

# On the ground rapid response geographic support for disaster and humanitarian decision-making

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Co-chair of UN-GGIM  
Patron, MapAction

[www.mapaction.org](http://www.mapaction.org)

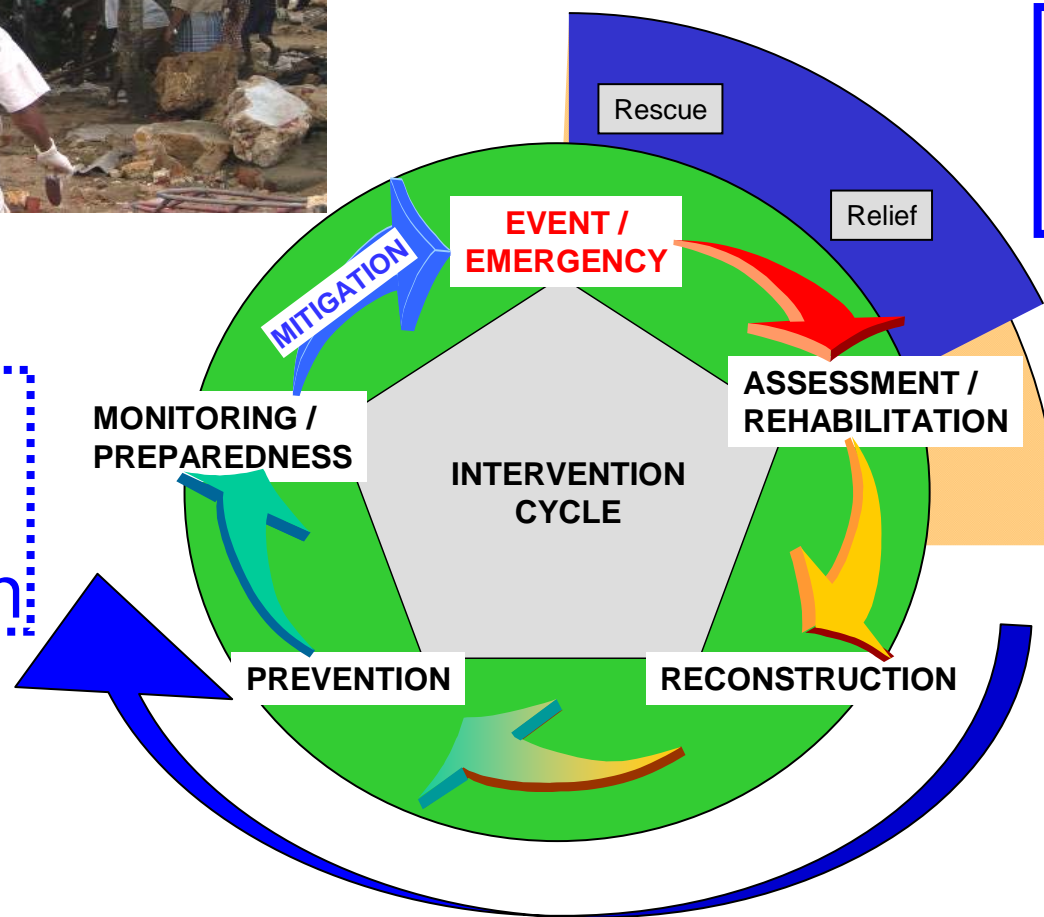




# The disaster intervention cycle



Disaster  
Risk  
Reduction



Disaster  
Response

# MapAction

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- **UK Charity therefore an independent Non-governmental Organisation (NGO)**
- **Original idea 1997, operational 2003**
- **Objectives**

*“To provide support to decision making and information management in humanitarian situations anywhere in the world using geospatially based methods with the aim of preserving life and relieving poverty and suffering.”*

- **Personnel: 5 employed, 80 volunteers**
- **Costs: circa £350,000 per annum (\$560k or 3.4M CNY)**
- **Support for crisis deployments provided free at point of delivery**

# MapAction contributions

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- Direct support to coordination, information management and decision making **on the ground**
- **Rapid deployment** – within 24 hours and use of current technology
- Provision of **Common Operational Picture**
- **Customised products** in hard, soft or web copy
- **Trained** self sufficient professional **personnel**
- “Customers” include all organisations on the ground plus many over the web

# MapAction's operational partners

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- 🌍 **Governments of affected countries**
- 🌍 **UN agencies  
Humanitarian Clusters**
- 🌍 **National and international Red Cross/Red Crescent**
- 🌍 **Disaster relief NGOs**
- 🌍 **Humanitarian donors**



# 'Professional volunteers'



**Deployable volunteers**

**Operational support and  
administration volunteers**



### Mission mobilisation

- Team alerts
- Base map data
- Equipment etc



### Support Base



### Maps uploaded to online platforms



### Field data collection with UN assessment groups

- GPS survey



### Field Base in country

- Understand Requirements
- Collate/analyse info
- Assemble data layers & produce maps



### Maps issued to relief agencies in field





# Training

- 10 training weekends per year
- Volunteers to attend at least 7
- Topics include
  - Technical GIS/GPS/Satcomms etc.
  - Information management
  - Security awareness
  - Humanitarian systems
  - Standard operating procedures
  - First Aid/Medical
  - Situation simulations



Scenario preparation for simulation exercise

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# Examples of deployments and decision support provided



# MapAction Emergency Deployments

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2003 Lesotho food crisis

2004 Asian tsunami

2005 Niger famine

Pakistan earthquake

2006 Suriname floods

Java earthquake

Dominica hurricane

Kenya floods

2007 Ghana floods

Jamaica hurricane

2008 Bolivia floods

Myanmar cyclone

Haiti hurricanes

2009 Namibia floods

Pakistan IDP crisis

Sri Lanka post conflict

Benin floods

Burkina Faso floods

Philippines typhoons

Sumatra earthquake

El Salvador flash floods

2010 Albania floods

Haiti earthquake

Pakistan floods

Saint Lucia hurricane

2011 Libya refugees

Japan earthquake

Cote d'Ivoire crisis

Nicaragua floods

2012 Philippines floods

Sahel food crisis

Congo ammo explosion

Madagascar floods

Comoros floods

Paraguay floods

Philippines floods

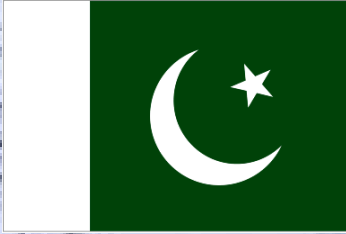
2013 Central African Republic

Lebanon/Turkey (Syria)

Myanmar cyclone

India floods

Sudan floods



# Pakistan earthquake

October 2005



*Mt Merapi,  
Java,  
erupting*



**Indonesian  
Earthquake / Volcano  
June 2006**

# Earthquake: Haiti 2010

A pivotal role in coordination of search/rescue and relief teams





MapAction

**Haiti: Earthquake-SAR Competed Sectors**  
**Port-au-Prince**  
**(19 Jan 2010 14:00)**

Map shows search and rescue sectors completed by the 19th January 2010.



Created: 19 Jan 2010 11:00  
Map document: WGS84-rt-SAR\_sectorsComplete\_16Jan10  
Projection / datum: Geographic / WGS84  
GLIDE number: EQ-2010-000209-HT

The depiction and use of boundaries, names and associated data shown here do not imply endorsement or acceptance by MapAction.

- UN Coordination
- Hospital Espoir
- Field hospitals
- Sectors
- Sectors completed

Data sources:  
Landsat  
SAR: UNDAC  
Roads: OSM

Produced by MapAction [www.mapaction.org](http://www.mapaction.org)  
[mapaction.haiti@gmail.com](mailto:mapaction.haiti@gmail.com)

