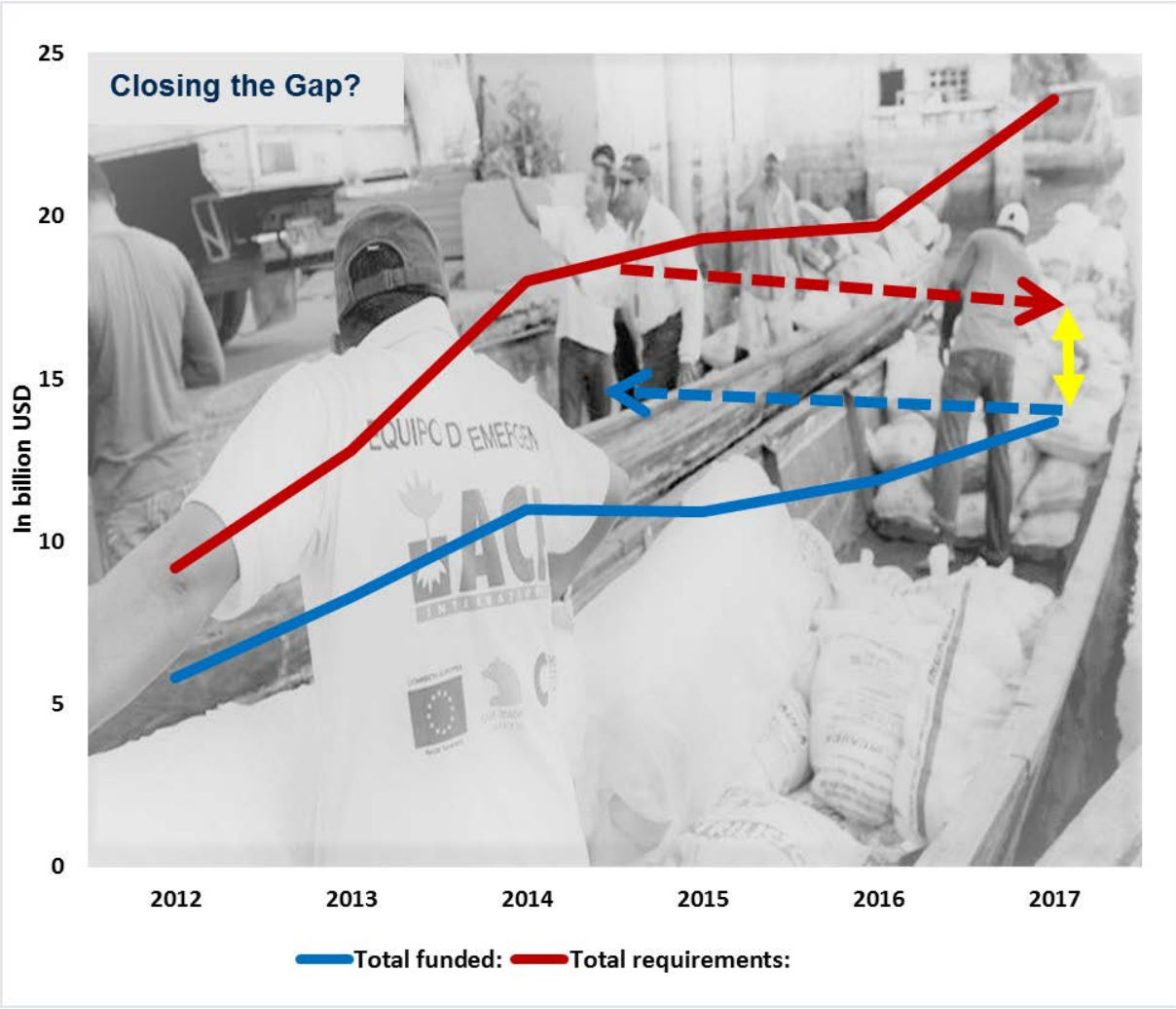
Regional Director – HELP Logistics

Re-thinking the economy of delivering aid





Re-thinking the economy of delivering aid



Re-thinking the economy of delivering aid - A closer look at Supply Chain Management and Preparedness

Humanitarian Network and Partnership Week (HNPW), Geneva
6 February 2018, 14h00 – 17h30

Prof. Dr. Maria Besiou

United Nations World Humanitarian Summit

Delivering in a Moving World... Looking to our supply chains to meet the increasing scale, cost and complexity of humanitarian needs

