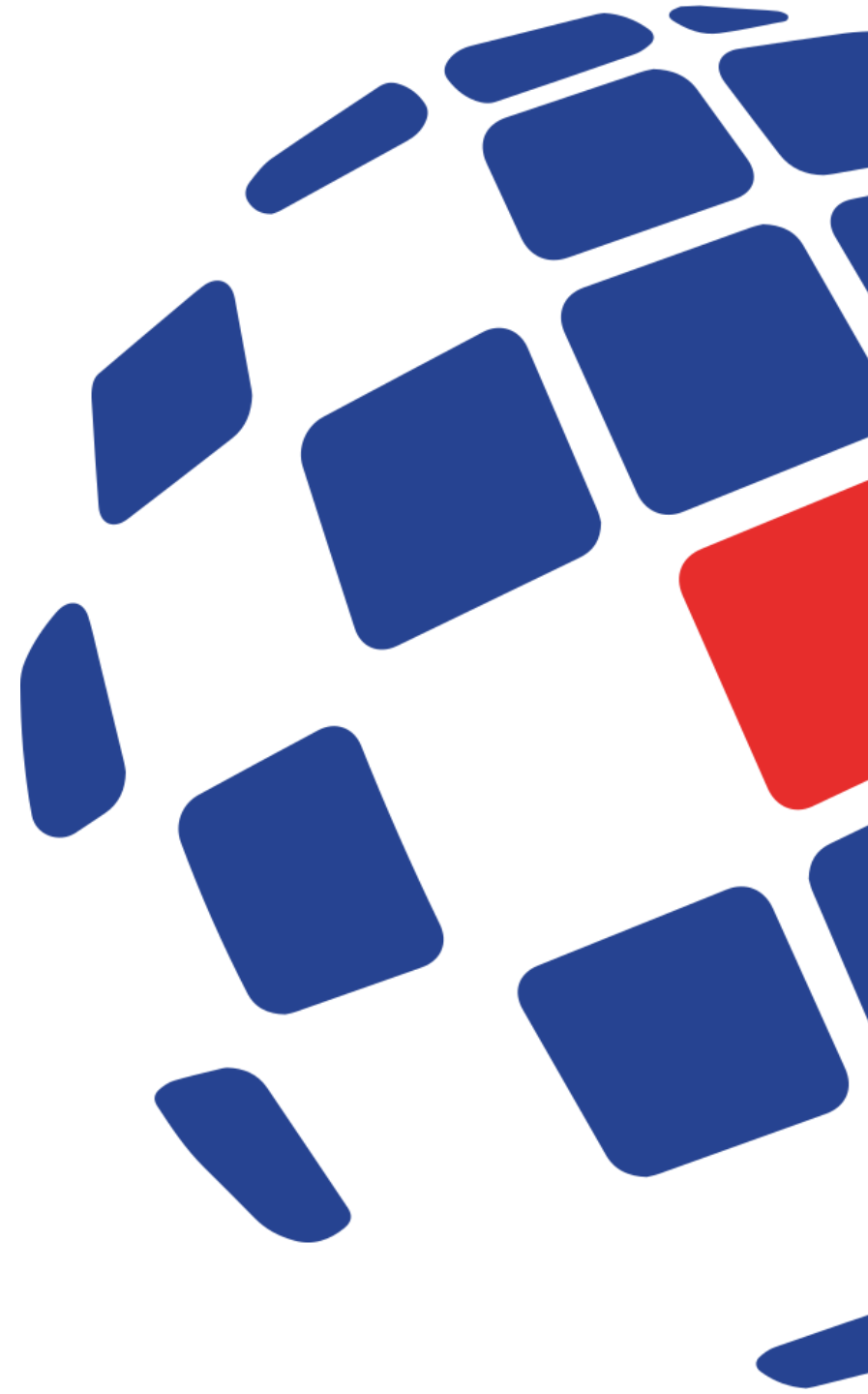




October 2023 - Barbados

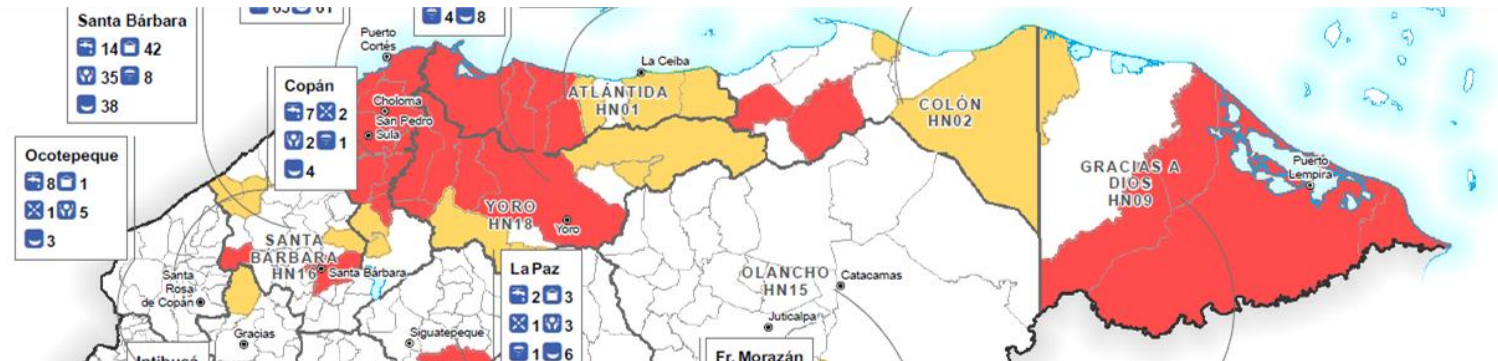
Making informed decisions in a humanitarian response

# MapAction Example Product Catalogue and Product Planning Cycle



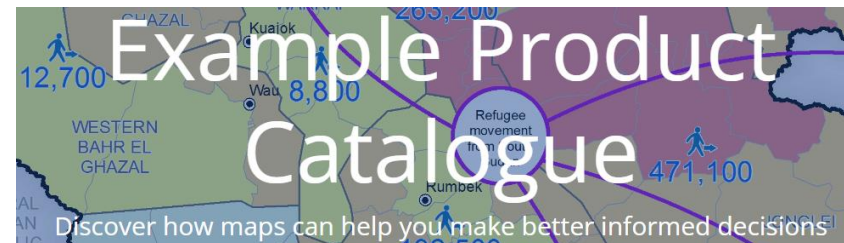
# We will cover

- Introduction to MapAction Example Product Catalogue (EPC) and EPC Map Types
- Discussion - what types of products do you need?
- Exploring the catalogue - Core Examples and searching for others
- Product Cycle - identifying how to plan the products needed at the right time, and plan the design of individual products

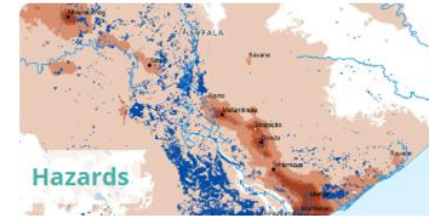


# MapAction Example Product Catalogue

- MapAction developed an Example Product Catalogue (EPC)
- Over 80 different types of map from many responses
- Each example map describes its purpose
- Shows how maps can help inform decision making
- The guide explains tips on production and data sources
- EPC guide is available online - <https://guides.mapaction.org/>



# EPC Map Types



- **CORE**

- Reference, Situational awareness, Population, Infrastructure

- **CLUSTERS**

- Education, Shelter, Food security, Health, Logistics, WASH

- **HAZARDS**

- Conflict, Environmental, Epidemics, Floods, Geological, Meteorological

# Discussion

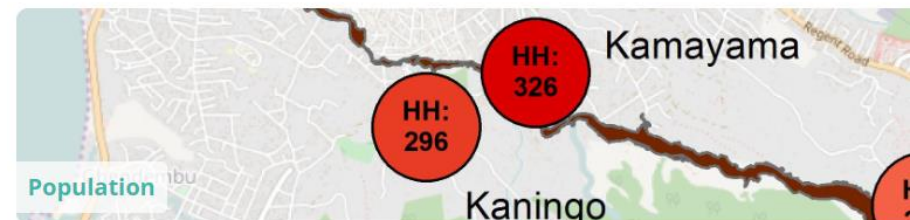
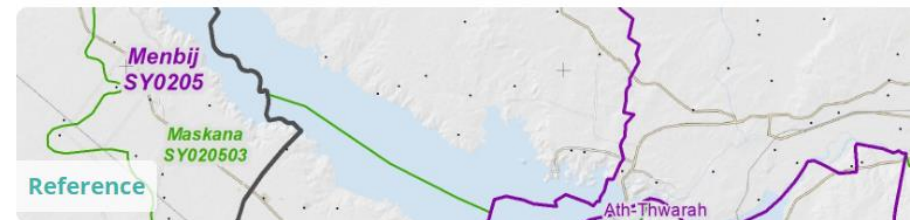
Aim: Let's make a list of maps you think you might need and define them, then look at MapAction's EPC to look at solutions and options. Identify the data and processes we might need to make them.

1. Make a list of maps
  - a. Core - ones you would always use
  - b. Disaster specific (Hazard)
  - c. Cluster/Sector Specific (e.g. Logistics, health)
2. Look through EPC slides here or EPC online to look at solutions
3. Start identifying the data needs for this.