MapAction is grateful for the support of DFID



**Hospital Locations**

Israeli  
18° 34' 19" N, 72°18' 59" W

Spanish  
18°33' 23" N, 72°17' 58" W

Russian  
18°31' 24" N, 72°15' 10" W

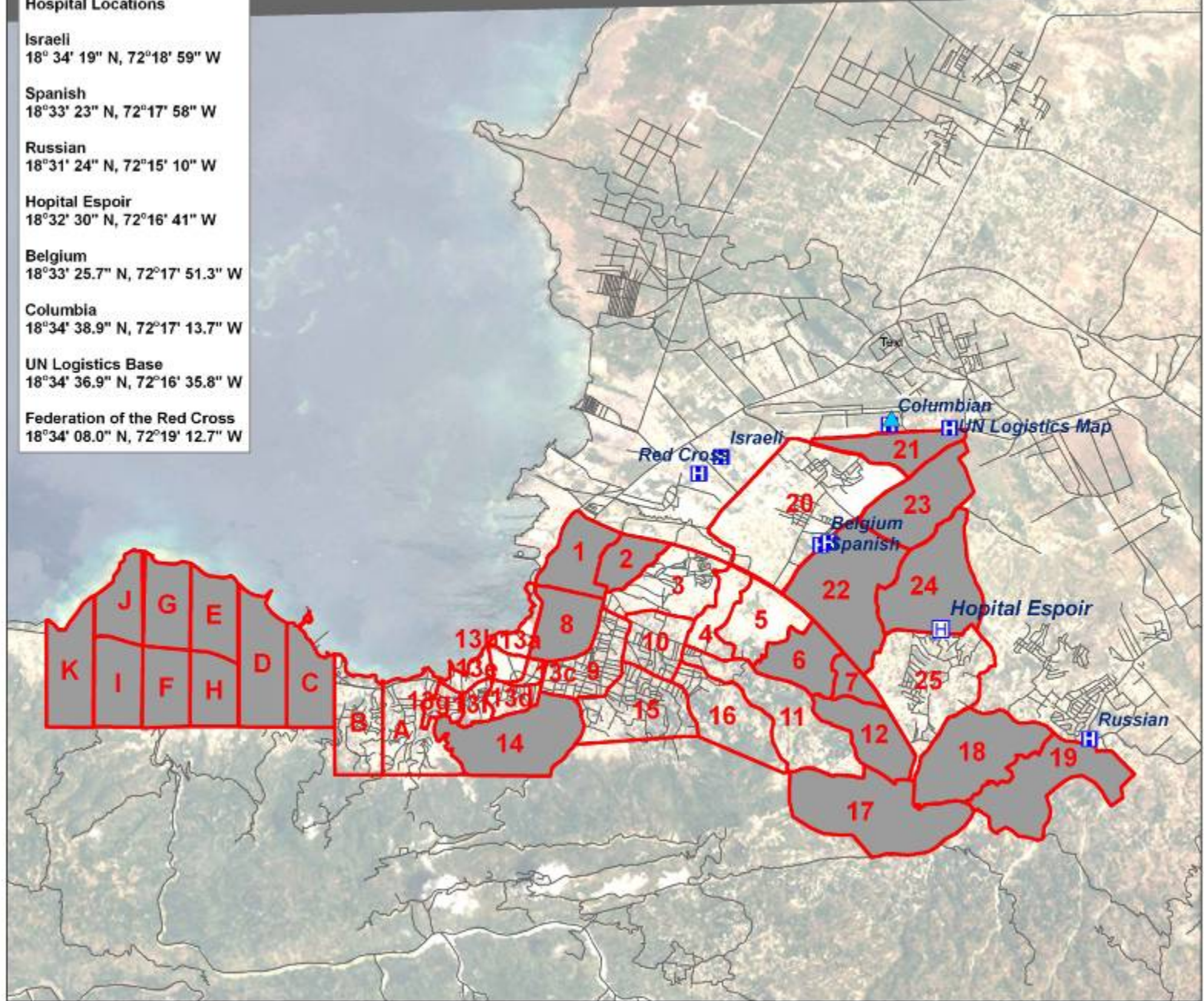
Hopital Espoir  
18°32' 30" N, 72°16' 41" W

Belgium  
18°33' 25.7" N, 72°17' 51.3" W

Columbia  
18°34' 38.9" N, 72°17' 13.7" W



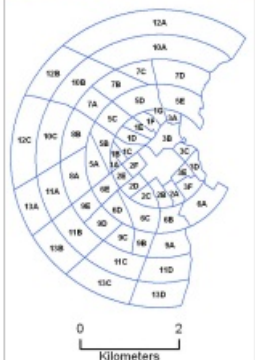
UN Logistics Base  
18°34' 36.9" N, 72°16' 35.8" W

Federation of the Red Cross  
18°34' 08.0" N, 72°19' 12.7" W



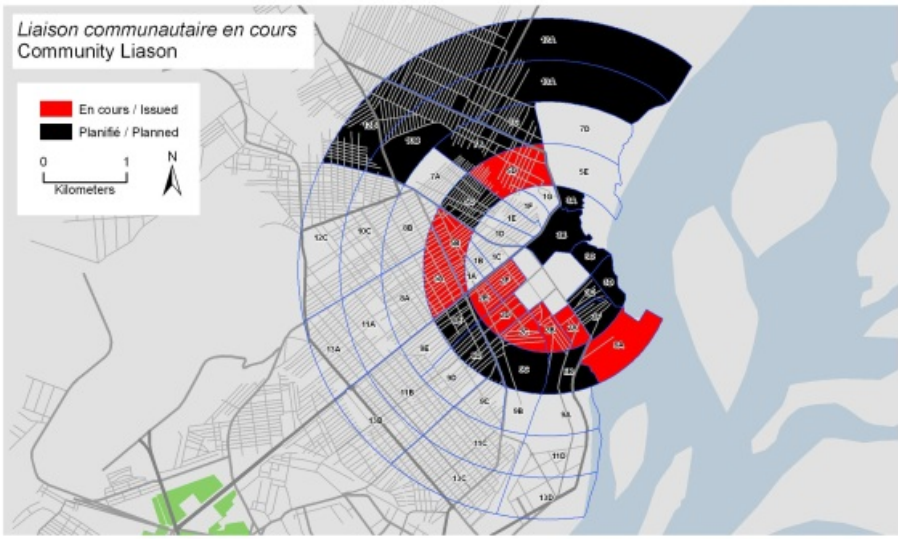
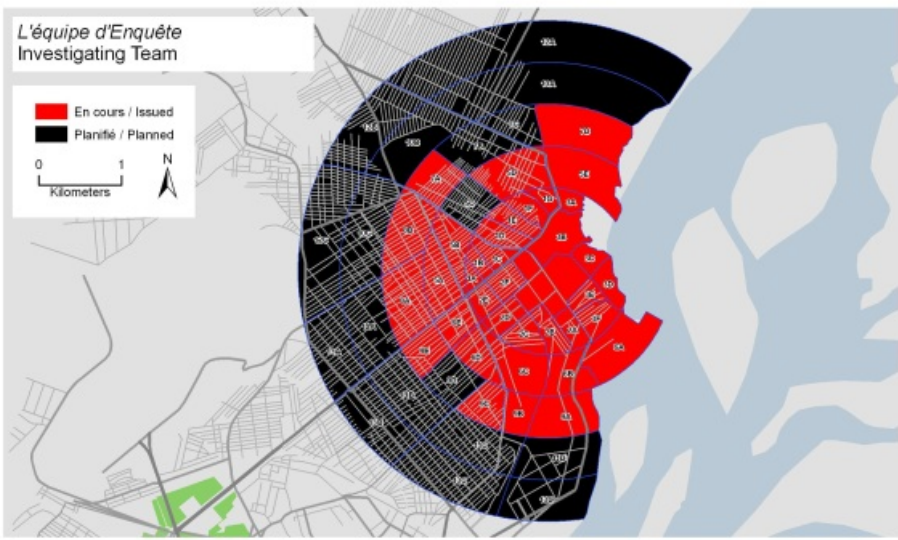




Nombre total de secteurs  
Total Sub-sectors : 13

Nombre total de secteurs sous  
Total Sub-sectors : 55



Sous-secteur Sub Sector	Enquête organisation Investigating Team	Liaison communautaire en cours Community Liason
01A	HI	
01B	HI	
01C	HI	
01D	HI	
01E	ICRC	
01F	ICRC	
01G	ICRC	
02A	HI	MAG
02B	HI	MAG
02C	HI	MAG
02D	HI	MAG
02E	HI	MAG
02F	HI	MAG
03A	HI	MAG
03B	Ang. Mil.	MAG
03C	HI	MAG
03D	HI	MAG
03E	HI	MAG
03F	Demeter	MAG
04 Impact Zone	Fra. Mil. & MAG	
05A	HI	MAG
05B	HI	MAG
05C	ICRC	ICRC
05D	ICRC	ICRC
05E	ICRC	
06A	Demeter	MAG
06B	Demeter	MAG
06C	HI	MAG
06D	HI	MAG
06E	WRA	MAG
07A	Ang. Mil.	
07B	ICRC	ICRC
07C	ICRC	ICRC
07D	ICRC	
08A	WRA	
08B	WRA	
09A	Demeter	
09B	HI	
09C	HI	
09D	HI	
09E	WRA	
10A	ICRC	ICRC
10B	ICRC	ICRC
10C	WRA	
11A	WRA	
11B	HI	
11C	HI	
11D	Demeter	
12A	ICRC	ICRC
12B	ICRC	ICRC
12C	WRA	
13A	WRA	
13B	HI	
13C	HI	
13D	Demeter	

**Congo:**  
**Brazzaville Munitions Depot Explosion -**  
**Allocation of Sub-Sectors by Organisation**  
**(as of 24 Mar 2012)**

Maps shows the distribution allocation of teams to each sub-sector. Top map shows initial investigating team. Map below shows team issued or planned to carry out community liason work. Table also shows allocation by sub-sector.