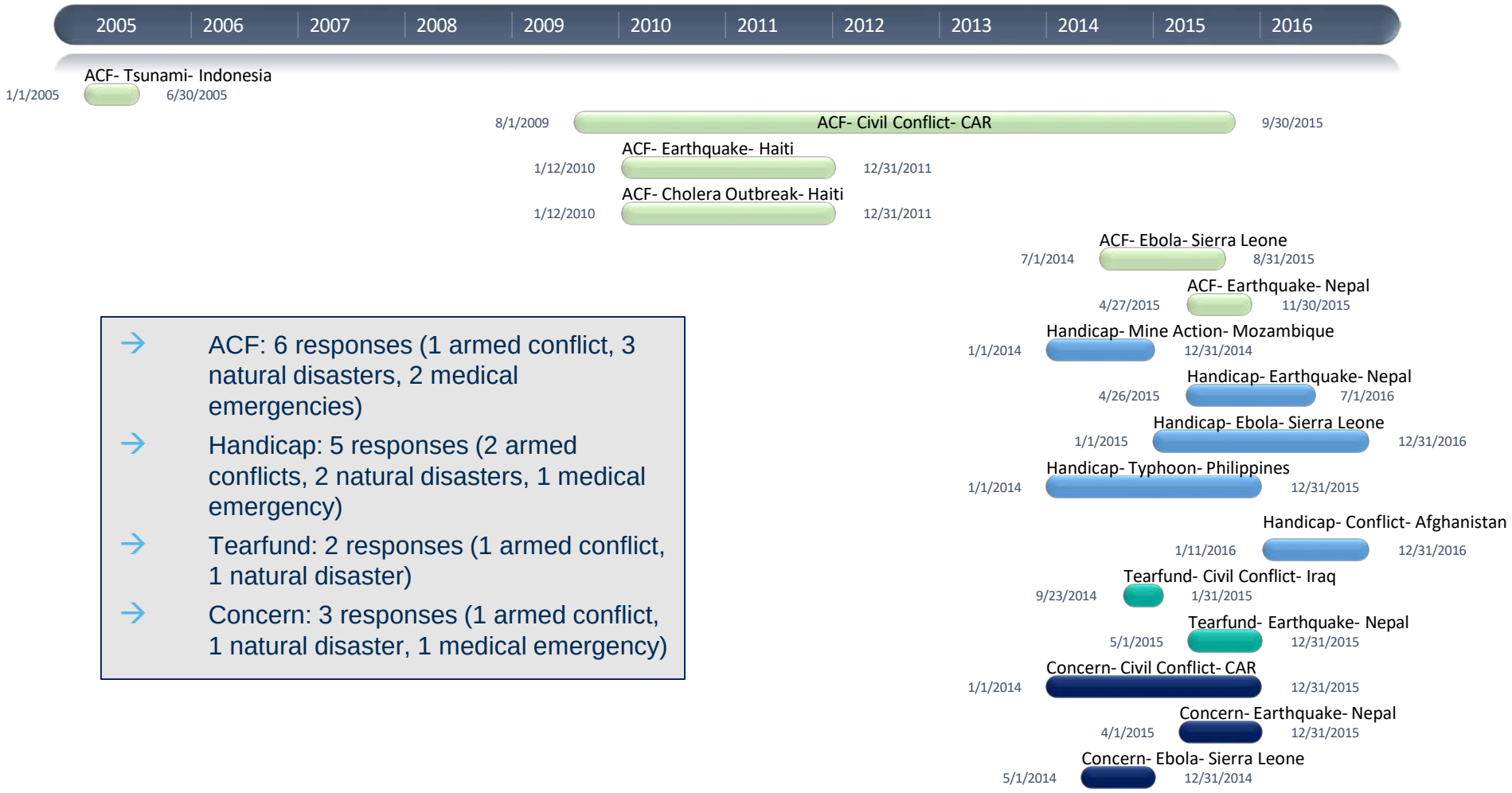
Two main assumptions:

- The supply chain costs represent between 60 to 80% of the total humanitarian expenditures (Van Wassenhove, 2006)

- Significant savings can be generated if investments are made before the disaster strikes ("one dollar saves seven dollars") (UNDP, 2012)

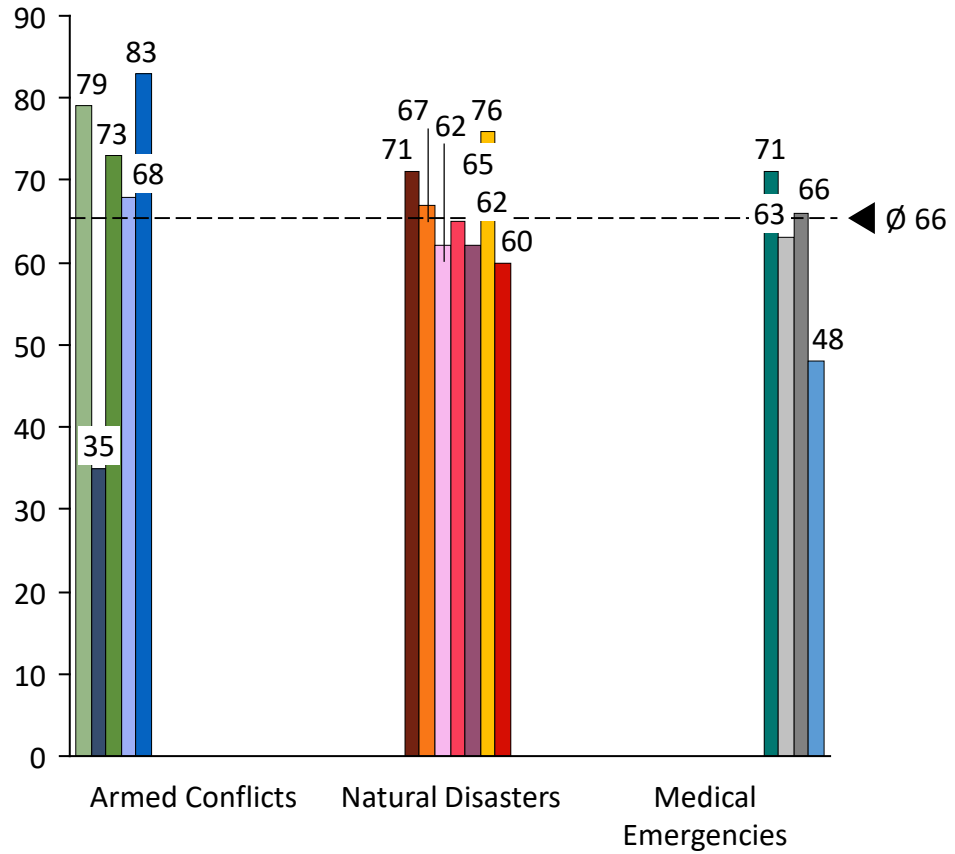
Delivering in a Moving World

The supply chain costs represent between 60 to 80% of the total humanitarian expenditures



- ACF: 6 responses (1 armed conflict, 3 natural disasters, 2 medical emergencies)
- Handicap: 5 responses (2 armed conflicts, 2 natural disasters, 1 medical emergency)
- Tearfund: 2 responses (1 armed conflict, 1 natural disaster)
- Concern: 3 responses (1 armed conflict, 1 natural disaster, 1 medical emergency)