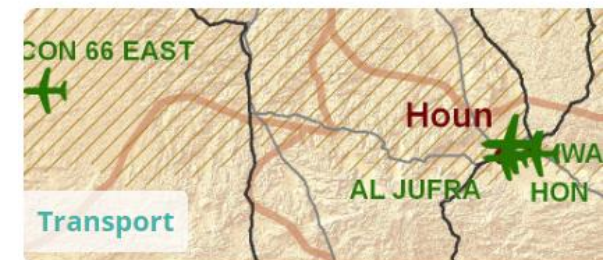
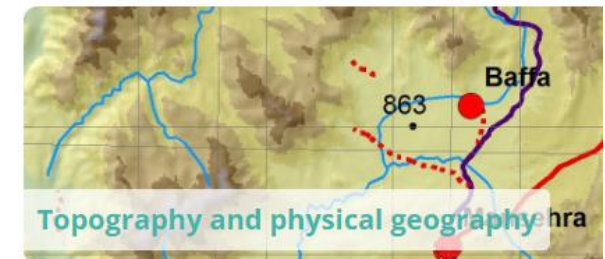
# CORE MAPS

- Reference
  - Country, Administrative, Geographic, Transport
- Situational awareness
  - Situation overview, Who-what-where
- Population
  - Baseline, Affected, Languages, Displaced
- Infrastructure
  - Critical, Humanitarian



# REFERENCE

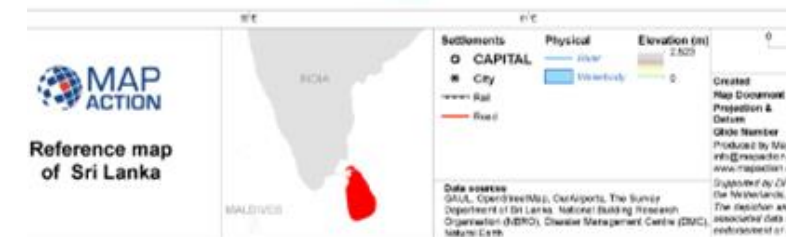
- Reference maps are fundamental products
- They can be useful in any response
- They provide context and orientation
- Simple country overview or street level maps
- There are different types:
  - Country overview
  - Administrative boundaries and p-codes
  - Topographic and physical geographic
  - Transport



# Country Overview

- Simple overview and orientation of country or region
- Provides overview: capital, cities, roads, rivers, lakes

- **Strategic or operational?** Strategic + operational
- **Basemap, baseline or situational?** Basemap
- **When might it be produced?** Early as possible
- **Intended audience:** Everyone
- **Humanitarian decisions:** For responders arriving
- **Data:** Natural Earth Data, OpenStreetMap, HDX





# Country Overview - Method

- Key features:
  - National capital
  - Other major cities
  - Roads, airports, ports
  - Significant rivers, lakes



Country overview map showing main settlements, transport links, elevation, water features and administrative boundaries

Settlement	Boundary
National capital	International
City	Province
Disputed boundary	
Transport	Physical
Seaport	Coastline
Airport	River
Railway	Lake
Primary road	Elevation (m)
	7600 -6

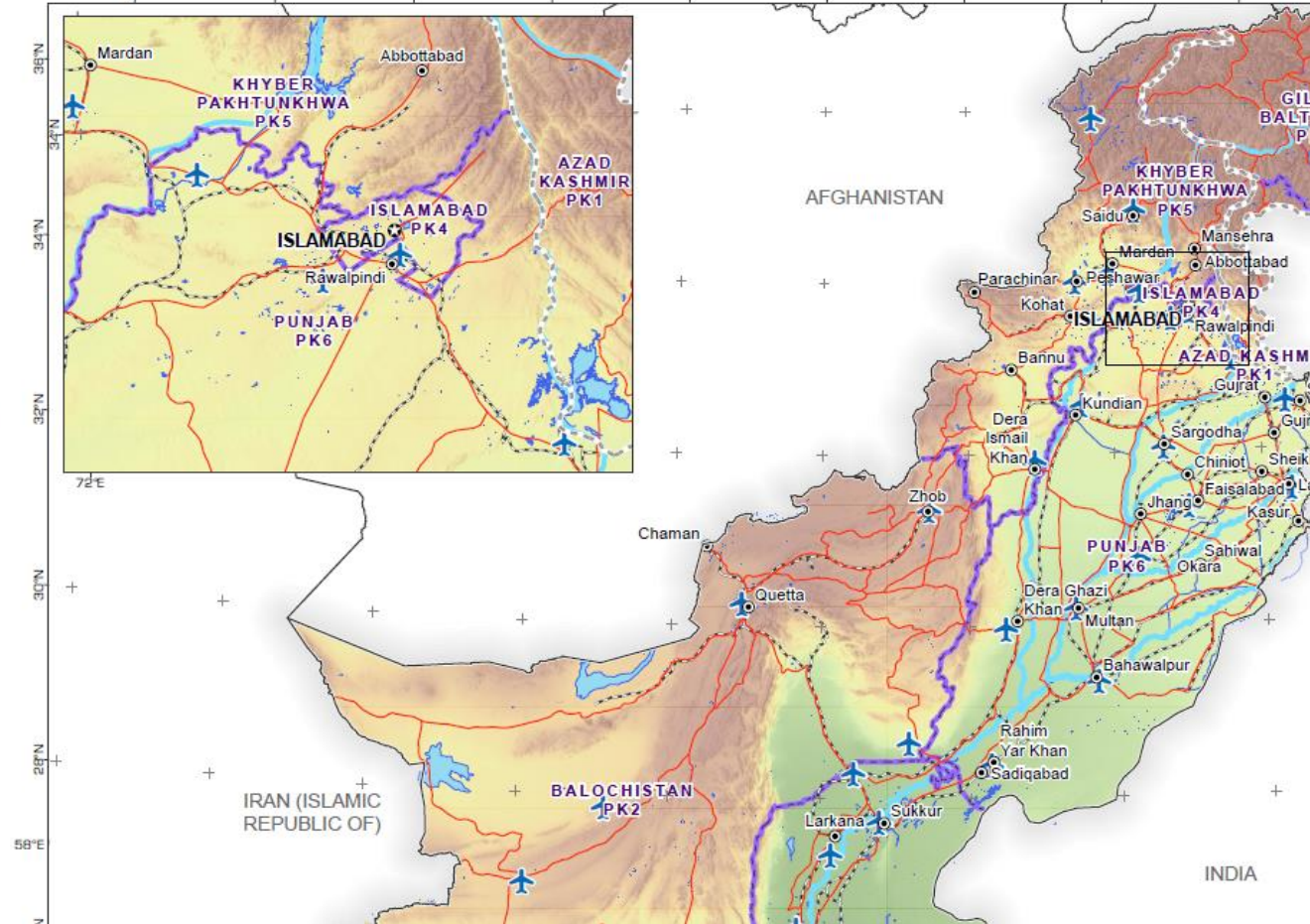


#### Data Sources

OpenStreetMap, Our Airports, World Port Index, GMTED, WFP, UN, Natural Earth

Created 11 Apr 2023 / 12:00 UTC+05:00

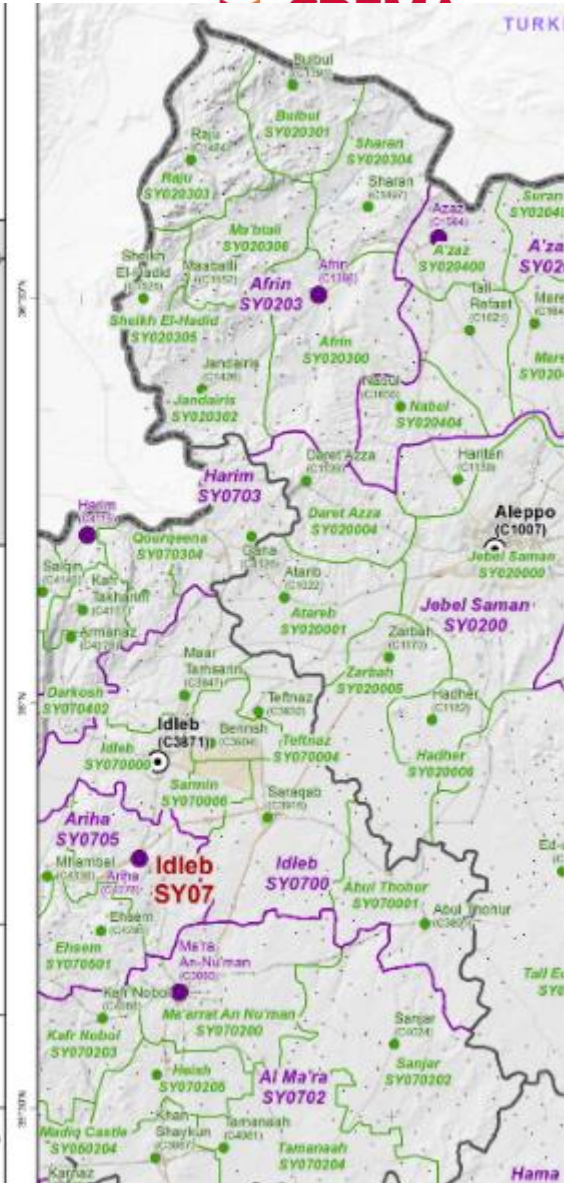
## Pakistan Country Overview



# Administrative boundaries

- Admin boundaries with p-codes (place code)
- Enables situational data to be aggregated
- Consistent framework to facilitates analysis
- Essential boundaries are standardised
- Different administration levels:
  - level 0 (country), level 1 (province, municipality)
  - level 2 (district), level 3 (city), level 4 (village)