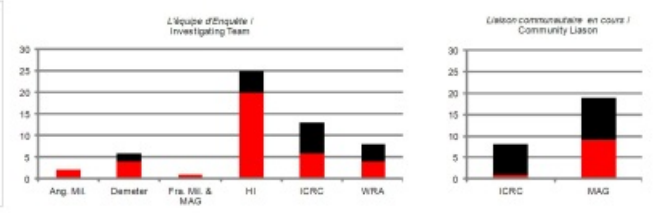
**Data sources**  
 Situational data: United Nations Mine Action Team, Demining teamd (MAG, Handicap International, Demeter, ICRC, French, FAC), MapAction

Created: 26 Mar 2012 / 11:00  
 Map document: MA054\_T01C00P00\_A3SubSector Allocation20120324.mxd  
 Projection/ Datum: UTM Zone 33 South/ WGS84  
 GLIDE Number: AC-2012-000035-COG

The depiction and use of boundaries, names and associated data shown here do not imply endorsement or acceptance by MapAction.

MapAction is grateful for the support of: 

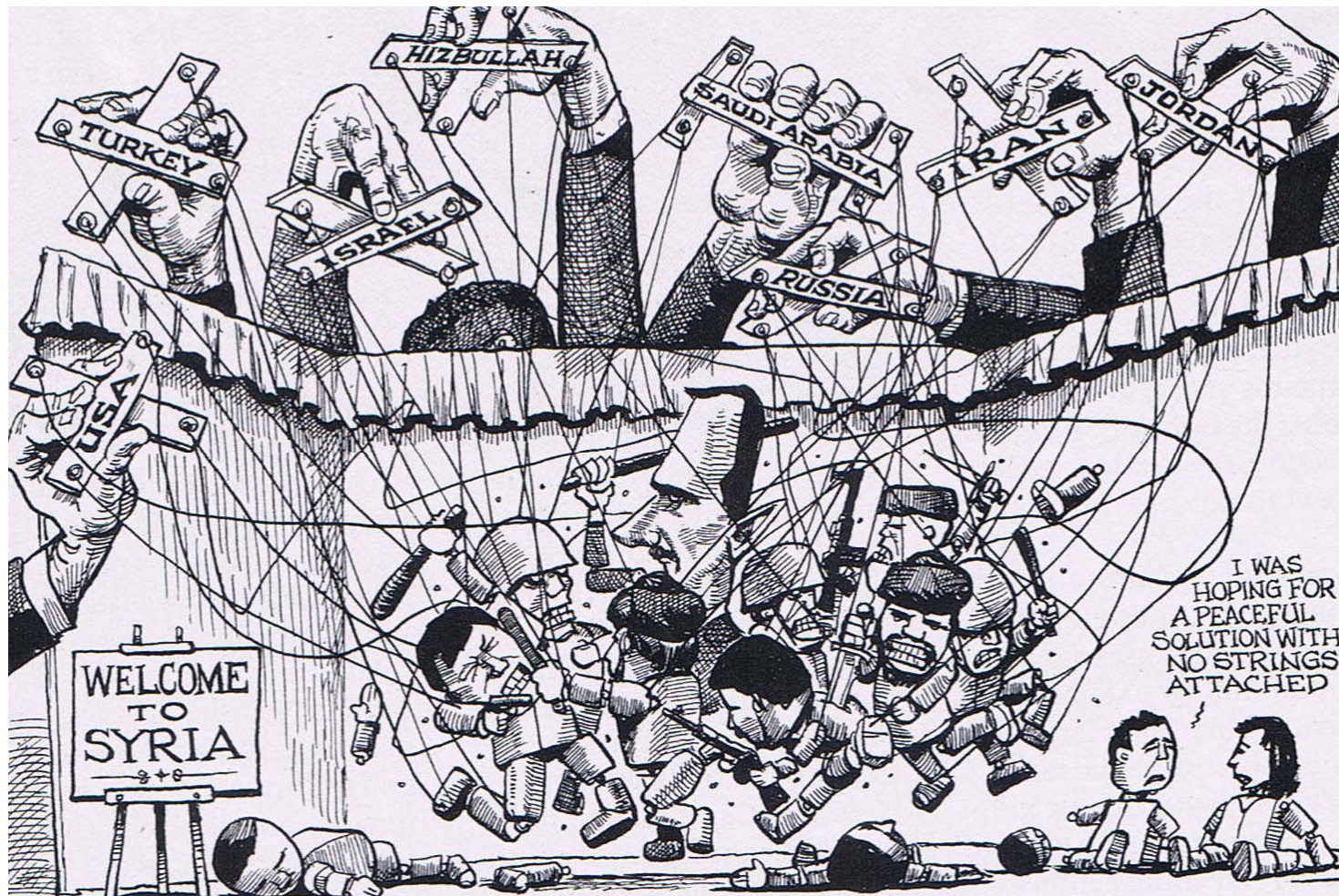
Produced by MapAction [www.mapaction.org](http://www.mapaction.org)  
 brazzaville@mapaction.org





**Libyan Refugees 2011**

# Syria – a cartoon from The Economist newspaper



# Output – Examples of products

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## **Products created to meet requirements on the ground**

- Typically 40 - 60 different products during a deployment

## **Delivered**

- In hard copy
- Over local networks
- Over the internet – see [www.mapaction.org](http://www.mapaction.org)