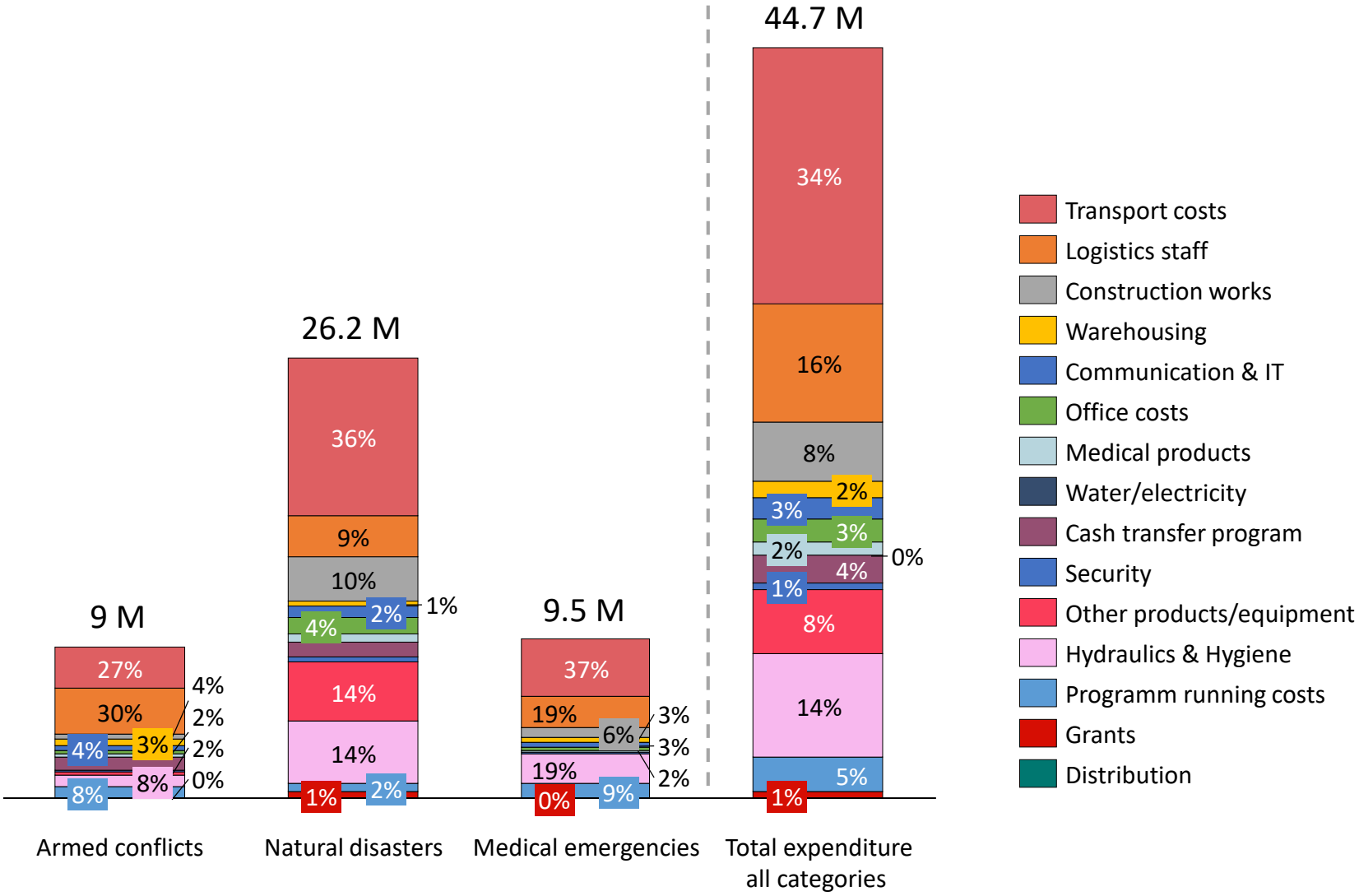
Supply Chain Costs Analysis



- 5 armed conflicts: 83 – 35% (65% / 76%)
- 7 natural disasters: 76 – 60 % (67%)
- 4 medical emergencies: 71 - 48% (64%)

- 16 disasters
- € 68 M overall expenditure
- € 44.7 M overall supply chain costs (66%)

Supply Chain Expenditure by Categories



Findings

- WHS paper: If supply chain functions require most of the funding in an emergency response, they should have an essential voice in the “the global strategy of a humanitarian organisation, be involved in the planning process and be positioned high up in the organisational structure by making them part of the decision-making processes”.

- Supply chain and logistics is the critical business component of an efficient (cost saving) and effective (time saving) humanitarian response. Therefore, the focus of humanitarian investments should at least give further consideration to build capacities in this field.

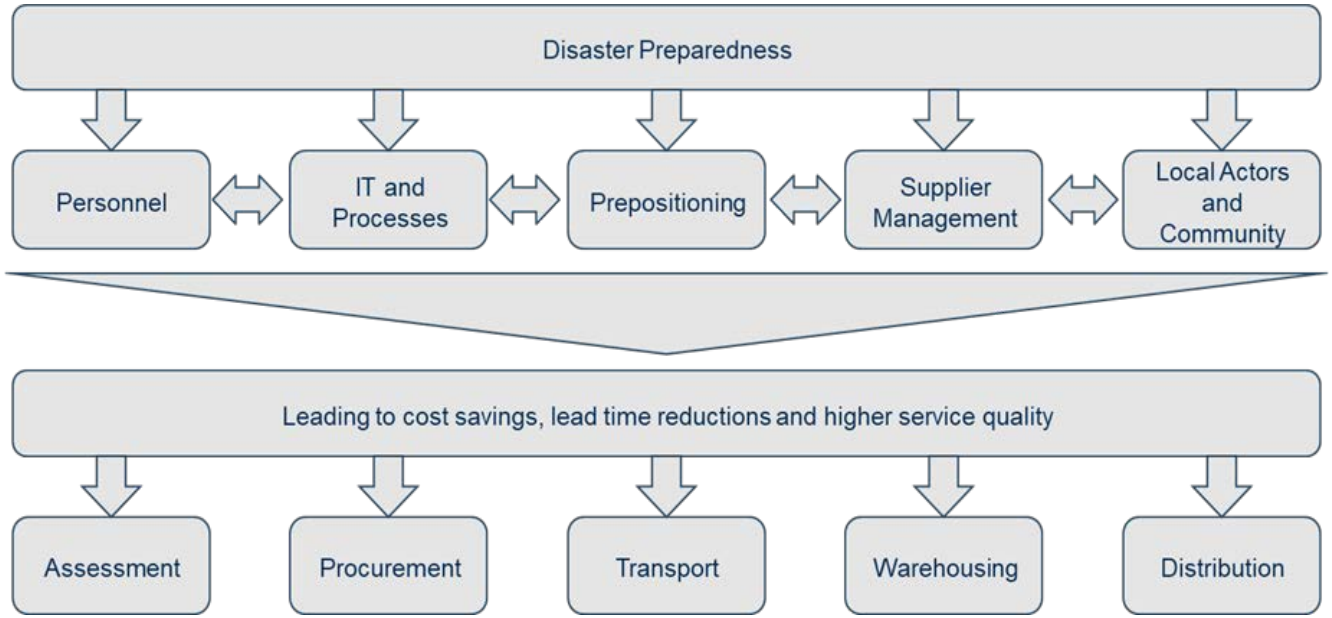
- The obvious questions arise, if investments in supply chain and logistics are to be made, what specific areas should be funded to maximise efficiency and effectiveness and, when would be the best time to do so?