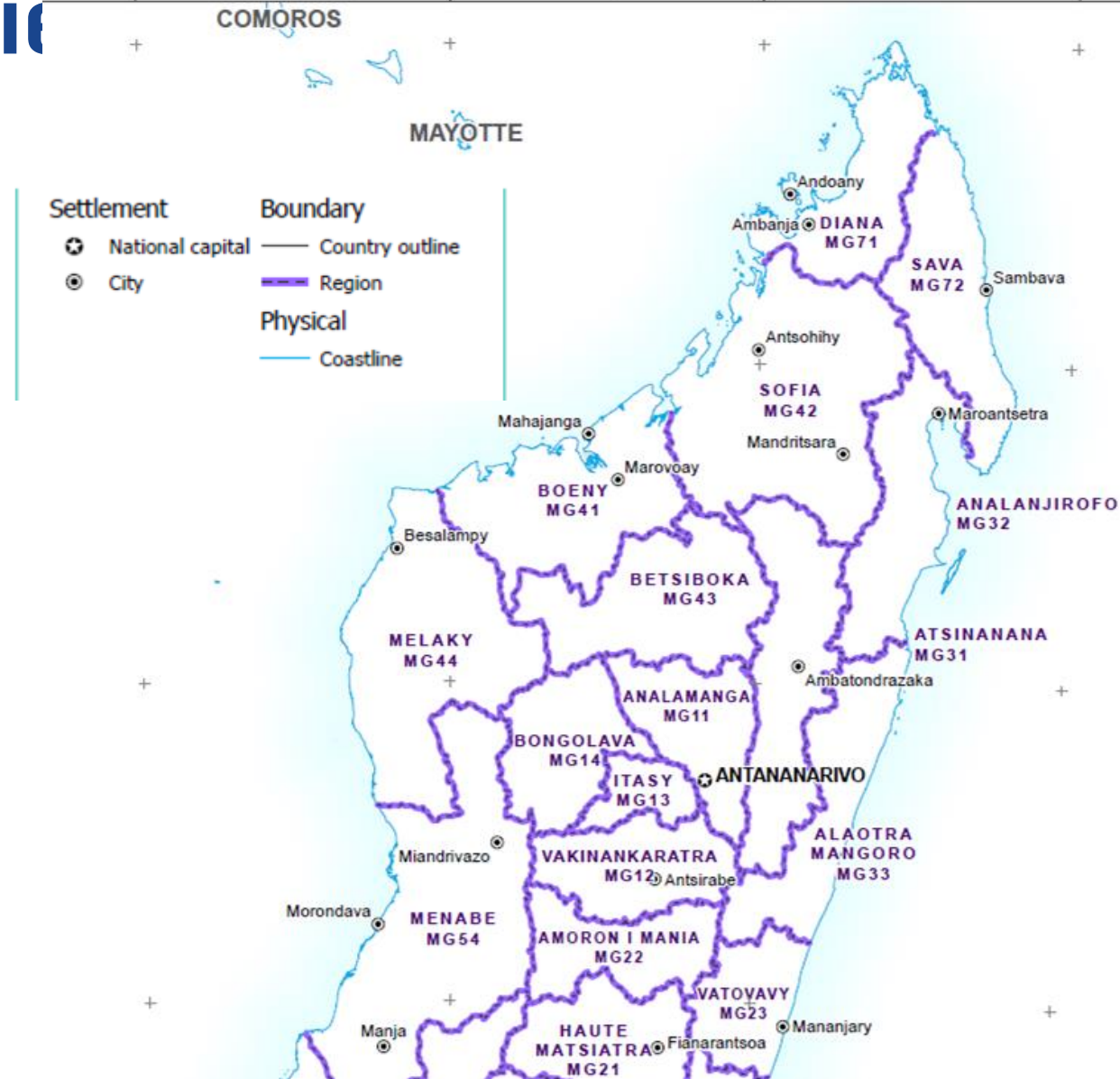
- **Strategic or operational?** Strategic + operational
- **Basemap, baseline or situational?** Basemap
- **When might it be produced?** Early as possible
- **Intended audience:** Everyone
- **Humanitarian decisions:** For responders arriving
- **Data:** GADM, GAUL, LSIB, SALB, COD, HDX





# Administrative boundaries

- Map styles:
  - Basic – black and white
  - Advanced – full colour
  - Gazetteer for settlements
- Map levels:
  - Country
  - Admin level 1
  - Admin level 2
- Use map series / atlas



# SITUATIONAL AWARENESS

- Many types of specific situational maps
- These described in other sections
- Two types of overall situational mapping:
  - Situational Overview
  - Who-What-Where (3W)

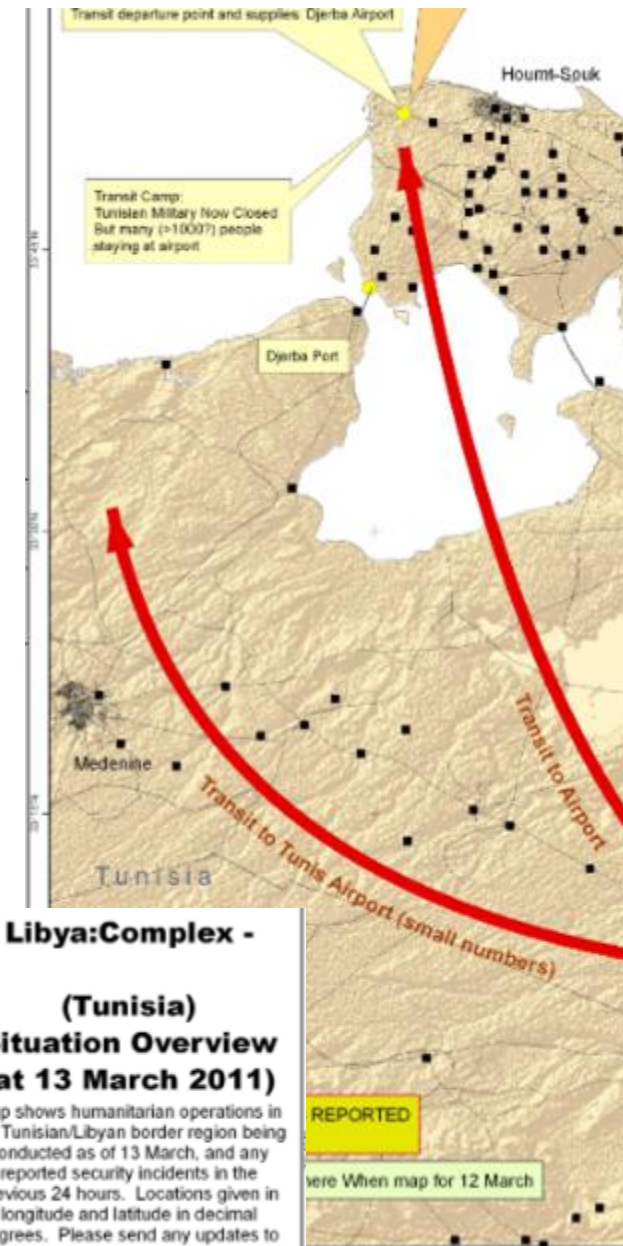




# Situational Overview

- Common operational picture - snapshot or overview
- Situation - impacts, hazards, affected people, response
- Visualisation of disaster zone for responders
- Understanding of operating environment

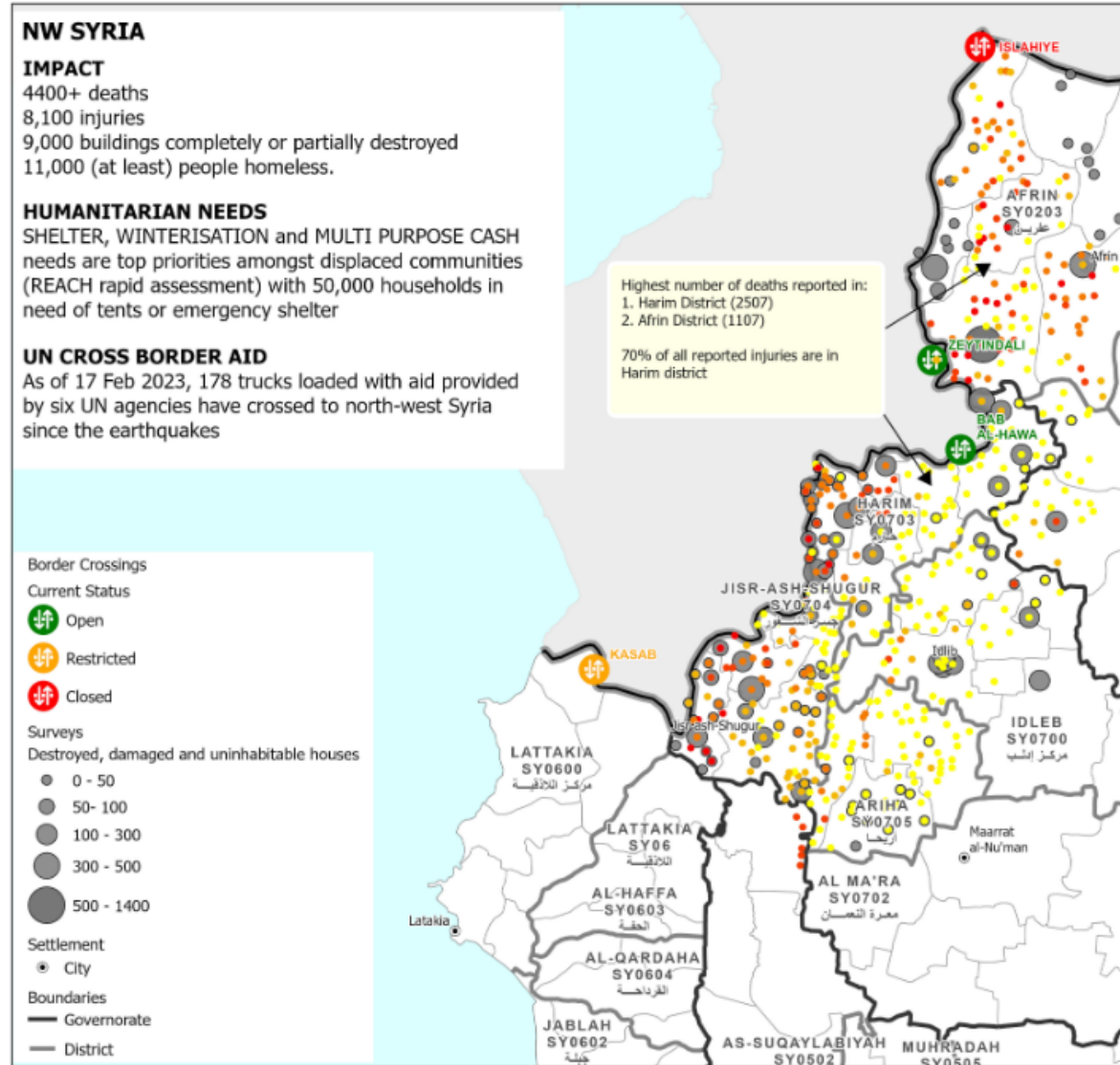
- **Strategic or operational?** Operational
- **Basemap, baseline or situational?** Situational
- **When might it be produced?** Start of emergency
- **Intended audience:** Everyone
- **Humanitarian decisions:**
  - Orgs - Gov (National or Local), UN, Clusters, NGOs
  - Roles - Rescuers, Programme Managers, funders
- **Data:** Reports (government, OCHA), assessments