## **Updated frequently**



# Pakistan: population estimates (2009) and average household size (1998), by District

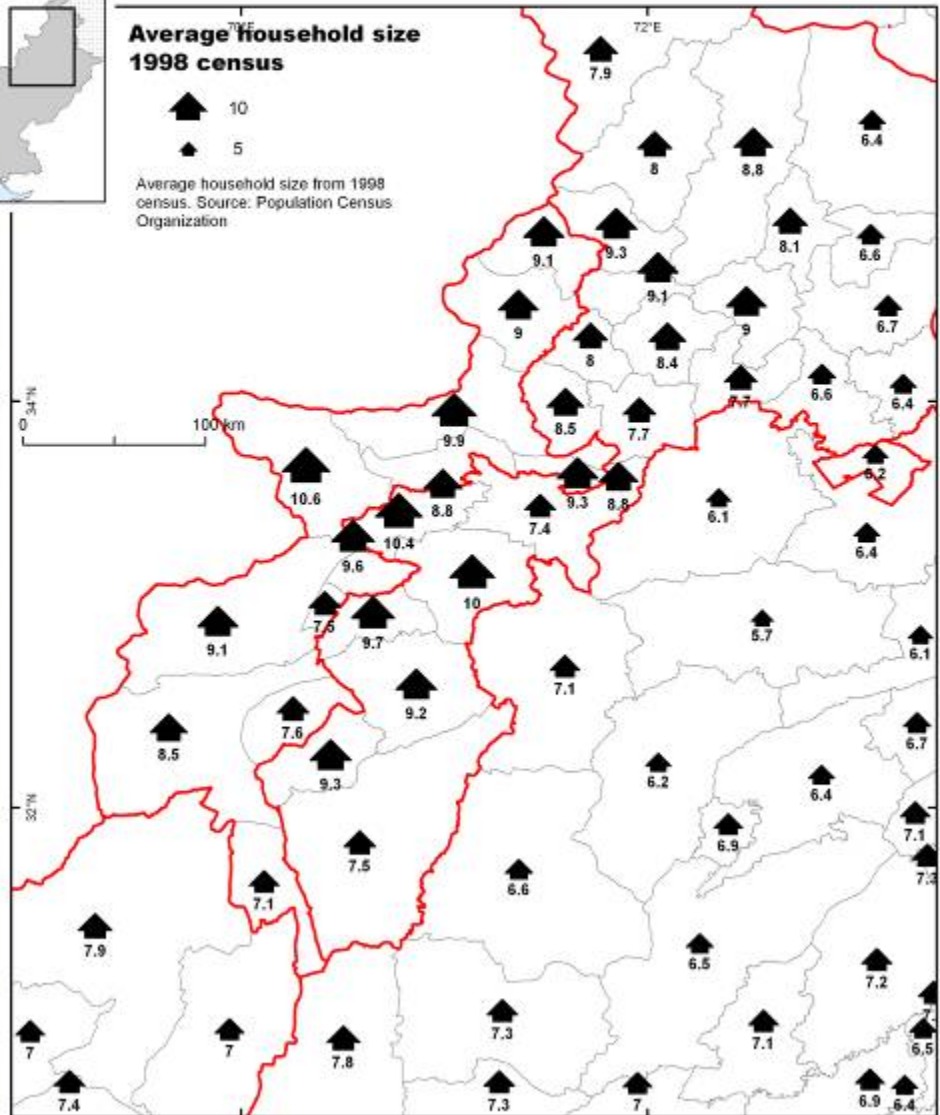
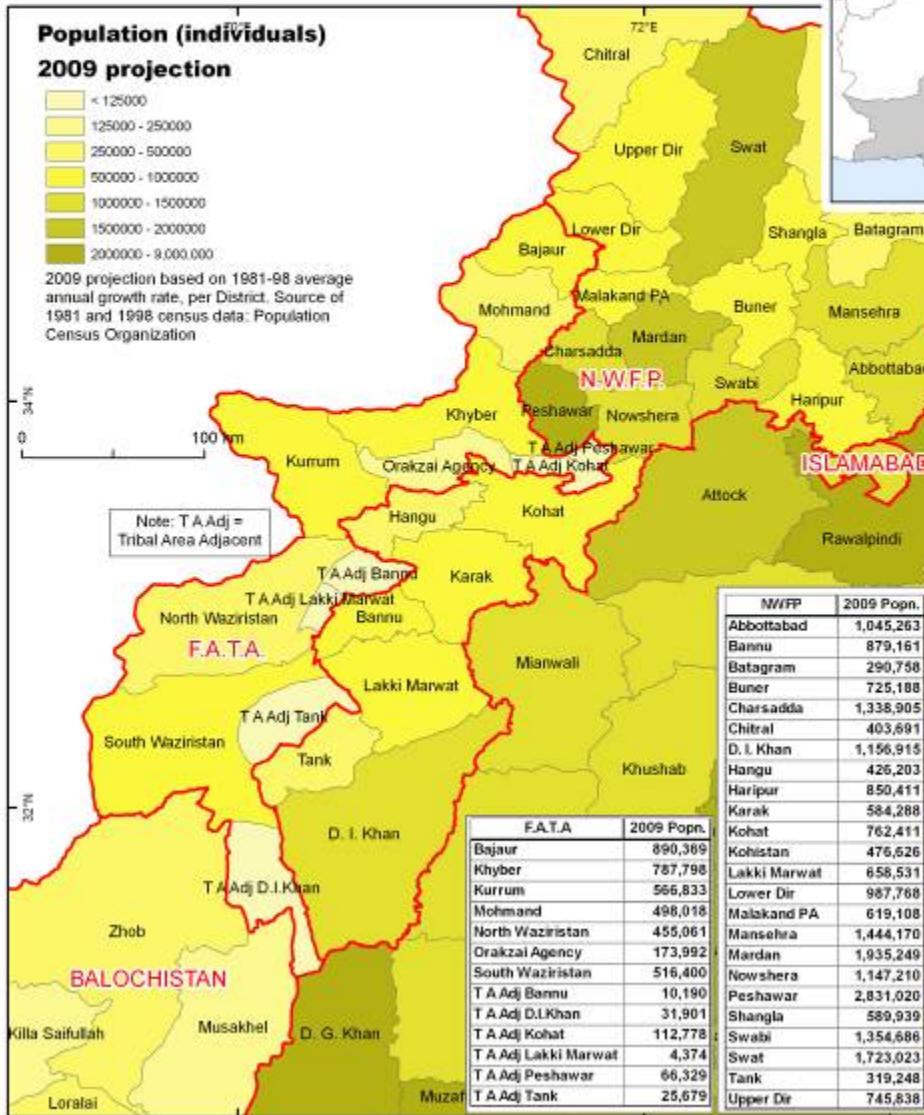
Produced 29 Jun 2009 / 10:00

By MapAction  
www.mapaction.org  
pakistan2@mapaction.org  
Map ref. MAS15-PAK-PopnAndHHByDistrict-A3-v03



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MapAction





**Philippines:  
Typhoon Pepeng -  
Affected Population  
(as of 12 Oct 2009,  
NDCC Sit Rep 23)**

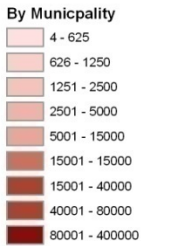
Map shows the number of affected individuals, by City or Municipality, as at 06 Oct 2009 0600hr, assessed by NDCC (in Pepeng Sit Rep 09). The map focuses on the area affected by Pepeng, though for comparison the individuals affected by TS Ondoy/Ketsana are also shown (See also MA045 for Ondoy). White space means "no report" and not "none affected".

Best printed at A3 size

Created	12 Oct 2009 / 19:10
Map document	MA048-PHL-PEP-A&P-pg-12/02/2009-0900-A3-v3
Projection / datum	UTM Zone 51N / Luzon 1911
GLIDE Number	TC-2009-000214-PHL

The depiction and use of boundaries, names and associated data shown here do not imply endorsement or acceptance by MapAction or the United Nations.

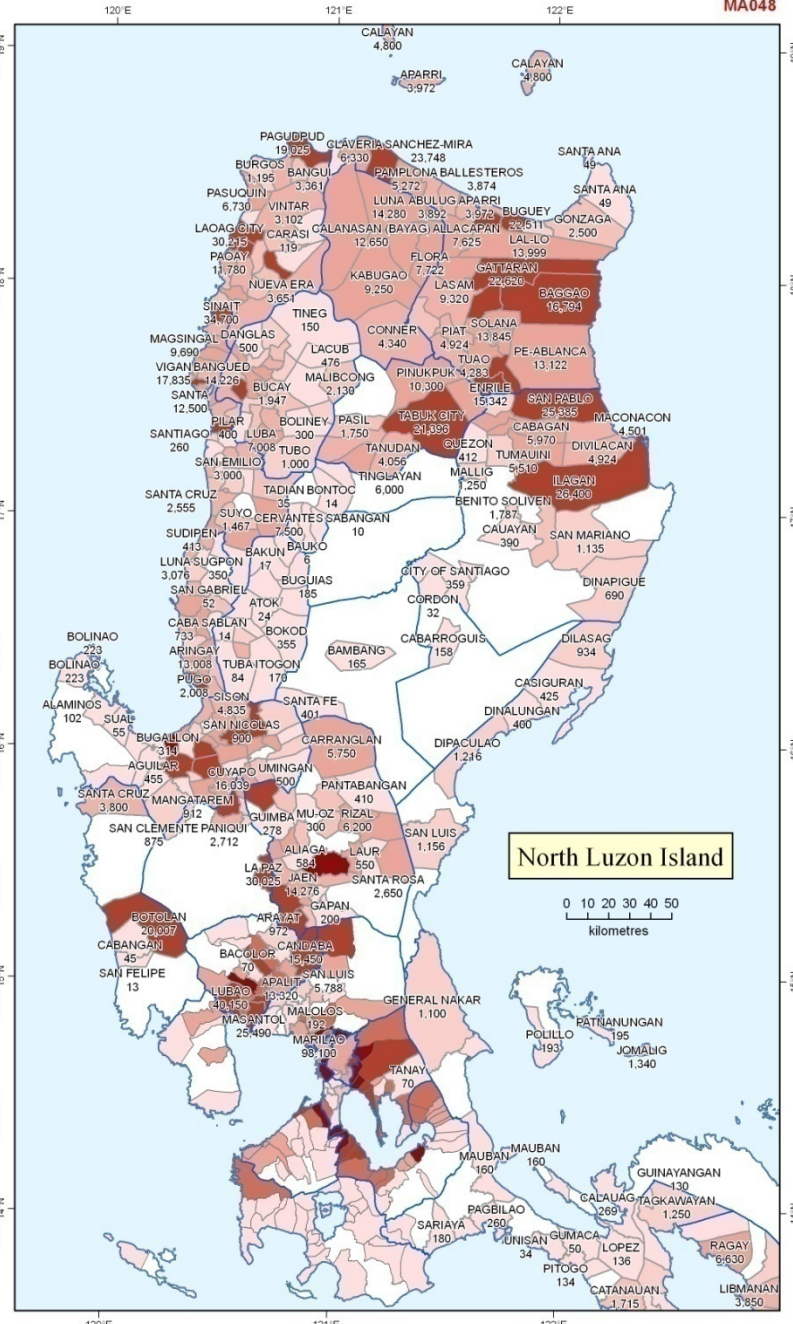
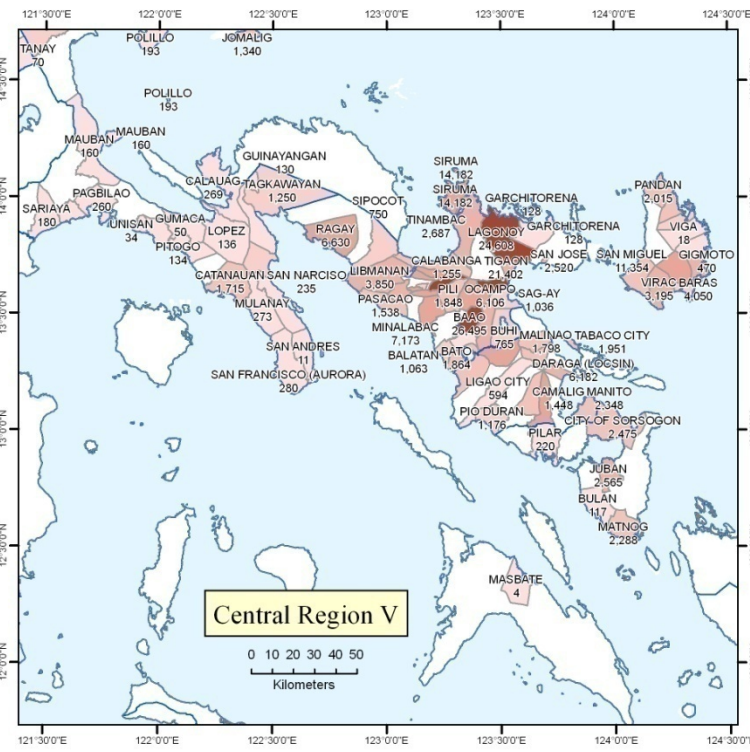
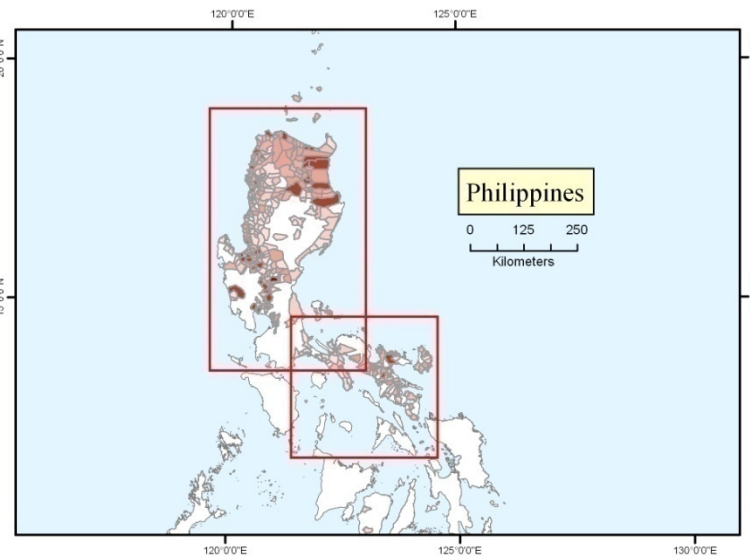
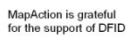
**Affected Individuals  
By Municipality**