Delivering in a Moving World

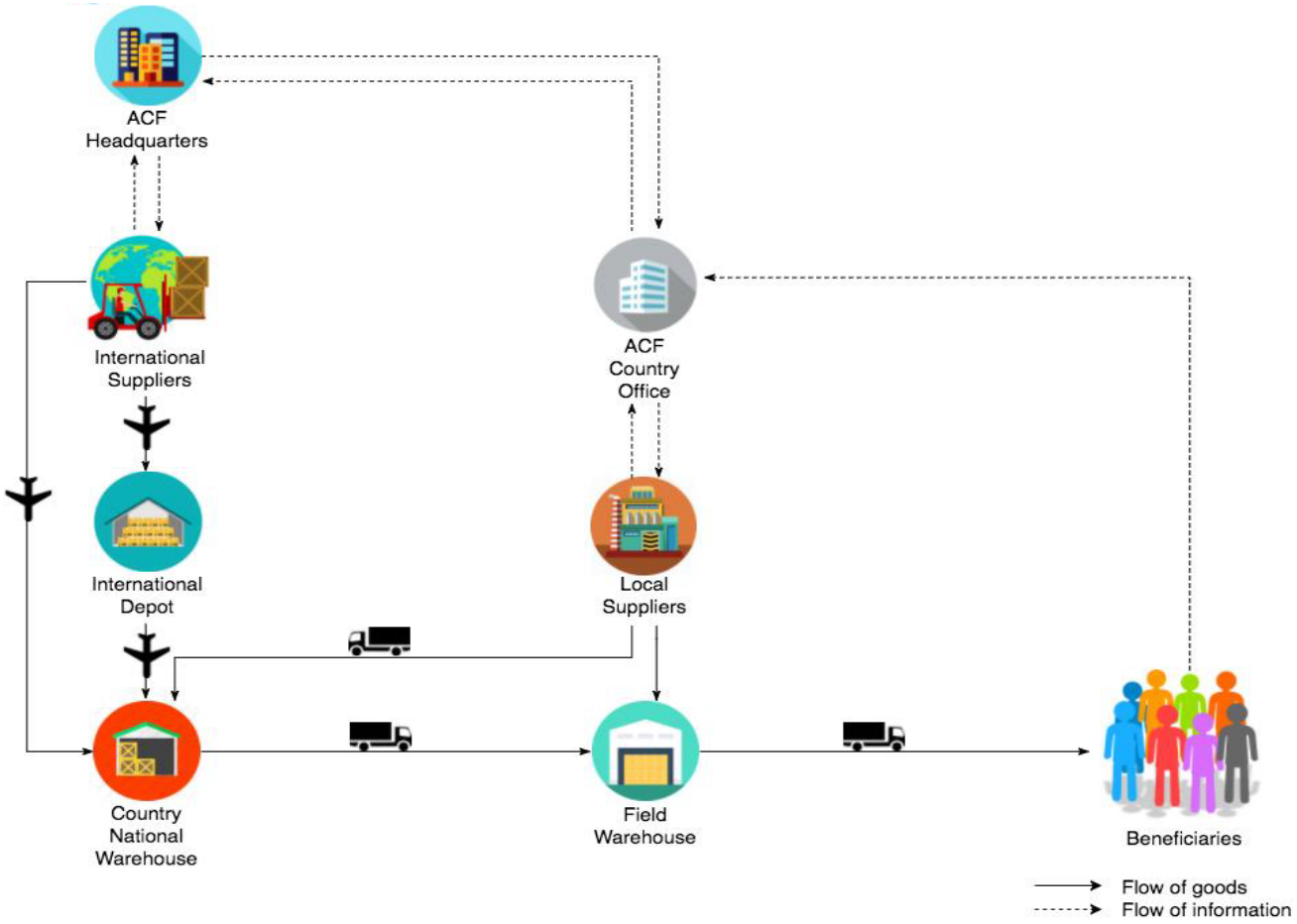
Significant savings can be generated if investments are made before the disaster strikes- “one dollar saves seven dollars”

- ACF: 2 responses (Haiti and Nepal earthquakes)
- Response period of 60 days analyzed for both cases