# Situational Overview - Method

- Clear, simple maps about emergency
- Priority in earliest stages of disaster
- Base maps –
  - admin boundaries at appropriate level
  - relevant topographic data layers.
- Situational data –
  - Fragmentary and anecdotal
  - Use textual annotations
- ‘No data’ is not ‘no impact’
- Manage map updates

**MAP ACTION** Syrian Arab Republic: Earthquake  
Situation overview as of 17th Feb 2023



Data Sources: OSM, NaturalEarth, UNOCHA, Esri, USGS, REACH, ACU



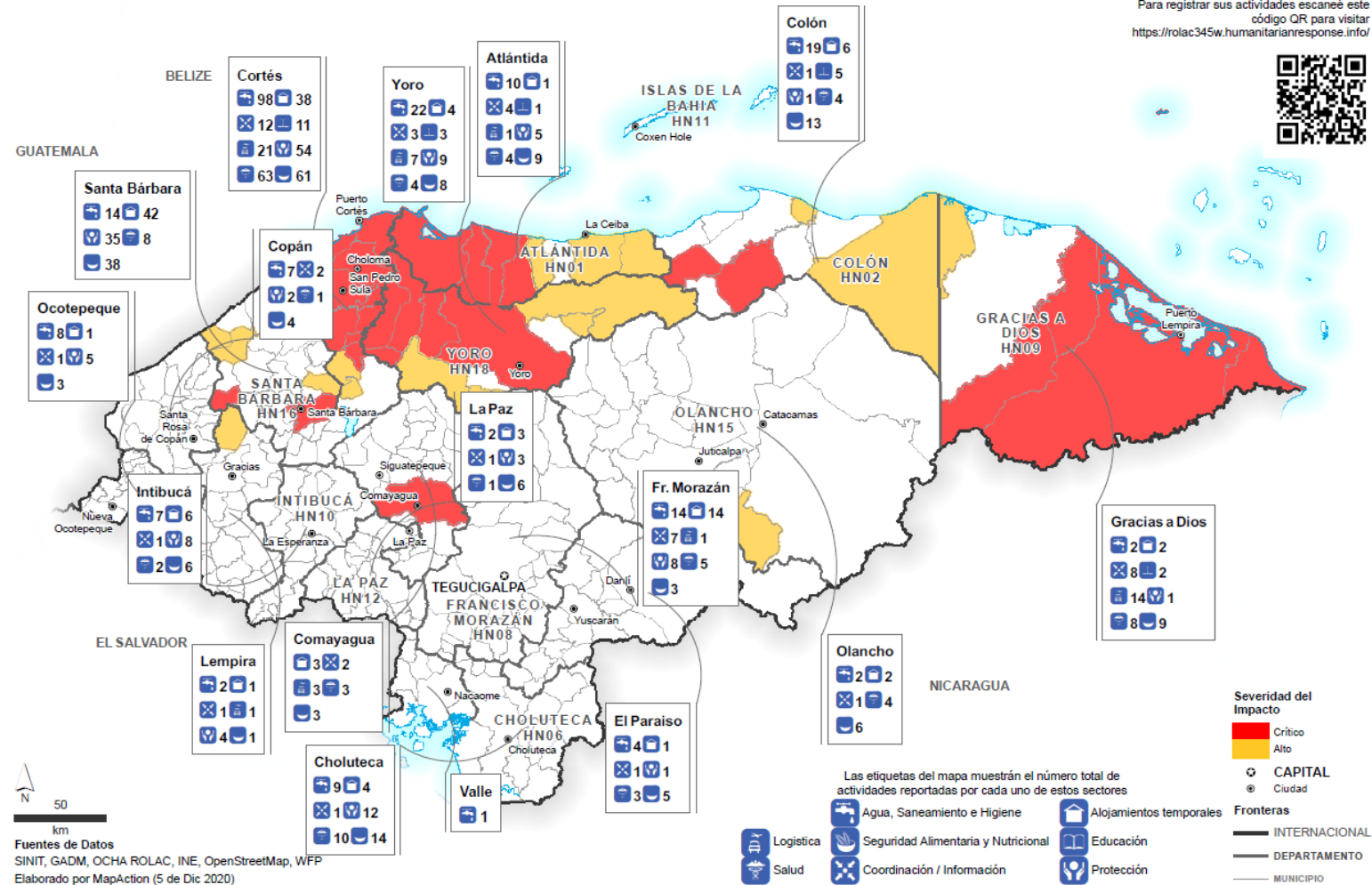


# Who-What-When - Method

- Humanitarian presence:
  - Overview map
  - Count of organisations or
  - Activities per admin unit
- Cluster specific:
  - activities per admin unit



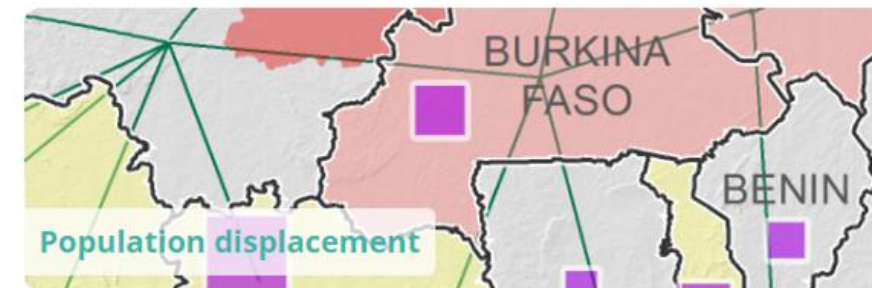
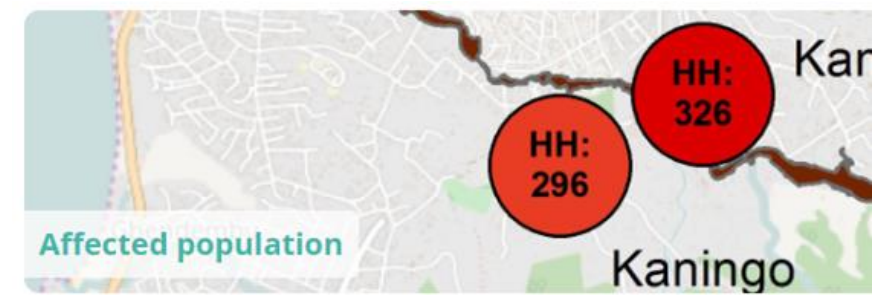
Honduras: Huracán Eta / Iota  
Presencia Humanitaria por Departamento (a las 2300 el 4 de Dic 2020)





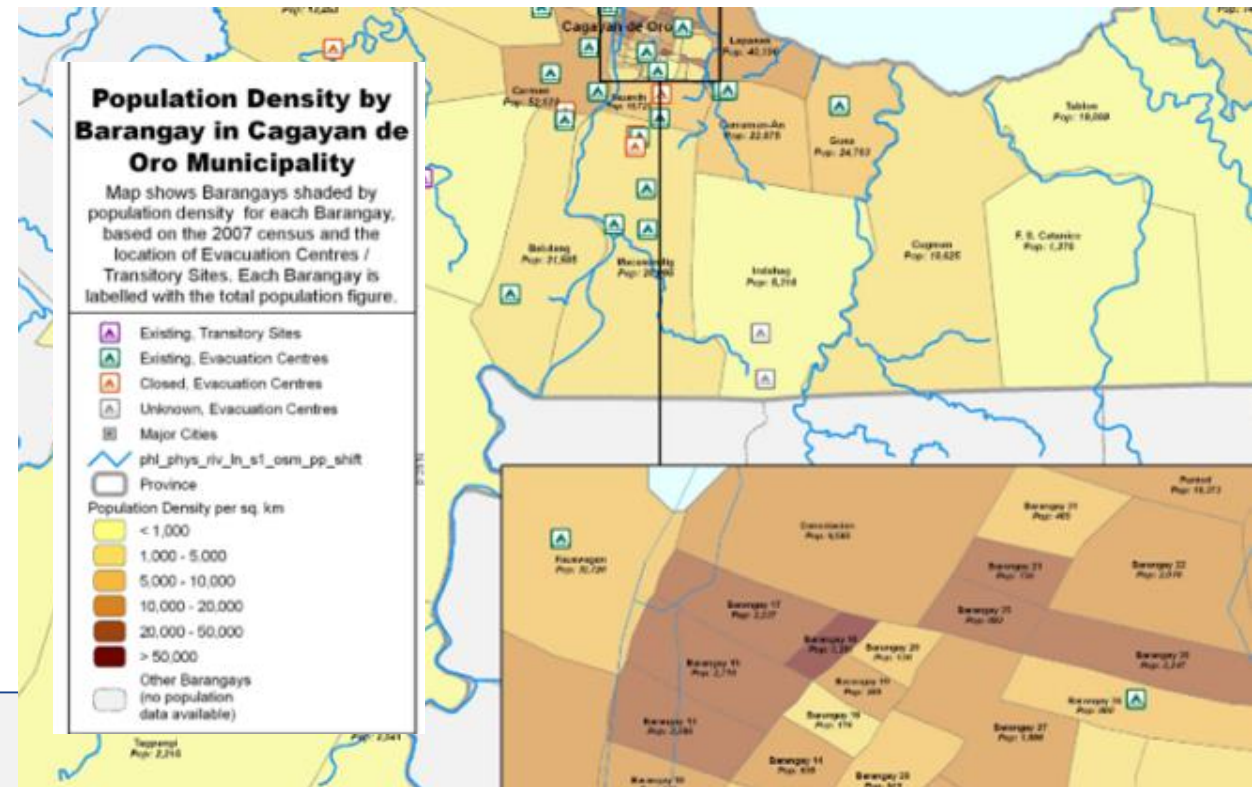
# POPULATION

- Population maps can be categorised:
  - Baseline population
  - Affected population
- Baseline - population before the response
- Affected - population impacted by the event
- Language – understanding situation and needs
- Displacement – IDP or refugees