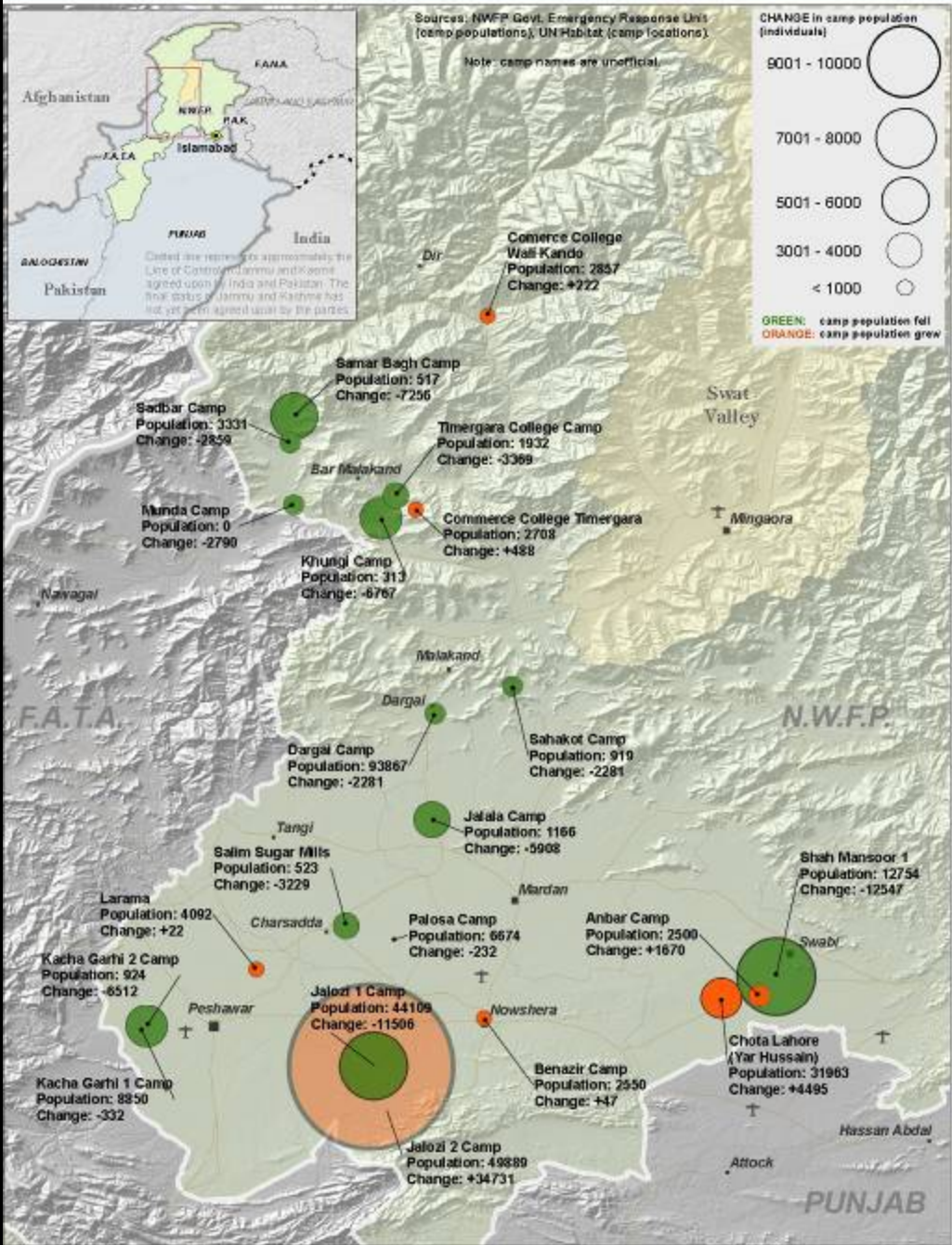
Data sources:  
National Disaster Coordinating Council – Affected Population and Flash Appeal Information

GeoData Municipality and Province boundary data was kindly provided by GeoData ([www.geodata.com.ph](http://www.geodata.com.ph)) for humanitarian purposes.

Produced by MapAction [www.mapaction.org](http://www.mapaction.org)  
philippines@mapaction.org