Preparedness Framework and RoI Model



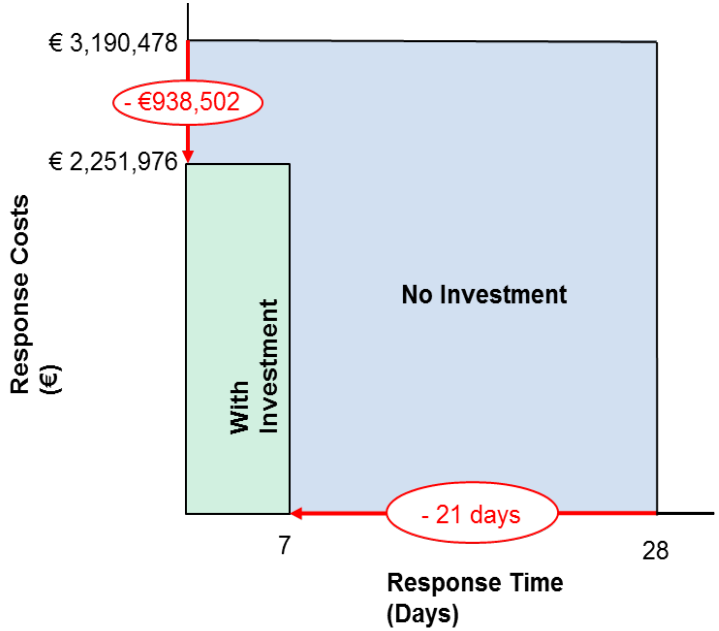
Return on Investment Study
Nepal and Haiti Supply Chain Case Studies



Return on Investment Study

Running the Simulation- Haiti Earthquake

Baseline	Day when disaster is happening	439
Investments	Total investments made	€ 115,271.15
	Country readiness level	74%
Costs	Total expenditure without investment	€ 3,190,478.89
	Total expenditure with investment	€ 2,251,976.73
	Cost savings	€ 938,502.16
	Cost savings percentage	42%
Time	Lead time without investment	28 Days
	Lead time with investment	7 Days
	Lead time savings	21 Days
	Lead time savings percentage	75%
Return on Investment	RoI ratio	1:7

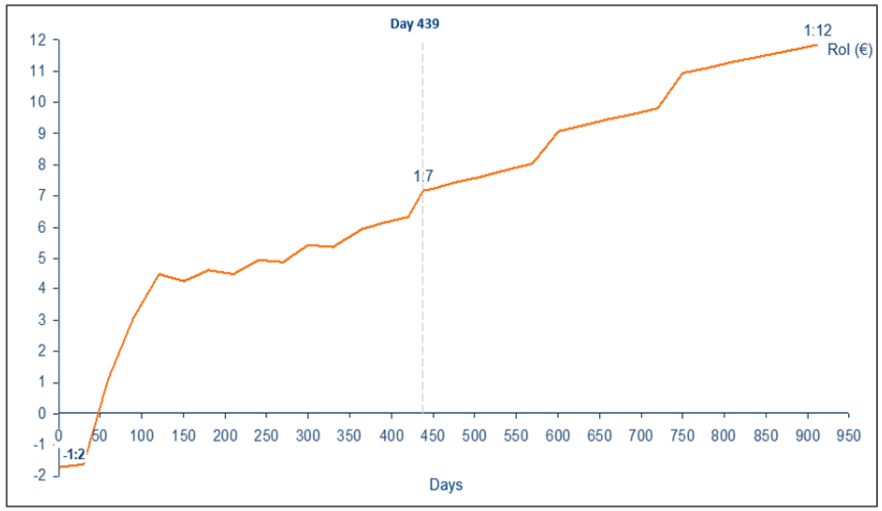


→ € 938 K in savings = 25,000 extra kits to distribute

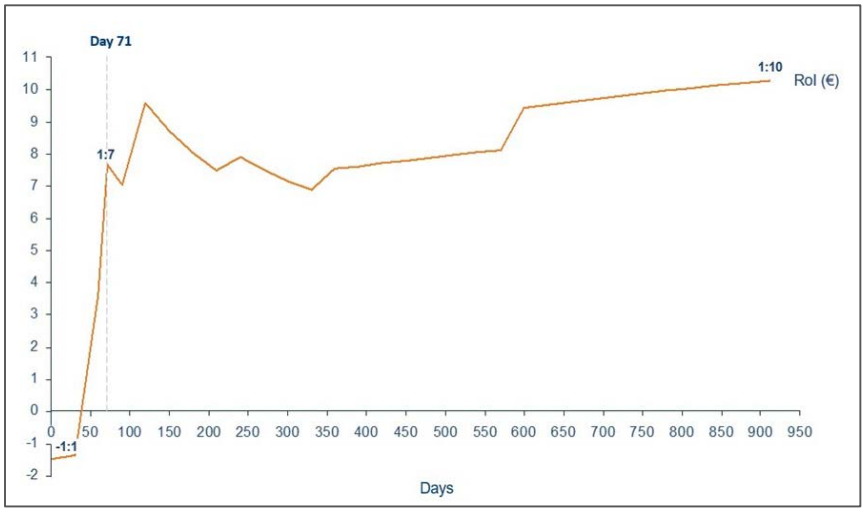
NB: In the case of Nepal an investment of € 39 K would had led to savings of € 341 K = 9,000 extra kits to distribute

Return on Investment Study
1:7 Ratio

- The time that passes between the investment made and the occurence of the disaster is determining the ratio significantly
- In the case of Haiti, the breaking point is reached at day 439 and in Nepal at day 71



Haiti



Nepal

Thank you!

Supply Chain Cost Analysis (60 – 80%)

Merged categories of the supply chain expenses

Supply Chain Expenses	Merged Categories
1) Transport costs	- Transport: 2x4 /4x4/Trucks/2 wheels/Boats - Transport/Other
2) Hydraulics and hygiene	- Hydraulic products - Hygiene equipment
3) Program running costs	
4) Logistics staff	- Expatriate staff - National staff
5) Construction works	
6) Communication and IT	- Computer equipment - Radio equipment - Other equipment
7) Warehousing	
8) Nutritional and medical products	- Food products - Nutritional products - Medical products - Food security products
9) Office running costs	Originally named as “Office setting up and running costs”
10) Other products	

Facts
1:7 Study

- What is the number of staff with supply chain relevant functions in the country: 130 for Haiti and 10 for Nepal.
- What is the number of international deployments needed in case of no investment: 10 for Haiti and 5 for Nepal.
- What kind of commodities shall be delivered (incl. volume and weight): The kit selected is a standardized commodity with the following characteristics; dimension per kit is 0.018m³ and it includes 3 body soaps, 10m ropes, 2 laundry soaps, 1 mosquito net, 5 hygienic pads, 1 bucket 14L, 1 bucket 30L, 2 blankets and 1 plastic sheeting. The kits are received fully packaged from the supplier and no further assembling has to be done.
- How many commodities the organisation intents to distribute within the given response time: ACF targets to distribute 25,000 family kits as part of their response strategy in the early phases of the relief operation.
- What are the costs for personnel (local, international and consultants): The cost for international consultant and training is € 40,000 for the first year and the salary of local emergency coordinators is 30% above average.