# Baseline Population

- Population before emergency.
  - Absolute population no. per district
  - Population densities
- **Strategic or operational?** Strategic + operational
  - **Basemap, baseline or situational?** Baseline
  - **When might it be produced?** Pre-deployment
  - **Intended audience:**
    - Everyone
  - **Influence on humanitarian decisions:**
    - Understanding potential impact of disaster
    - Attempt humanitarian profile for the emergency
  - **Data:** Census, COD, HDX, GRUMP, WorldPop

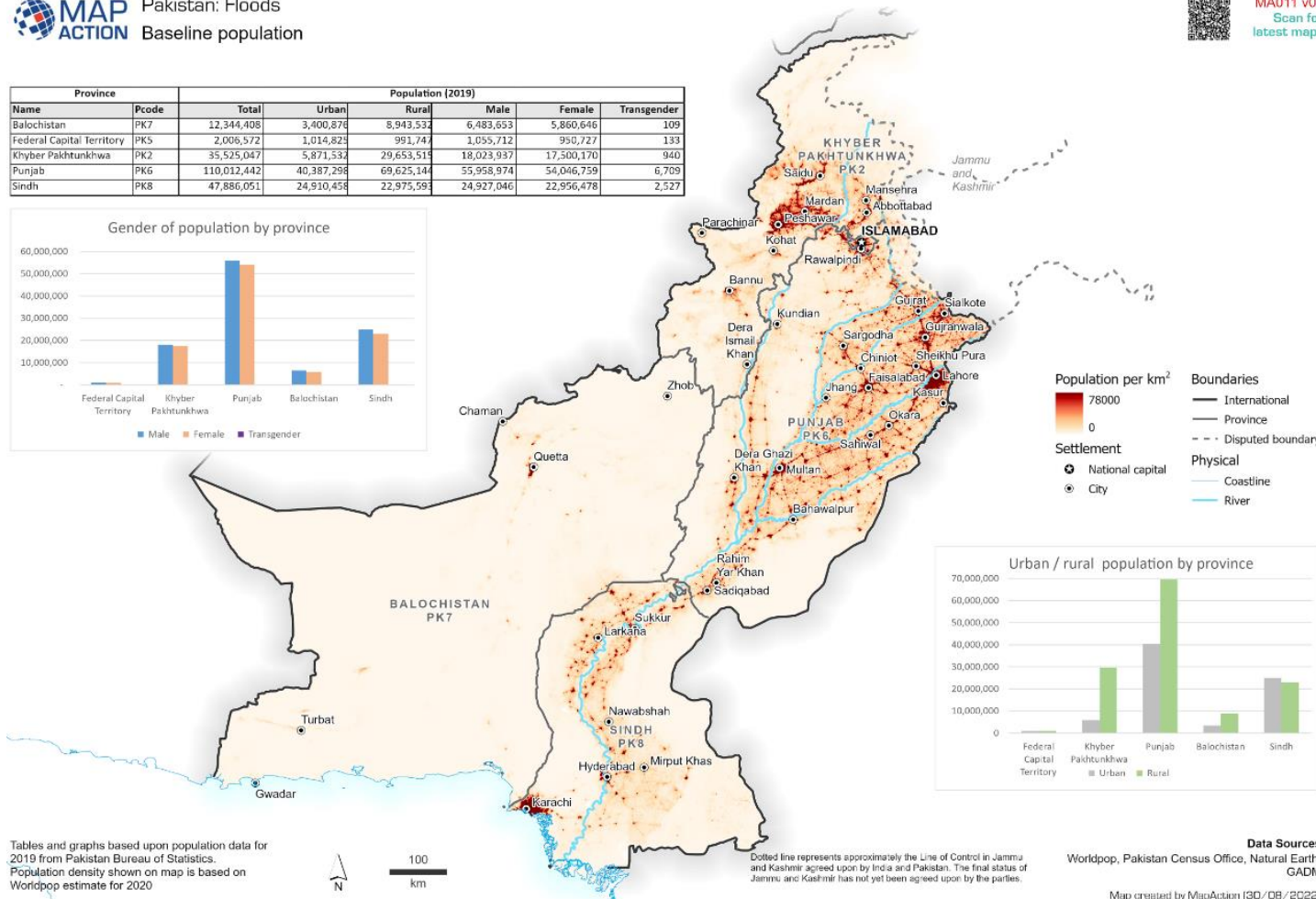
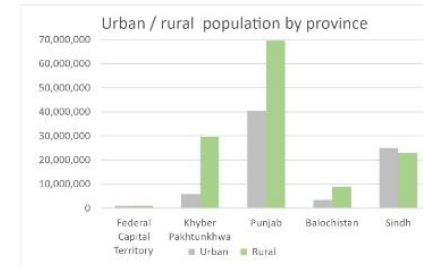
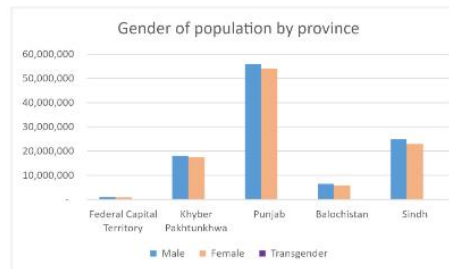


# Baseline Population - Method

- Population density
- Source needed
- Symbolisation:
  - Show pop density visually
  - Label by absolute numbers
- Population figures:
  - Total population by area
  - Pyramid chart showing -
  - Age, gender, urban/rural

MAP ACTION Pakistan: Floods  
Baseline population

Province	Pcode	Population (2019)					
		Total	Urban	Rural	Male	Female	Transgender
Balochistan	PK7	12,344,408	3,400,878	8,943,530	6,483,653	5,860,646	109
Federal Capital Territory	PK5	2,006,572	1,014,823	991,749	1,055,712	950,727	133
Khyber Pakhtunkhwa	PK2	35,525,047	5,871,532	29,653,515	18,023,937	17,500,170	940
Punjab	PK6	110,012,442	40,387,298	69,625,144	55,958,974	54,046,759	6,709
Sindh	PK8	47,886,051	24,910,458	22,975,593	24,927,046	22,956,478	2,527



Tables and graphs based upon population data for 2019 from Pakistan Bureau of Statistics. Population density shown on map is based on Worldpop estimate for 2020

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.

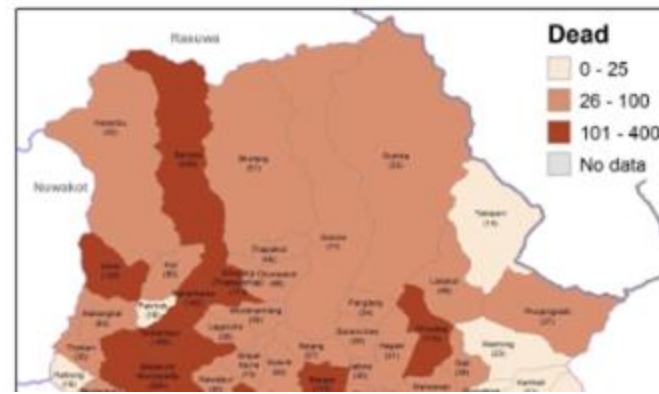
Data Sources: Worldpop, Pakistan Census Office, Natural Earth, GADM. Map created by MapAction (30/08/2022)



# Affected Population

- Population before emergency
- Absolute pop no. per district
- Population densities

- **Strategic or operational?** Strategic + operational
- **Basemap, baseline or situational?** Baseline
- **When might it be produced?** Pre-deployment
- **Intended audience:**
  - Everyone
- **Influence on humanitarian decisions:**
  - Understanding potential impact of disaster
  - Attempt humanitarian profile for the emergency
- **Data:** Census, COD, HDX, GRUMP, WorldPop



**Nepal: Earthquake Emergency - Details of the affect on the population in Sindhupalchok (as at 7 May 2015)**

Four maps showing the numbers of dead, missing, injured, and rescued per Village Development Committee (VDC) or Municipality as reported by the District Disaster Rescue Committee (DDRC).





# Affected Population - Method

- Unit of measurement:
- Use individual people
- Not household/families
- Otherwise uncertainty
- Use round figures



This map shows the number of deceased and injured people in Districts of Madagascar as of 14th Feb 2022.