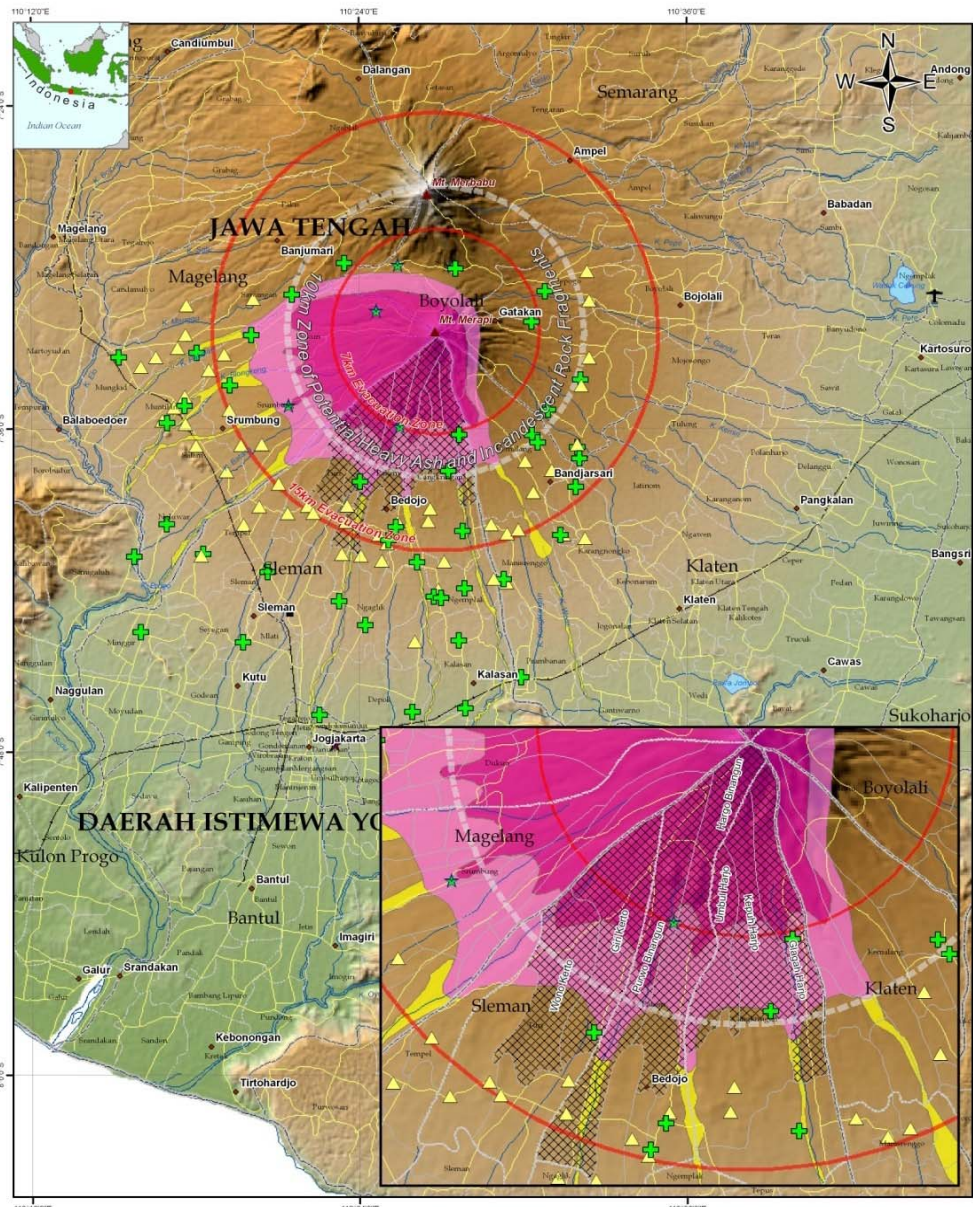


# Affected population



Population movements





**MapAction**  
MapAction is grateful to the support of the Indonesian Government

### Evacuated Villages around Mt. Merapi

- KAWASAN RAWAN BENCANA I/HAZARD ZONE I
- KAWASAN RAWAN BENCANA II/HAZARD ZONE II
- KAWASAN RAWAN BENCANA III/HAZARD ZONE III

Elevation (m ASL)

0
100
200
500
1000
2000
3000
4000
5000
6000

Created: 11-Jun-2006 15:10hrs  
Map Doc Name: wa\_mer\_m030\_a3p\_v03  
Projection Datum: UTM Zone 48S/WGS84  
GLIDE Number: EQ-2006-00004-1EN

**Legend**


0 5 10 20 Kms

Nominal Scale 1:350,000 at A3 size

Disclaimer: The depiction and use of boundaries, geographic names and related data shown here does not necessarily imply official endorsement or acceptance by MapAction or the UN.

Data Sources: Populated places: VNP; Roads, Administrative areas, Hydrology, Indonesian Government & UNCRIC; Railway, NGA (VMAP); Elevation data: SRTM (via CGIAR-CSI) via NASA/USGS; Evacuated villages, VNC; Information on Hazard areas for Mt. Merapi by kind permission of Centre of Volcanology and Geologic Hazard Mitigation - volcanology Survey Indonesia.

MapAction Operations Team  
Email: mapaction.java@gmail.com; Website: <http://www.mapaction.org>

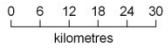
# Evacuation planning



MapAction

**El Salvador :  
Huracán Ida Y Sistema de  
Baja Presión frente a las  
costas salvadoreñas**

Mapa que muestra las inundaciones  
y deslizamientos que se extendieron  
en la zona de San Vicente y el volcán  
de San Vicente o Chihnhontepec



Created 16 Nov 2009 / 15:00  
Map document MA013-slV-LsdFloods-A3-v01  
Projection / datum Geographic / WGS84  
GLIDE Number FL-2009-000238-SLV

The depiction and use of boundaries, names and associated data shown here do not imply endorsement or acceptance by MapAction.

**Leyenda**

**Daños**

- Deslizamiento
- Inundacion

**Carretera**

**TIPO**

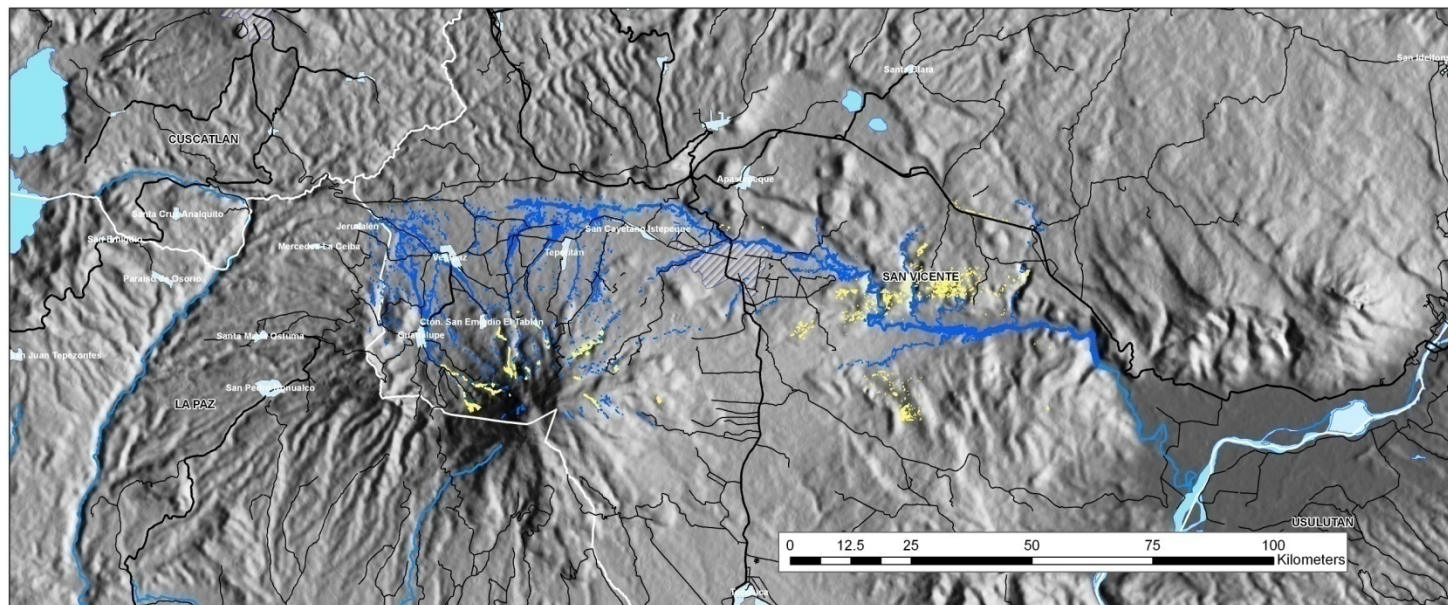
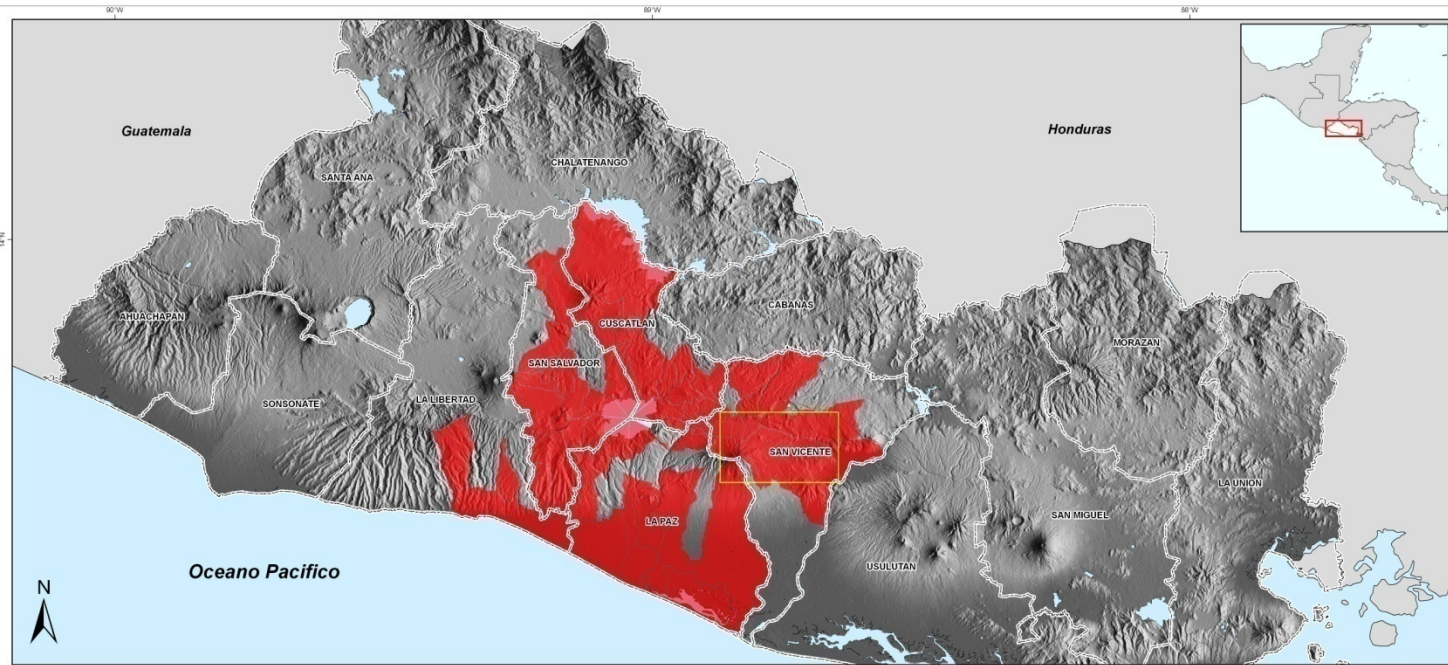
- Primaria
- Secundaria