Facts

1:7 Study

- What are the costs for storage at international and local warehouses? The warehouse rent per year in Dubai is € 7,000 and € 75,000 in Lyon. The organisation yearly paid € 25,745.13 in Haiti and € 25,128.96 in Nepal.
- What are the transport costs (international and local) as well as commodity prices? Kits from international suppliers and the international depots 1 and 2 will be shipped by air. The calculated average price of the total number of planes was taken into consideration. The price per kit has been set at € 37.50. Price fluctuations are not considered due to limited data availability but also because of the conservative approach. Based on experience, it is though anticipated that the RoI could be even higher as prices tend to go up after the emergency if no agreements with the suppliers were made beforehand.
- Cost of IT systems (development, maintenance and equipment): The investment package for the purchase, storage, transportation and installation of the on-the-ground telecommunication is €20,000. The global system 'LINK' is used across all ACF operations (development and emergency relief). The cost is broken down as following in order to define the share of the system cost for one specific response; the initial development cost of € 1 Million is anticipated to be amortised over 10 years. The annual maintenance cost is € 200,000. The annual system cost therefore amounts to € 300,000. The share of this annual cost ('investment into LINK') for each emergency is then calculated based on the percentage of the emergency response in relation to the total annual ACF budget in the respective year. E.g. if the emergency response cost is 10% of ACF's total annual budget, the investment into LINK in the simulation tool would be 10% of the €300,000.

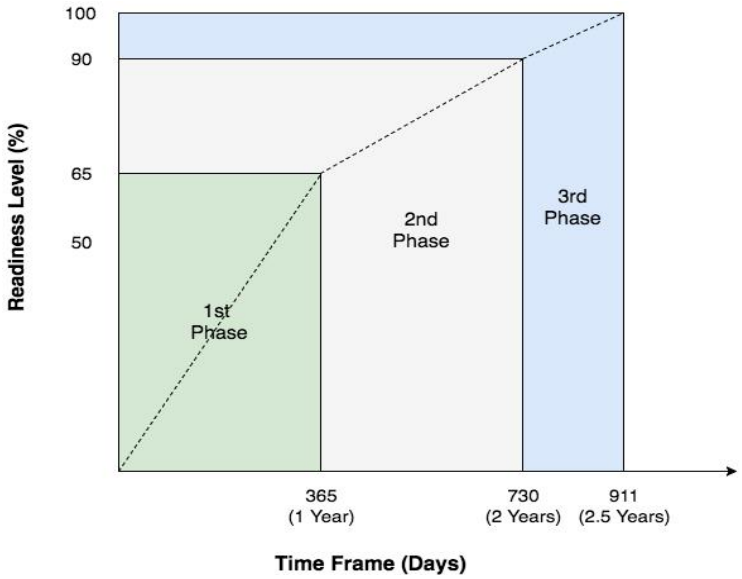
Facts
1:7 Study

- Capacity of warehouses, transport means and local suppliers: The local supplier can provide up to 10,000 kits. The local warehouse can store up to 15,000 items.
- Outline the total lead time from assessment and planning to final distribution of relief items and the detailed breakdown by process in worst case scenario.

Activities	Lead time (in days)
Operations planning (demand)	1
Identify suppliers and get quotations	2
Suppliers selection	1
Contracting supplier	1
Stock availability and ship to the country (kitting and int. shipping)	10
National shipment to disaster area	10
Distribution	3

Main Assumptions

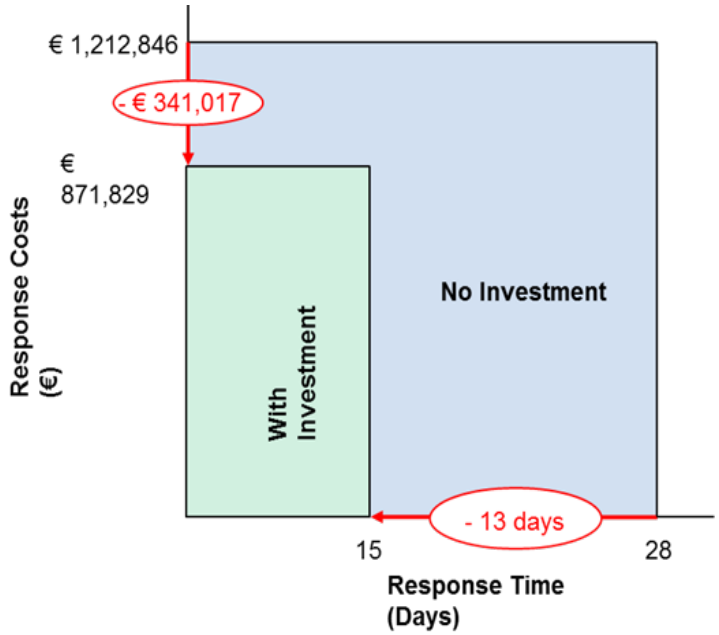
- Maximum preparedness time is 2.5 years (911 days), where the day 0 is the day when investments are made
- Country office can reach the 65% readiness level during first 365 days of preparedness, up to 90% in 730 days, and 100% in 911
- The higher the readiness level the less international support is needed
- The commodity that is delivered to beneficiaries is a non-food item (NFI) kit
- Certain time period has to pass between the moment the investments are made (day 0) and the
moment when the investments become beneficial for the response, therefore, if disaster happens too early, no return can be expected
- Scenario “without investments” employs capacities of international suppliers and prepositioned stocks in international warehouse(-s), whereas scenario “with investments”
employs capacities of local suppliers and commodities prepositioned in national warehouse(-s)
within affected country.