Cette carte montre le nombre de personnes décédées et sinistres dans les districts de Madagascar au 14 février 2022

**Settlements**  
 ● CAPITAL  
 ● City

**Borders**  
 — REGIONAL

Decedes	Sinistres
1	6 - 3,268
2 - 3	3,269 - 7,892
4 - 9	7,893 - 20,873
10 - 87	20,874 - 30,121

**Data Sources:**  
 Madagascar National Disaster Management Office, GADM, OpenStreetMap

**Created** 15 Feb 2022 / 10:00 UTC+03:00

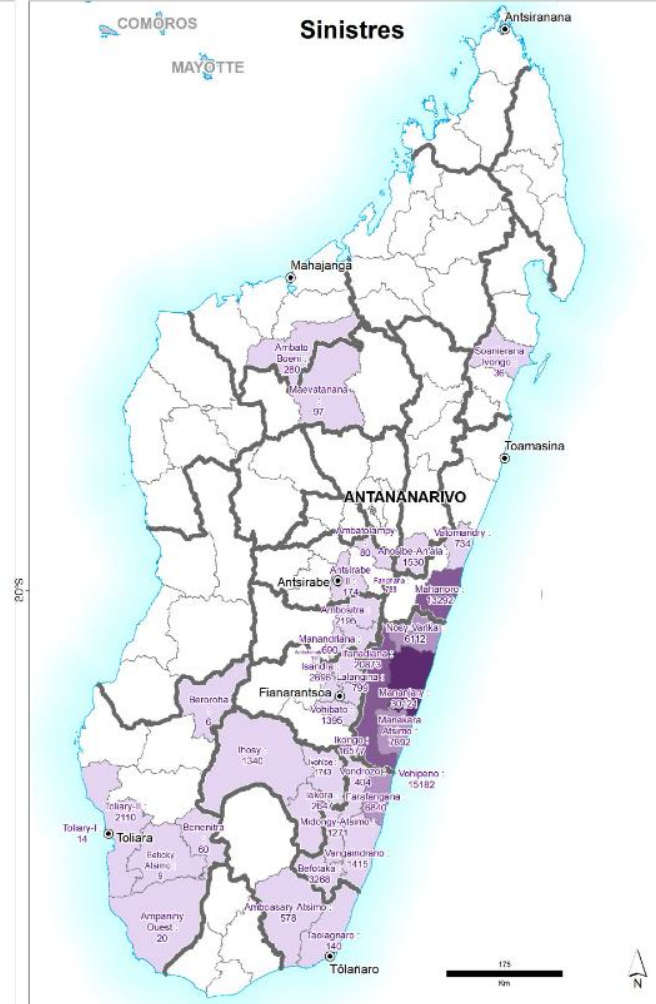
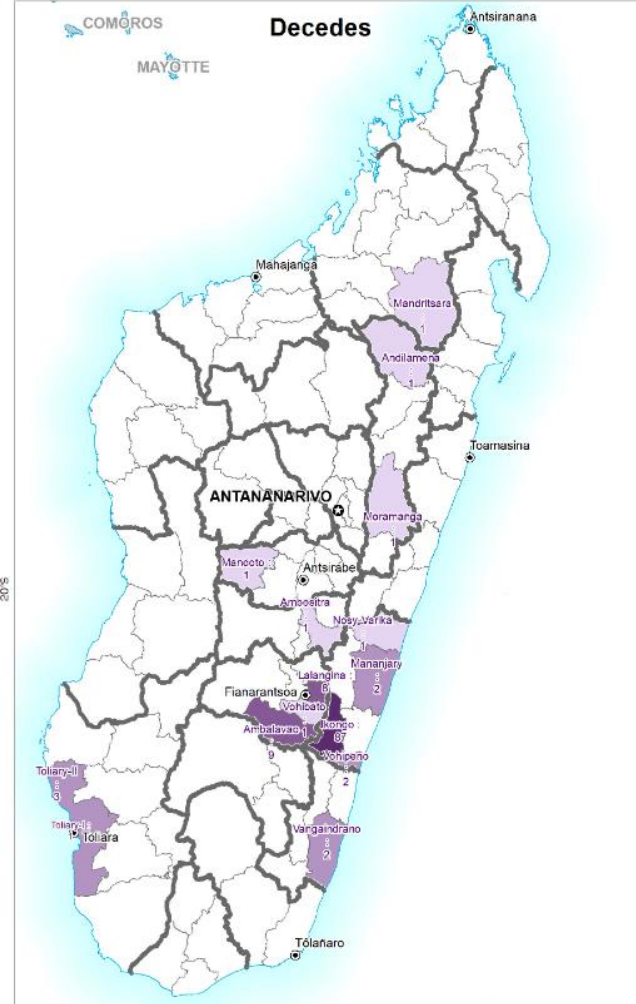
**Projection & Datum** WGS 1984 UTM Zone 38S / WGS

**GLIDE Number** EC:2022-000156-MDG

Produced by MapAction  
<https://mapaction.org/madagascar@mapaction.org>

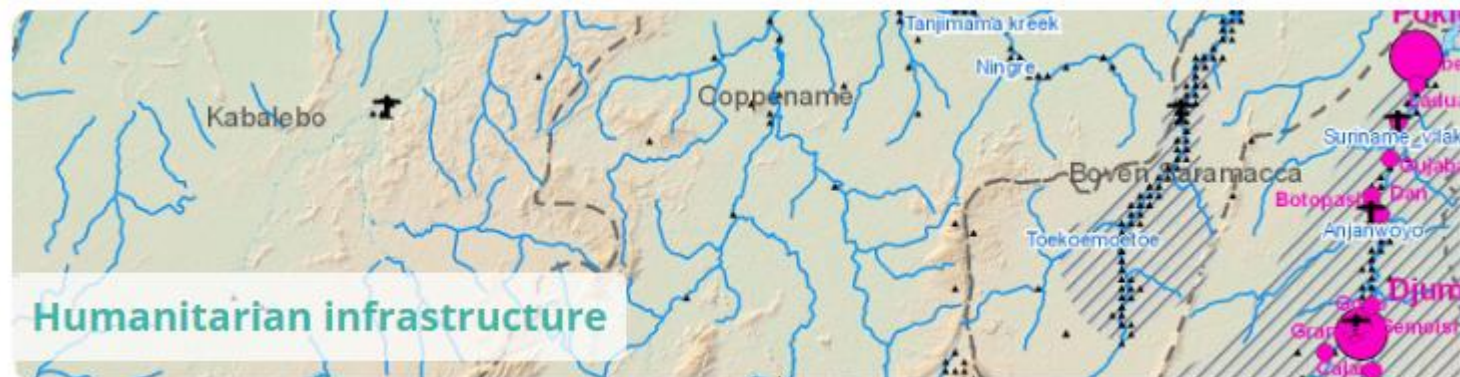
Supported by German Federal Foreign Office  
 The depiction and use of boundaries, names and associated data shown here do not imply endorsement or acceptance by MapAction.

Madagascar: Tropical Cyclone Batisirai  
 Affected population at District level (As of 14th Feb 2022)



# INFRASTRUCTURE

- Critical infrastructure
- Humanitarian infrastructure
- Damage to infrastructure
- Need support for recovery



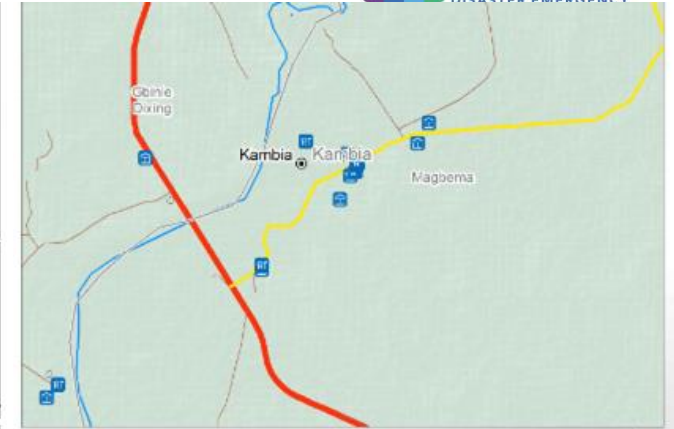


# Critical Infrastructure

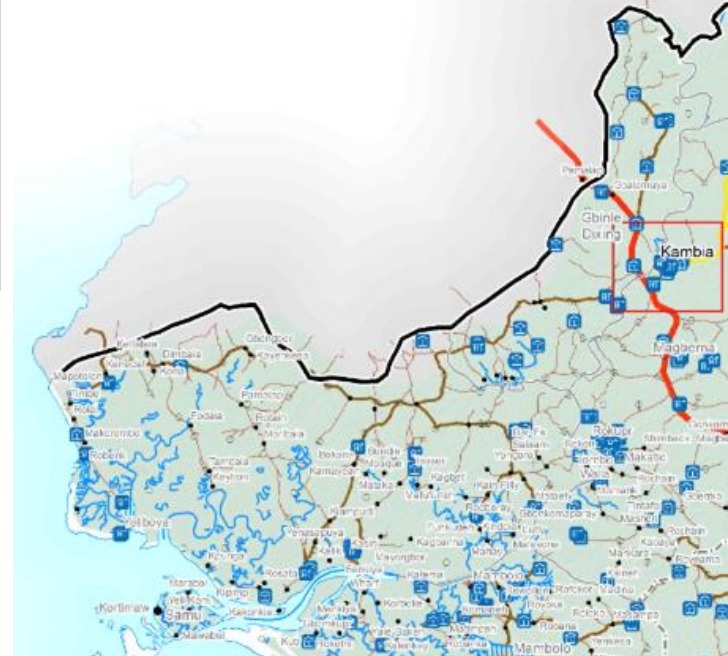
- Show basic structures and facilities
- Transport networks are key
- POI: education, hospitals, fire stations, hurricane shelters etc
- Infrastructure products as basemaps
- For assessments overlay situational data

- **Strategic or operational?** Operational
- **Basemap, baseline or situational?** All three
- **When might it be produced?** Early stages
- **Intended audience:**
  - Rescue workers, EMT, logisticians, specialists
- **Influence on humanitarian decisions:**
  - Damaged infrastructure will inhibit responders
  - Undamaged roads, schools, hospitals is key
- **Data:** hospitals, schools, roads, rail, airports, seaports

Reference map of Kambia District, Sierra Leone Showing Schools/ Existing Health Facilities (2009 Data)



<b>Settlement</b>	<b>Borders</b>
⊙ Capital	— National
⊙ City	- - - Province
• Town	- - - District
• Village	— Chiefdom
• Hamlet	— River
<b>Facilities</b>	<b>Roads</b>
⊙ Clinic	— Primary
⊙ Hospital	— Secondary
⊙ Other health	— Tertiary
⊙ School	— Other
ETU Status, Lab Status	



