

Research Terms of Reference

IDP Camp Infrastructure Mapping

Syria

July 2017
V1

REACH Informing
more effective
humanitarian action

1. Background & Rationale

Since the beginning of conflict in Syria in 2011, large-scale internal displacement has been an ongoing, resulting in 6.3 million internally displaced persons (IDPs)¹. In the absence of permanent housing, IDP camps have formed across Syria, with large clusters present in the Northwest governorates of Aleppo, Hama and Idlib, which offer temporary shelter to many of the IDPs. CCCM figures from May 2017 estimate 338 IDP camps in the Northwest region alone.

IDP camps typically comprise of multiple shelter types (e.g. tents and prefabricated shelters) and a variety of services including latrines, WASH centres, kitchens, distribution sites, schools and healthcare services. The organisation and structuring of these IDP camps varies greatly, reflecting the rate and scale of arrivals of IDPs. Whilst some camps are fully or partially-structured with organised layouts of shelters and facilities such as WASH centres, others have limited or no organisation of shelters and infrastructure buildings. In addition, many of these camps suffer from flooding during the storms of winter months, for which no data have been recorded.

The creation of detailed maps of all of these camps would provide recent and comprehensive information about the number and layout of both shelters and infrastructure. This, in turn, would support camp management staff in efforts to site new shelters and services to meet the needs to current and future IDPs. REACH, with field support from CCCM partners has the capacity to provide up to date and detailed visual summaries of the layouts of shelters and infrastructure camps. In addition, the inclusion of flood extent data would benefit storm response efforts in future. These maps can be updated as and when required, reflecting the growth or restructuring of these camps over time.

2. Research Objectives

Primary objective: To provide comprehensive information on shelter and infrastructure of IDP camps in Northwest Syria in order to inform CCCM cluster members' ongoing programming.

Specific objectives:

- Identify within each IDP camp the numbers of shelters within each block and determine the shelter type (prefabricated structures vs tents) of these
- Identify within each IDP camp the flooding extent and flood risk areas based on previous storm events, to inform subsequent winterisation planning
- Produce detailed reference maps of shelter and infrastructure layout for IDP camps in Northwest Syria

3. Research Questions

- How many shelters are present within individual IDP camps in northwest Syria?
- What types of structures are being using by IDPs as shelters within individual IDP camps in northwest Syria?

¹ OCHA, Humanitarian Needs Overview 2017, as of December 2016

- What kind of infrastructure is present within each IDP camp?
- Where has storm damage been reported within each IDP camp?

4. Methodology

4.1 Methodology overview

To produce detailed camp maps, a combination of satellite imagery interpretation and contextual information from partner field staff is used. Initially very-high resolution satellite imagery is acquired over the region of interest. Using the CCCM camp locations database, camps are located. The GIS analyst then identifies the locations of all possible shelters and other buildings within the camp. Draft maps are then shared with CCCM implementing partners who indicate the different shelter types present within a block of shelters and identify the name and function of infrastructure buildings within the camp, as well as indicating where flooding has occurred in previous storm events. REACH then revises the maps to include the updated information before the product is validated.

4.2 Population of interest

The assessment will cover 2 main subdistricts:

- Dana subdistrict in Idlib governorate
- A'zaz subdistrict in Aleppo governorate

These areas hold the majority of IDP camps within Northwest Syria and are the main camps where CCCM partners are able to operate.

4.3 Primary Data Collection

For each IDP camp or cluster of small camps the following methodology is applied.

Satellite Imagery Acquisition

REACH purchases as up-to-date as possible satellite imagery for Dana and A'zaz subdistricts. This imagery is 0.5m² resolution or smaller, to allow individual shelters to be discerned from each other.

Satellite Imagery Interpretation and Digitisation

Once the imagery is procured a REACH GIS analyst will interpret the satellite imagery to identify the:

- **Location of individual shelters** - represented as a small polygon for areas of regular shelter layouts, or as a single point in less structured IDP camps. Shelter shape varies with structure type, with prefabricated shelters commonly rectangular, whilst tents can vary in shape from octagonal to rectangular. The analyst will place a single point at the centre of each shelter.
- **Number of shelters within a block** - defined as a continuous area of shelters between paths or roads. The number of shelters will be calculated by joining the shelter points to the block layer in GIS.
- **Location of infrastructure buildings** – these will be represented by a polygon showing the building footprint. Generally it is not possible to tell the function of building from satellite imagery alone.

Once the imagery has been digitised, a draft IDP camp map is produced featuring the blocks and infrastructure buildings with the satellite image as the basemap.

Partner Contextual Information

Once an initial draft map has been produced this is shared with a relevant CCCM partner who is operating in the camp or cluster of interest, their role is then to provide the following:

- Confirmation of shelter counts and types within areas (if known)

- The name and function of different infrastructure buildings
- Identification of flood-prone areas based on previous flood events. This is achieved by partners adding drawings to the draft maps that show the extent or known-flooding hotspots based on previous flooding experiences

Upon receiving the above information, REACH then incorporates this information into the mapped outputs for each camp.

5. Product Typology

Once all information has been compiled for an individual camp, or cluster of small camps, a single map will be produced. These maps will adhere to REACH standard style guidelines with full CCCM visibility (with both REACH and CCCM logos) and described as the result of an initiative equally implemented by the two partners. Given the sensitivity of the products, no information will be given on the location of the camps within Syria, and outputs will not be placed online in any capacity.