Return on Investment Study

Running the Simulation- Nepal Earthquake

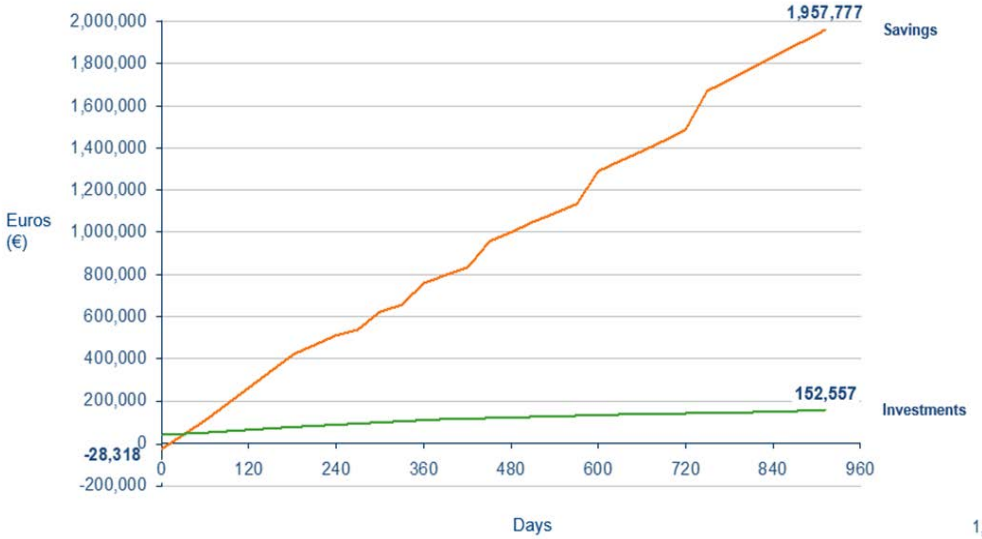
Baseline	Day when disaster is happening	71
Investments	Total investments made	€ 39,397.67
	Country readiness level	13%
Costs	Total expenditure without investment	€ 1,212,846.35
	Total expenditure with investment	€ 871,829.25
	Cost savings	€ 341,017.10
	Cost savings percentage	39%
Time	Lead time without investment	28 Days
	Lead time with investment	15 Days
	Lead time savings	13 Days
	Lead time savings percentage	54%
Return on Investment	RoI ratio	1:7



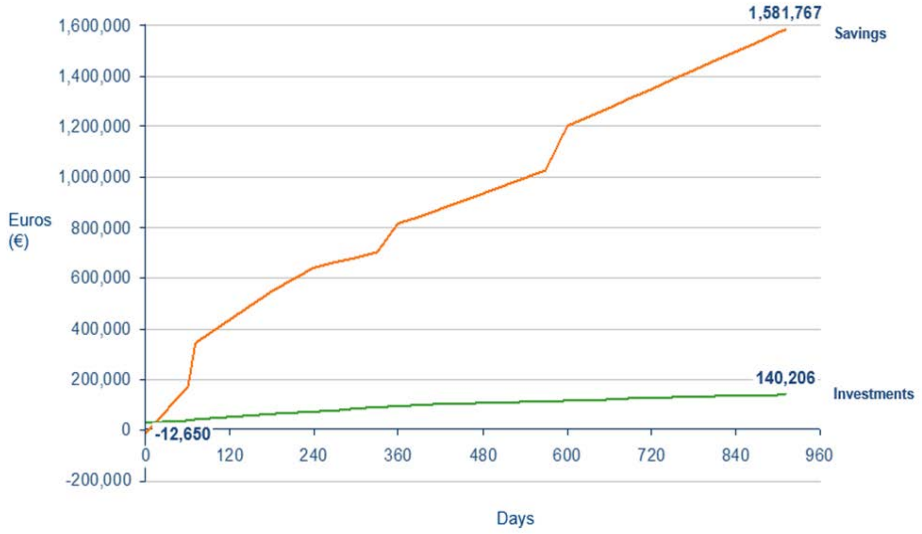
NB: In the case of Haiti an investment of € 115 K would had led to savings of € 938 K