**Data sources:**  
Elevacion: SNET  
Limitas Administrative: CNR  
Inundacione datos: Cathalac

Produced by MapAction [www.mapaction.org](http://www.mapaction.org)  
[elsalvador@mapaction.org](mailto:elsalvador@mapaction.org)

MapAction is grateful  
for the support of DFID



# Damage extent and hazards

# Who-What-Where (3W)

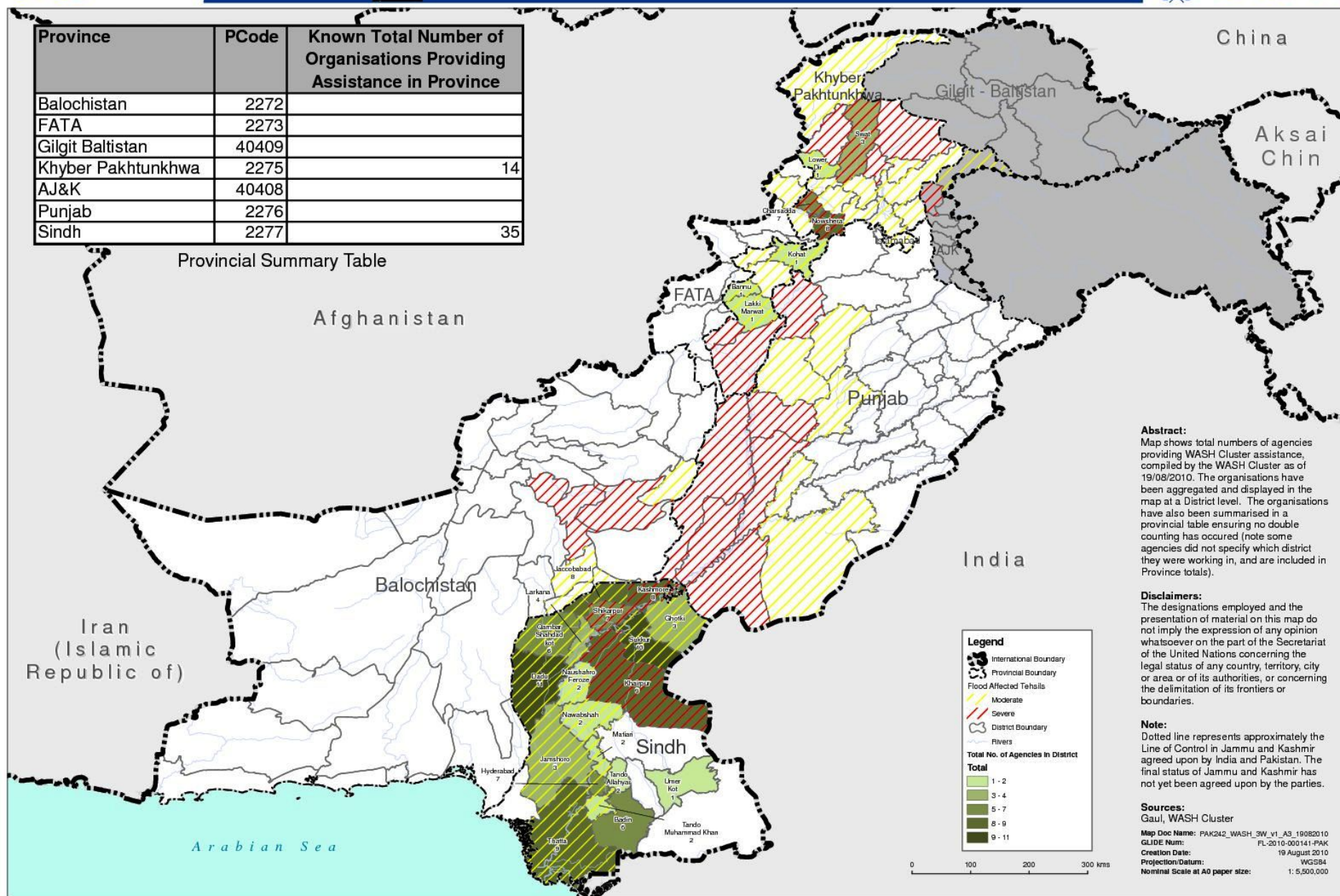


Pakistan WASH Cluster - Who, What, Where



Province	PCode	Known Total Number of Organisations Providing Assistance in Province
Balochistan	2272	
FATA	2273	
Gilgit Baltistan	40409	
Khyber Pakhtunkhwa	2275	14
AJ&K	40408	
Punjab	2276	
Sindh	2277	35

Provincial Summary Table



**Abstract:**  
Map shows total numbers of agencies providing WASH Cluster assistance, compiled by the WASH Cluster as of 19/08/2010. The organisations have been aggregated and displayed in the map at a District level. The organisations have also been summarised in a provincial table ensuring no double counting has occurred (note some agencies did not specify which district they were working in, and are included in Province totals).

**Disclaimers:**  
The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

**Note:**  
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

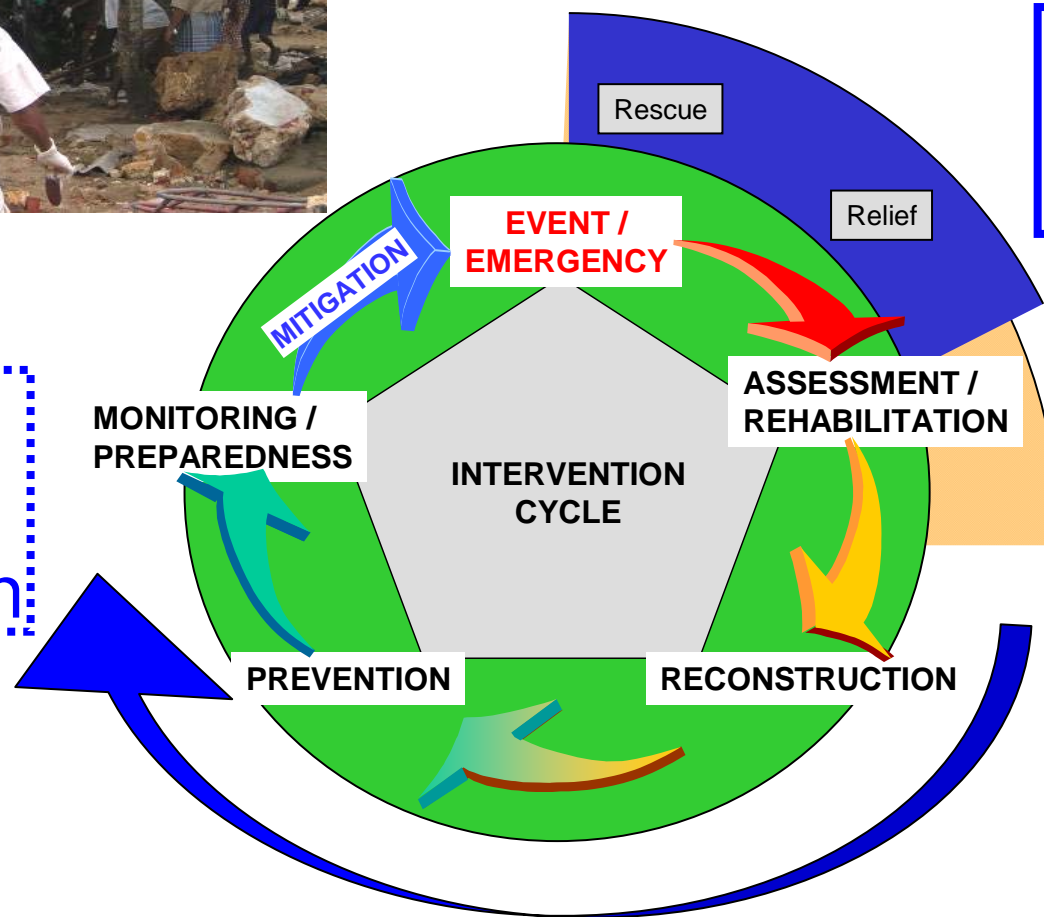
**Sources:**  
Gaul, WASH Cluster

Map Doc Name: PAK242\_WASH\_3W\_v1\_A3\_19082010  
 GLIDE Num: FL-2010-000141-PAK  
 Creation Date: 19 August 2010  
 Projection/Datum: WGS84  
 Nominal Scale at A0 paper size: 1: 5,500,000