Given the sensitivity of the data because of protection risks, the CCCM will be solely responsible for the dissemination of products and REACH will present new maps at biweekly CCCM cluster meetings. Maps will not be posted to the REACH resource centre or hosted elsewhere online.

Table 1: Type and number of products required

Type of Product	Number of Product(s)	Additional information
Map	100	100 maps produced covering approximately 150 IDP camps

6. Management arrangements and work plan

Roles and Responsibilities

- REACH Senior Assessment Officer - Turkey
 - Overall oversight
 - Review of tools, methodology, plans and outputs
 - Presentation of outputs at CCCM cluster meetings
- REACH GIS Officers – 1 Turkey, 1 Jordan, 1 Iraq
 - Mapping and analysis support for information products
 - Lead mapping component

Work Plan

Output production will be ongoing in multiple simultaneous cycles for various camps. They will follow the below approximate timeline.

Task	Days									
	1	2	3	4	5	6	7	8	9	10
Draft map produced										
Partner provides feedback										
Map revised										
Validation / Dissemination										

7. Risks and Assumptions

Risk	Mitigation Measure
Partners are unable to provide timely feedback on camp infrastructure	Maps to be shared with multiple partners operating within camps to ensure timely feedback and confirm details.
Exact shelter numbers are uncertain in dense areas of tents where imagery is unclear	Encourage partners to conduct manual shelter counts in the most uncertain areas or provide best-guess estimates in certain blocks.
Protection risk of maps being leaked or distributed beyond humanitarian actors who operate in the camp	Dissemination will be limited to actors who operate within IDP camps of interest

8. Monitoring and Evaluation

IMPACT Objective	External M&E Indicator	Internal M&E Indicator	Methodology	Focal point	Tool	Research-specific information
Humanitarian stakeholders are accessing IMPACT products	Number of humanitarian organisations accessing IMPACT services/products Number of individuals accessing IMPACT services/products	# of individuals and organisations reporting accessing maps	Usage survey	Country team	Usage_Survey template	Identify the number of partners receiving outputs via the CCCM
Humanitarian stakeholders are using IMPACT products	Humanitarian actors use IMPACT evidence/products as a basis for decision making, aid planning and delivery Number of humanitarian documents (HNO, HRP, cluster/agency strategic plans, etc.) directly informed by IMPACT products	Perceived relevance of IMPACT country-programs Perceived usefulness and influence of IMPACT outputs Recommendations to strengthen IMPACT programs Perceived capacity of IMPACT staff Perceived quality of outputs/programs Recommendations to strengthen IMPACT programs	Usage M&E	Country team	Usage_Feedback and Usage_Survey template	Usage survey to be conducted in October / November 2017, following the release of all camps maps, targeting all CCCM partners

Humanitarian stakeholders are engaged in IMPACT programs throughout the research cycle	Number and/or percentage of humanitarian organizations directly contributing to IMPACT programs (<i>providing resources, participating to presentations, etc.</i>)	# of organisations contributing to data collection	Engagement Monitoring	Country team	Engagement log	Identify the number of partners involved in data collection
		# of organisations/clusters attending map presentations during CCCM meetings;				

9. Documentation Plan

- Terms of reference
- Maps

10. Annexes

1. Data Management Plan
2. M&E Matrix

Annex 1 : Data Management Plan

Administrative Data	
Project Name	IDP Camp Infrastructure Mapping
Project Code	16 CRE OFDA
Donor	OFDA
Project Partners	CCCM
Project Description	Mapping exercise of IDP camps in North-West Syria identifying infrastructure and shelter layouts
Project Data Contacts	Patrick Sayers (patrick.sayers@reach-initiative.org)
DMP Version	V1 – July 2017
Related Policies	n/a
Data Collection	
What data will you collect or create	Geospatial data of the layout of shelters and camp infrastructure buildings
How will the data be collected or created?	Digitisation of satellite imagery combined with contextual information provided by CCCM partners
Documentation and Metadata	
What documentation and metadata will accompany the data?	<ul style="list-style-type: none"> • Name of contextual data provider (CCCM partner) • Date of data provision
Ethics and Legal Compliance	
How will you manage any ethical issues?	Locations will not be specified on maps and spatial data will not be shared externally

How will you manage copyright and Intellectual Property Rights (IPR) issues?	Ownership, title, and intellectual property rights on materials created under this product shall rest with CCCM. The CCCM will be responsible for all dissemination of products.
Storage and Backup	
How will the data be stored and backed up during the research?	<p>Satellite imagery will be stored in 2 places:</p> <ol style="list-style-type: none"> 1. Locally on the GIS officer's laptop 2. External hard drive <p>Geospatial data will be stored in 2 places:</p> <ol style="list-style-type: none"> 1. Locally on the GIS officer's laptop 2. REACH MENA Dropbox
	Dropbox is password protected, and Dropbox encrypts all files using 256-bit Advanced Encryption Standard (AES). Physical access to offices in which data is stored is secured, and requires key access to enter.
Selection and Preservation	
Which data should be retained, shared, and/or preserved?	All finalised camp geodatabases and satellite imagery
What is the long-term preservation plan for the dataset?	The data will be preserved on the REACH MENA Dropbox
Data Sharing	
How will you share the data?	The consolidated geodatabases can be shared upon request by the CCCM
Are any restrictions on data sharing required?	As ownership of the data will lie with CCCM, requests for access to consolidated geodatabases will be directed to them.
Responsibilities	
Who will be responsible for data management?	REACH Syria GIS Officer