Return on Investment Study

Savings vs Investments



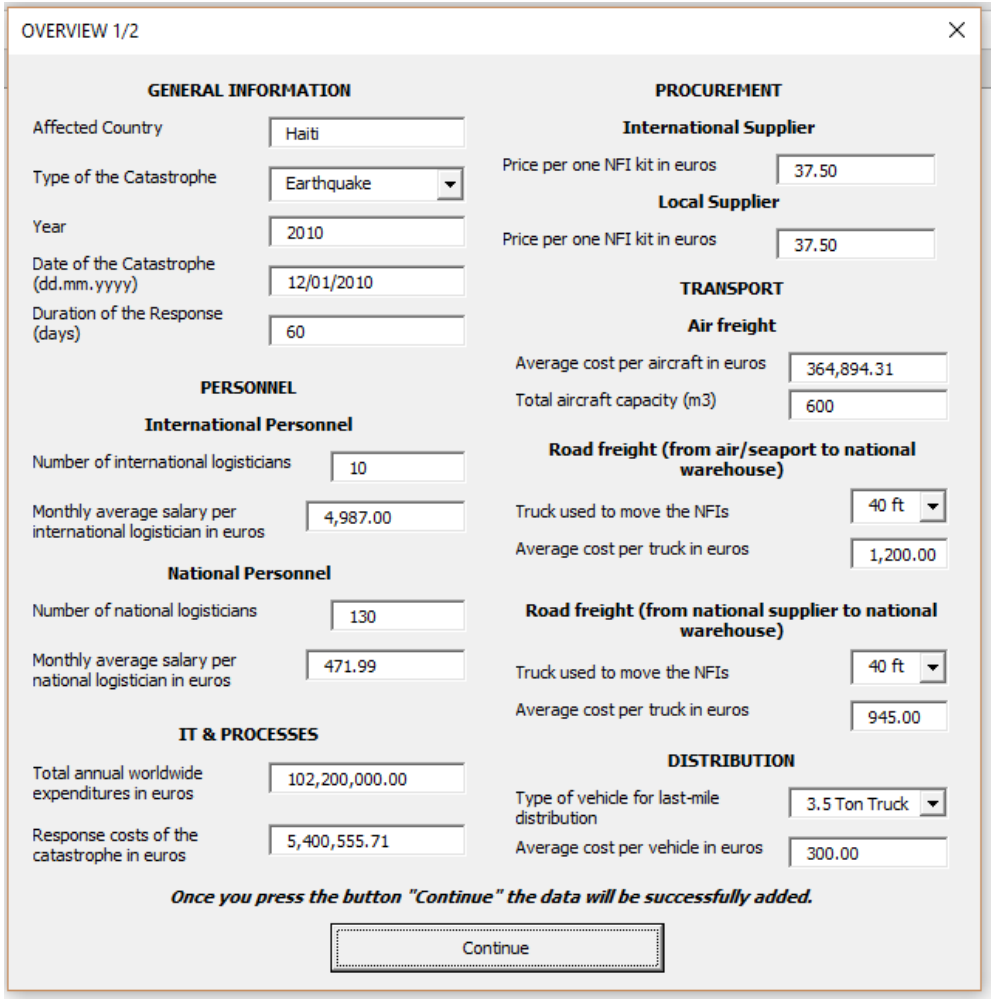
Haiti



Nepal

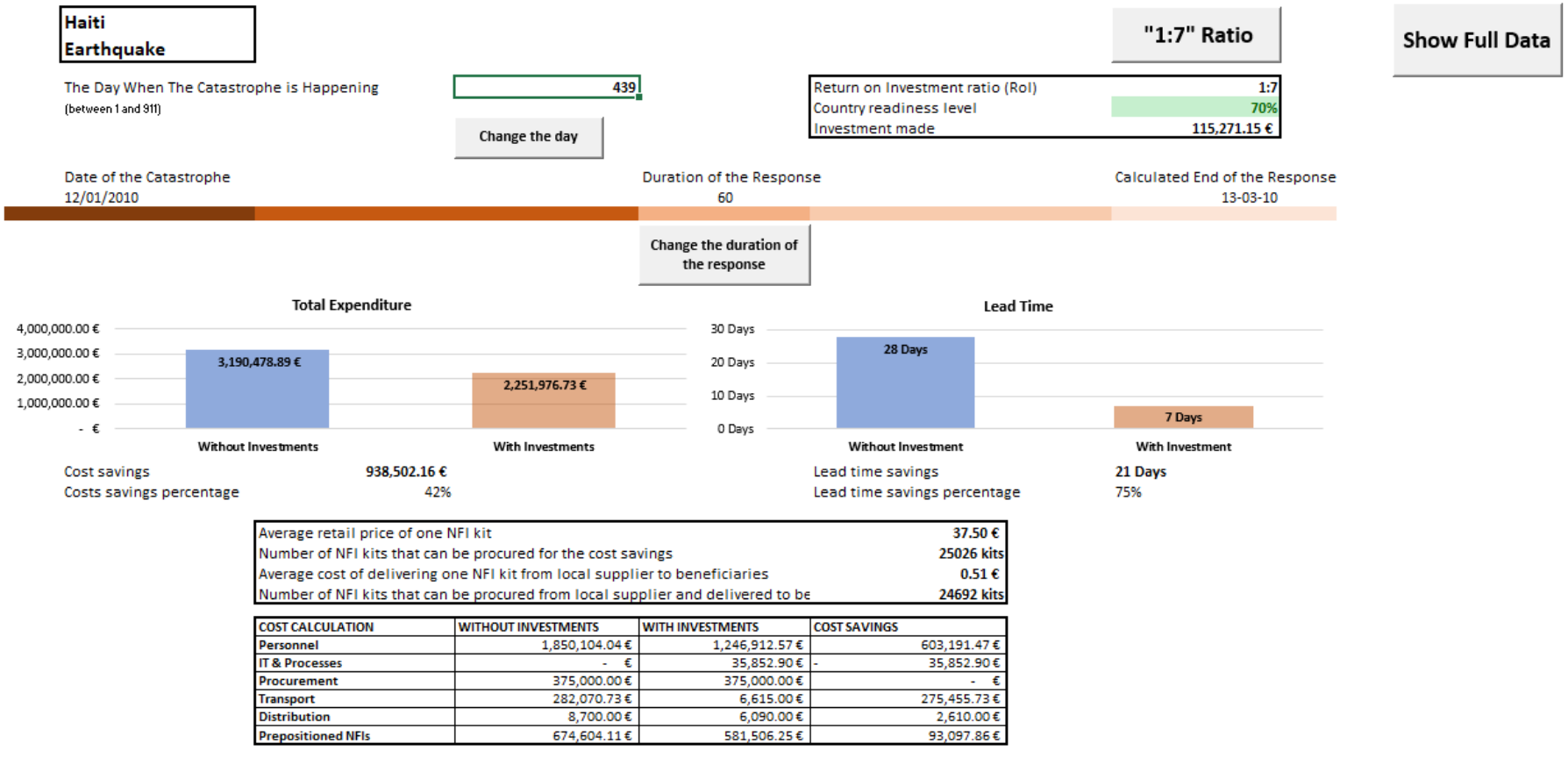
Return on Investment Study

Excel Tool- Data Entered



Return on Investment Study

Excel Tool- Results



COST CALCULATION	WITHOUT INVESTMENTS	WITH INVESTMENTS	COST SAVINGS
Personnel	1,850,104.04 €	1,246,912.57 €	603,191.47 €
IT & Processes	- €	35,852.90 €	- 35,852.90 €
Procurement	375,000.00 €	375,000.00 €	- €
Transport	282,070.73 €	6,615.00 €	275,455.73 €
Distribution	8,700.00 €	6,090.00 €	2,610.00 €
Prepositioned NFIs	674,604.11 €	581,506.25 €	93,097.86 €