# The disaster intervention cycle



Disaster  
Risk  
Reduction



Disaster  
Response

# Training humanitarian professionals

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- **UNDAC courses**
- **International Red Cross FACT courses**
- **NGOs (Oxfam, Save the Children, RedR)**
- **EU civil protection courses**
- **Humanitarian Mapping courses**



# Short capacity-building products

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- Lesotho -- food security and development programme mapping (2003 & 2007)
- India – training (2003 & 2004)
- Liberia – training (2006)
- Tajikistan – disaster preparedness training (2005 & 2006)
- Mozambique – disaster preparedness training (two missions in 2007)
- Malawi – disaster preparedness training (two missions in 2008)
- Landmine action support – Angola, Iraq and Sri Lanka (2008 and 2009)
- Papua New Guinea – disaster risk assessments and training (2009)
- Kenya – flood risk analysis and training (2009 and 2010)
- Niger – flood risk analysis and training (2009)
- Nepal – data preparedness (2010)
- Zambia – data preparedness (2012)



**Data preparedness**

**2010**

**Kathmandu Valley**

**2011/12**

**Zambesi**

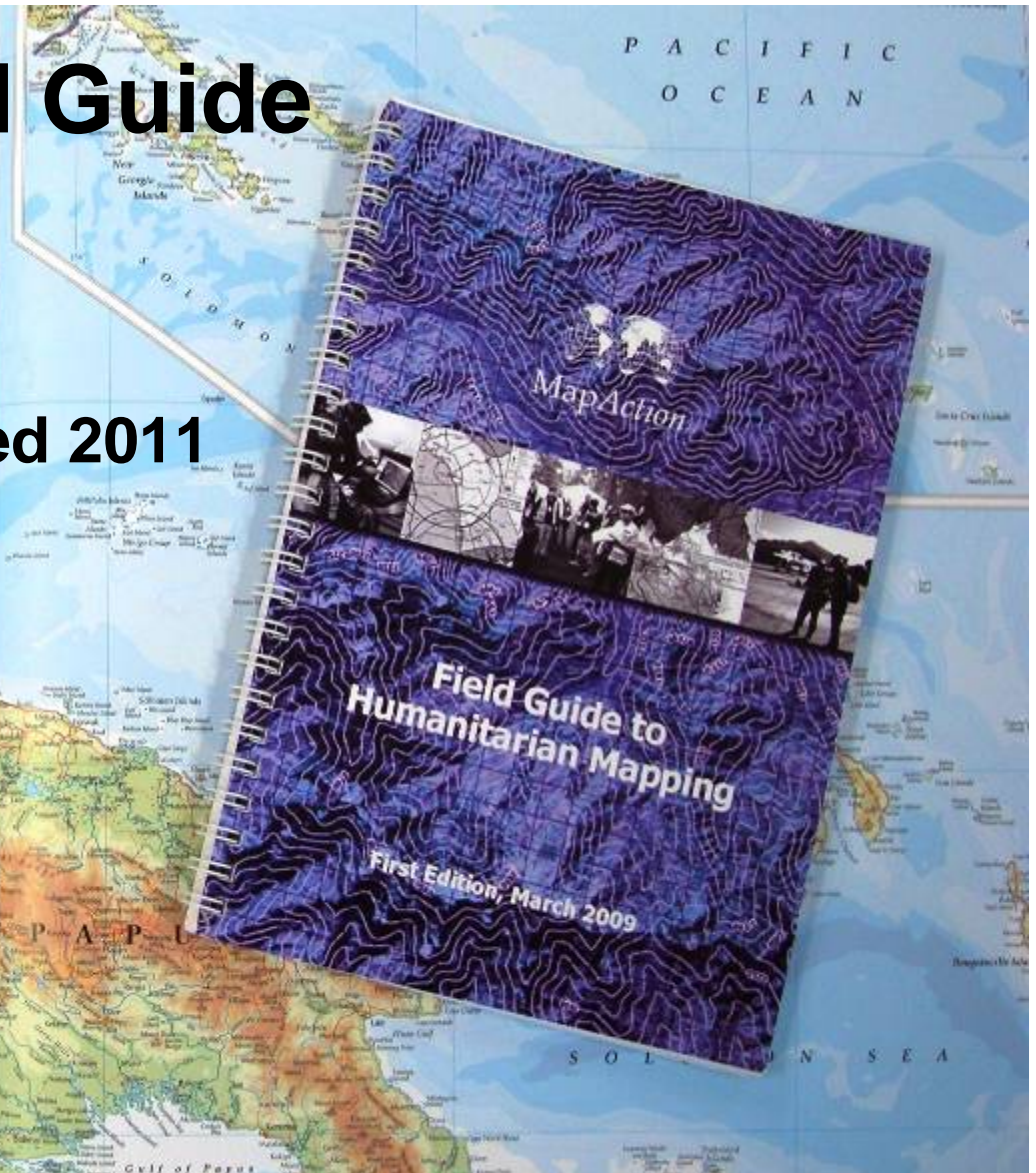
**2013**

**Caribbean**

# Researching and disseminating new methods

## MapAction Field Guide to Humanitarian Mapping

Second edition published 2011





# MapAction and the UN

## – Sudden Onset Disasters

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- **MapAction deployments are usually at the request of UN OCHA in conjunction with the UN Disaster Assessment and Coordination (UNDAC) teams**
- **In the field MapAction teams:**
  - normally work within the UN On-Site Operations Coordination Centre (OSOCC)
  - provide support to other UN agencies as required
- **MapAction does not receive payment from UN sources for sudden onset disaster support.**

# MapAction and the UN

## – Complex Emergencies

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- **Ad hoc arrangements on a case by case basis with OCHA or other UN Agencies including:**
  - Some unfunded deployments to address specific short term problems
  - Some longer term contract deployments eg in Lebanon for the Syria crisis funded in that case by UK DfID
- **One pilot standby arrangement with UNICEF which will fund deployment costs**

# MapAction Funding

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## **Costs**

- Currently c. USD 560,000 per annum (3.4M CNY)
- This includes the full cost of sudden onset disaster deployments plus all overheads.

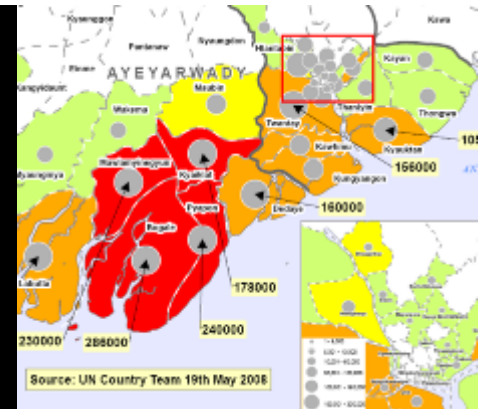
## **Income**

- Currently a 3 year grant from the UK DfID of c. USD 200,000 per annum (1.2M CNY)
- Remainder from corporate and trust fundraising and occasional mission specific contracts

# What the United Nations says:

**“MapAction’s maps are in every UN, NGO and donor office. They have informed our decision making and proved essential to the planning of the humanitarian response.”**

**Daniel Baker, UN Humanitarian Coordinator for Myanmar**



**“I witnessed outstanding teamwork, cooperation, and willingness to go the extra mile. The performance displayed by your team in Bolivia speaks volumes of your organization’s commitment and dedication.”**

**UNDAC Team Leader, Bolivia floods deployment**



MapAction's work helps to get aid to the right place to help people in the greatest need

[www.mapaction.org](http://www.mapaction.org)