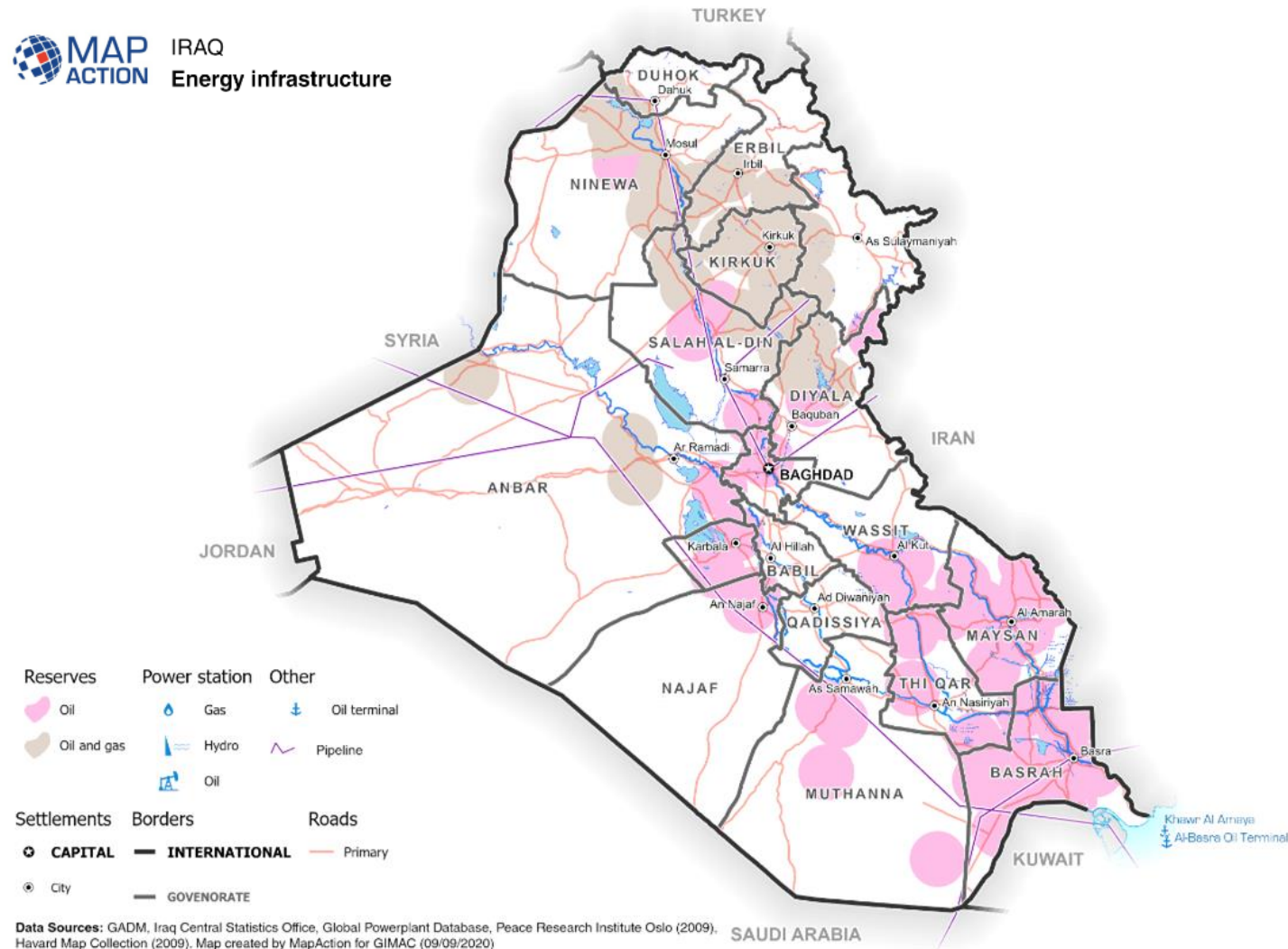


# Critical Infrastructure - Method

- Individual map products:
  - Specific infrastructure themes
  - Looking at specific vulnerabilities
- Generalised products:
  - showing key infrastructure
  - hospitals, gov buildings, schools



IRAQ  
Energy infrastructure



# Humanitarian Infrastructure

- Show established and planned:
  - Humanitarian coordination sites
  - Humanitarian logistics locations
  - Designated areas of responsibility
- Coord centres/hubs established by:
  - national authorities, UN, clusters, NGOs

- **Strategic or operational?** Operational
- **Basemap, baseline or situational?** Situational
- **When might it be produced?** Early stages
- **Intended audience:**
  - Everyone at operational level
- **Influence on humanitarian decisions:**
  - Evolution of coherent coord architecture for emergency
  - Communicating locations of coordination centres
- **Data:** hospitals, schools, roads, rail, airports, seaports

## Nepal Earthquake Humanitarian Infrastructure (as of 11 May 2015)

Map shows established and planned humanitarian coordination and logistics locations, and their designated areas of responsibility, as at the map date (check with OSOCC for any updates). Principal logistics hubs are also shown.

**Data sources**  
 Situational data: Ministry of Home Affairs, UNDAC, Logistics Cluster  
 Boundaries: UN OCHA  
 Settlements: OSM  
 Physical features: Geonode

**Settlements**  
 • Town  
 • City

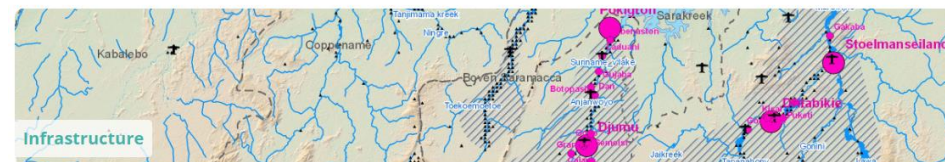
**Roads**  
 — Primary  
 — Secondary

■ Less affected districts  
 □ Priority affected districts



# Conclusion

- Looked at EPC Core map theme
- **Core:** Reference, Situational, Population, Infrastructure
- **Reference:** Country, Administrative, Geographic, Transport
- **Situational:** Situation overview, Who-what-where
- **Population:** Baseline, Affected, Languages, Displaced
- **Infrastructure:** Critical, Humanitarian





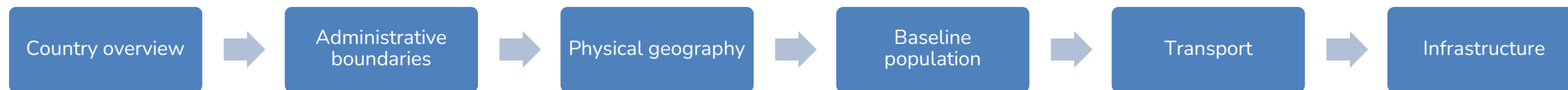
# EMERGENCY RESPONSE PRODUCT PLANNING

# A 'typical' response

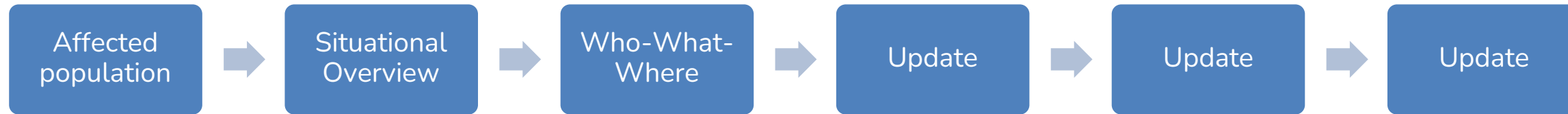
- What information products would you produce and in what order?
- Use the post it notes and in pairs agree what the first 5 products would be and why.

# A 'typical' MapAction response

Arrive in  
country



Field data

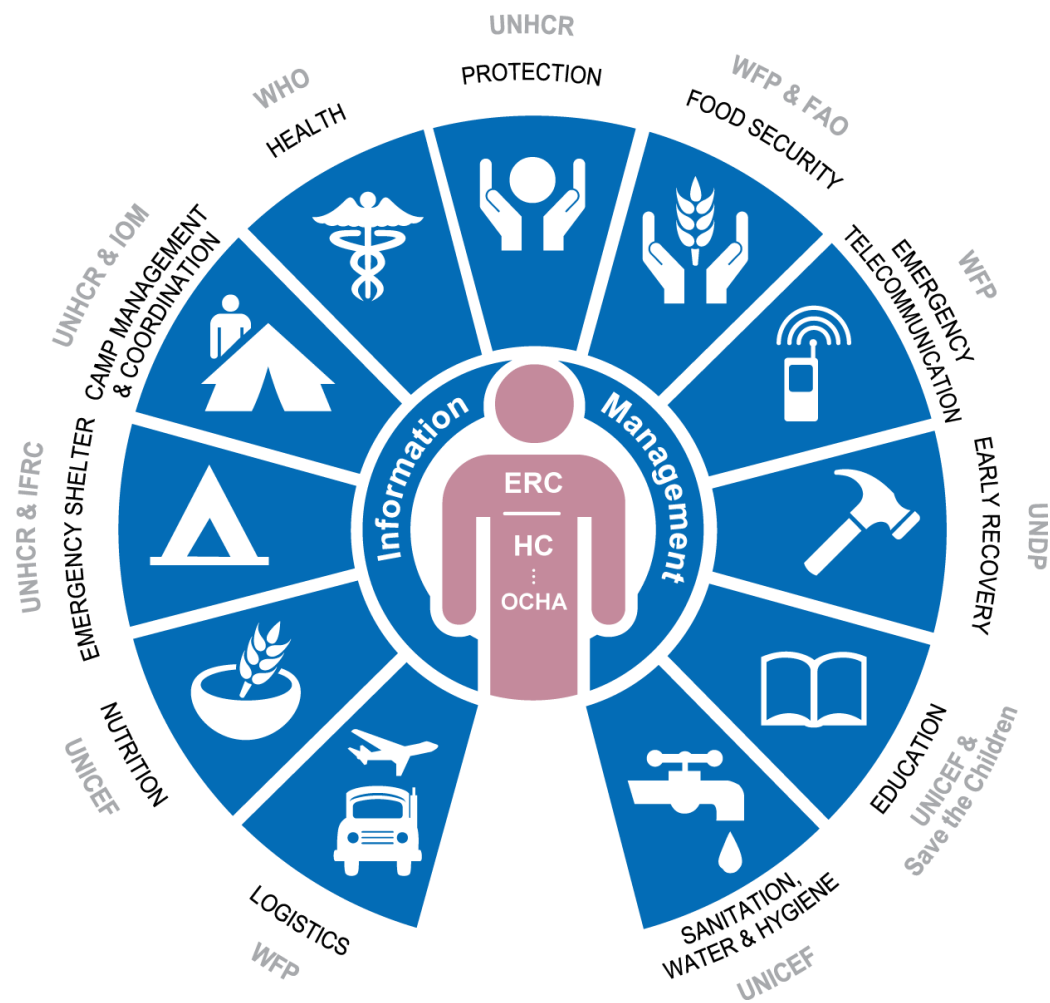


**THERE IS NO 'TYPICAL' MAPACTION RESPONSE. IT DEPENDS ON THE STAGE OF THE RESPONSE CYCLE AND THE COMPLEXITY OF THE EMERGENCY**



# Cluster specific product cycles

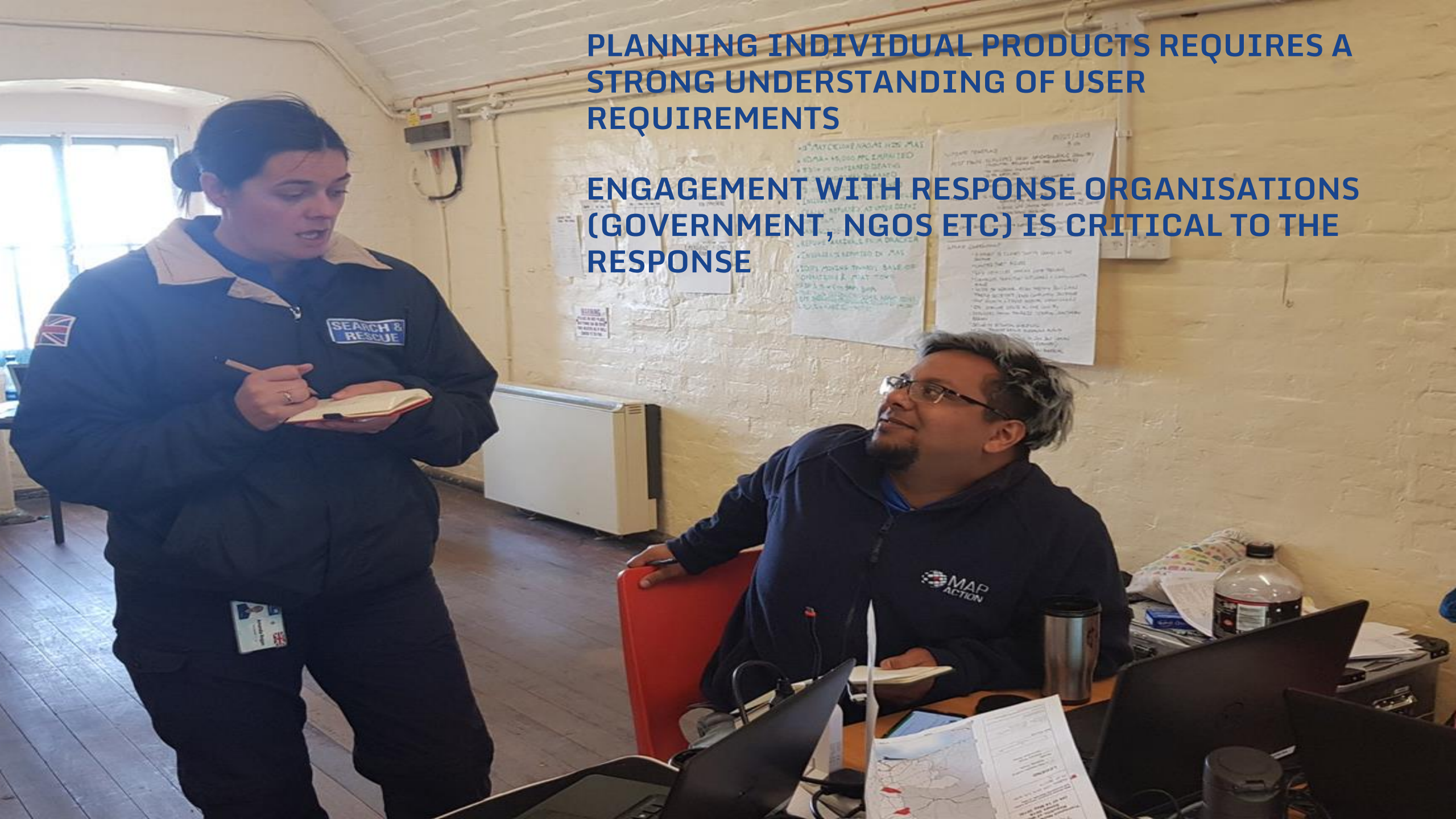
- Some products may only be suitable to a specific type of response
- These will require their own product cycles
- Often they will want to know
  - Pre-existing conditions
  - What was affected
  - What impacts
  - What the response is



# INDIVIDUAL PRODUCT PLANNING

**PLANNING INDIVIDUAL PRODUCTS REQUIRES A STRONG UNDERSTANDING OF USER REQUIREMENTS**

**ENGAGEMENT WITH RESPONSE ORGANISATIONS (GOVERNMENT, NGOS ETC) IS CRITICAL TO THE RESPONSE**





# Map requirements

**CONTACT DETAILS** – name, organisation, email, phone number

**DESCRIPTION** – what map is being requested?

**PURPOSE** – what will the map be used for?

**AUDIENCE** – who is the map for? Overview vs technical

**FORMAT** – what type of map is needed? Paper vs digital stand alone vs report

**SIZE** – how big does the map need to be?

**NUMBER** – how many copies of the map are needed?

**DATA** - does your end user have any of the data you require to make the map - check it is useful before letting them go?

# Data

Two approaches to data:

- Knowing what map you want to produce and deciding what data you need to produce it
- Knowing what data you have available and working out what maps you can produce with it.

A response will usually include both approaches to map production

Need to consider whether data is appropriate – quality, timeliness, coverage

# Analysis and visualisation

- Do you need to work on the data before creating the product?
  - Only show a subset of the selected data
  - Join non spatial data to spatial data
  - Do some more sophisticated analysis (buffer, overlay)
- How can you show the data on the map?
  - Symbology, colour coding/ labelling / categories
  - Single Map, Atlas, Online Solution
  - Area of interest



# Product Planning Conclusion

- **Purpose** – who has requested the map and why?
- **Narrative** – what is the data telling you? What map type best suits?
- **Visualisation**– the way you set up the map will influence how people will interpret it

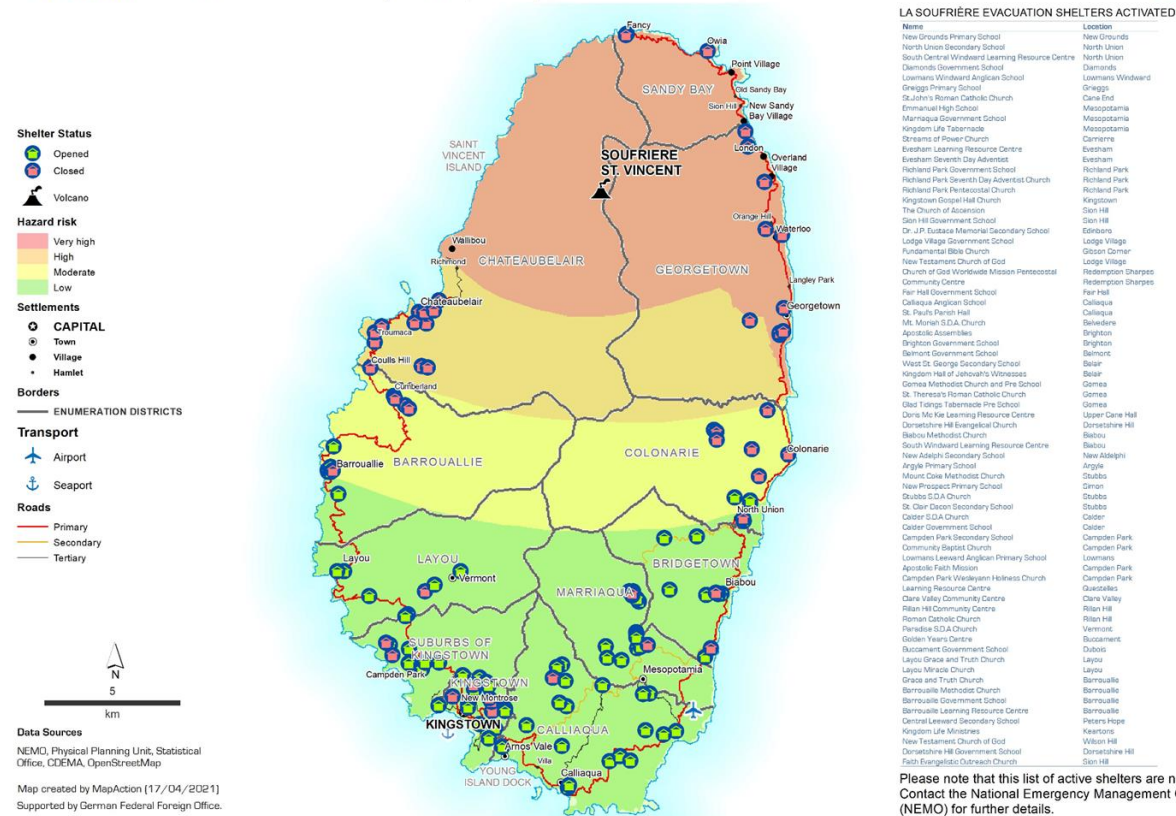


# Concluding exercise

Take one of your identified products and work out:

- Who needs it?
- When in the response it is needed?
- How will it be used?
- What data you need?
- Is that data available?

MAP ACTION St Vincent and the Grenadines: La Soufrière volcano  
Location and status of shelters (as of 17 Apr 2021)



Please note that this list of active shelters are not exhausted. Contact the National Emergency Management Organization (NEMO) for further details.

This programme is  
gratefully supported  
by



**USAID**  
FROM THE AMERICAN PEOPLE





# MAP ACTION

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