



15 MAPPING

15.1 OVERVIEW AND FUNCTION

Emergency humanitarian maps enable the geographic visualization of life-saving objectives and act as a conduit for the communication complex information for a coordinated humanitarian response. Not all mapping requires complex skills or technical programming expertise. A basic understanding of PowerPoint and Excel is all that is required to produce the first set of standard emergency humanitarian maps.

These guidelines focus on the “drawing” of maps using a UNHCR stylized PowerPoint Map Pack, identifying and including GPS coordinates on a PowerPoint Map Pack, and designing a UNHCR info-graphics map using Excel. Guidance is also included on using ArcGIS and Google Earth to indicate GPS points of interest while creating a slightly more sophisticated map.

15.2 HOW-TO GUIDE

A mapping focal point and reporting requirements should be clearly defined by the UNHCR Representative, and should be delegated by the senior managers to the Information Manager if present in an emergency. It is recommended that map templates are kept current and coincide with updates to SitReps, camp profiles or population statistics (be sure to reference the source and collection date for all stats, displayed at the bottom of the map).

In accordance with this guidance and in consultation with the UNHCR Representative, the mapping focal point will need to define the information to be covered, the type of map to be produced and the area of delineation (country, district, camp or settlement level), based on available data.

All maps must be cleared with the UNHCR Representative or the designated senior managers prior to release or uploading on the UNHCR web portal. It is recommended that maps are updated or produced at least one to two times a week, as information changes or the situation develops during the first phase of the emergency.

15.2.1 Identifying and managing locations of interest

Collecting and recording locations of interest is a first step to creating maps. Locations of interest may either be an area of interest (a known administrative unit or a specific area) or a point of interest (a city, village or landmark). Therefore, a first responsibility is to understand the type of location of interest being referred to – often a critical step, as the same name can be used for a province, a district or a city.

Coordinates for points of interest should be stored in a location-related master spreadsheet, clearly indicating place name and using the “decimal degree” format, to a minimum of four decimal places (http://en.wikipedia.org/wiki/Decimal_degrees). The same spreadsheet can be easily imported into Google Earth to generate a KML document that can then be shared with partners for planning or outreach purposes. KML files store geographic modeling information (polygons, points, lines, images etc.) and add HTML context,

the language in which web pages are written. Note that KML is a good format for geographic data visualization but not for data management, so always keep a location master list separate in a spreadsheet (<https://developers.google.com/kml/documentation/>).

Using location names, geographic coordinates can be found in the Populated Places section in the COD registry, in online gazetteers (such as <http://geonames.org> or <http://www.getlatlon.com/>) or on a country-specific national online registry (national mapping agency). Included in the annexes for this section is also a short note on locating GPS coordinates using Google Earth and indicating GPS-identified points on a map, in addition to guidance on geo-tagging photos.

Examples of points of interest include the following:

Community Information and Services

- Health centres/clinics
- Schools
- Food-distribution points
- Nutrition centres (therapeutic & supplementary)
- Community centres
- Water-access points
- Toilets
- Burial sites

Location of People of Concern:

- Planned camps
- Unplanned camps (spontaneous camps)
- Border-crossing points
- Reception centre(s)
- Transit centre(s)
- Location (hosting families)
- Location of persons of concern during outbreak of illness

Note: It's good practice to cross-check mapped coordinates, names and placement of locations with national colleagues for accuracy.

15.2.2 Key sources of information

Key sources of information can be found in secondary data. Alternately, such sources should be provided by the registration officer or Information Manager, or from operational partners, the local Government or national colleagues.

15.2.3 Standard maps: First phase of an emergency

Situation, security, 3W and info-graphics maps do not necessarily require GIS expertise to create. Examples of more complex maps that do require GIS skills include flood analysis from satellite imagery classification and multiple spatial criteria overlay, heat map plan through network analysis to support contingency planning, among others.

Situation map: Displays the location of people of concern and UNHCR office location(s), and indicates population-of-concern numbers (displayed in graphs), including emergency registration numbers at the country or district level. This information may be gathered via secondary data review and from the UNHCR registration officer.

Security map: Displays clashes and population movement. Using simple arrows, a security map can also demonstrate movement flows in relation to secondary data, and is generally displayed at the country or district level. This information can be gathered via secondary data review and from operational partners.

Who's Doing What, Where (3W) map: Displays humanitarian coverage and activities at the country, district, camp or settlement level. This information can be gathered via secondary data review and from the UNHCR Information Management Officer, who systematically tracks 3W-related information based on the guidance included in [Section 5](#) of this Toolkit.

Info-graphics maps: The focus here is to present numbers in their geographic context, where an Excel chart and narrative overlay the same base map.

15.2.4 Base-layer, common and fundamental operational datasets

Once the level of delineation and the type of map have been selected, write to the GIS officer in charge in the region (or in HQ at mapping@unhcr.org) and request a Map Pack. The base-layer map will illustrate national boundaries and shade relief, which will act as reference points within the map. The GIS officer is responsible for ensuring that official UN representation of disputed areas, countries and territory names is used in the base map.

When no GIS officer is available, consider using the UNHCR geo-portal (<http://geoportal.unhcr.org/>), which contains UN-recognized boundaries, UNHCR presence and other valuable layers overlaid on selectable background maps (Open Street Map, Google satellite backgrounds, etc.). Once the background map is selected, press the Print Screen button on the upper-right side of the keyboard, which will capture an image of the entire screen. This captured image can then be pasted into an editing programme such as PowerPoint.

Based on available secondary data, select the appropriate template from the PowerPoint Map Pack and begin populating it with key sets of information, such as location of country capital, location of UNHCR offices and refugee locations (indicating the type of settlement camps and population statistics). All of this information together represents a visual estimation of the situation based on known facts and data.

To the extent possible, rely on existing symbols detailed in the UNHCR Style Book, included as Annex 4 of this section, for use on any map. Ensure that all data presented on a map are accepted common and fundamental operational datasets (CODs and FODs, available online at: <http://cod.humanitarianresponse.info/country-region/>) agreed upon within the humanitarian community.

15.2.5 Creating maps in ArcGIS and indicating points of interest

More sophisticated maps can be created only with desktop GIS software, including ESRI ArcGIS, MapInfo, QuantumGIS or Mapwindow (open-source software). The following steps can be taken to create a map using ArcMap, to export a shapefile/map in EMF (enhanced metafile) format:

- Import the image in Excel and “ungroup” the image.
- Accept the conversion of the image into a Microsoft Office object.
- The map is now an editable vector with scalable shapes, which can be coloured independently in Excel or PowerPoint.

15.2.6 Devices for collecting data using GPS

The collection of points of interest from field data should be organized only when locations cannot be found within existing secondary data. Devices that may be used for collecting points of interest include specific GPS handheld devices, all satellite phones (Thuraya) and smart phones. Applications available for using GPS on a smart phone can be found at:

<http://www.androidpit.de/de/android/market/apps/app/me.guillaumin.android.osmtracker/OSMTracker-fuer-Android>

15.2.7 Information necessary for inclusion

All maps must include the following information:

- Title, issue date and time of map's creation, and standard UNHCR logo, with a note referencing the UNHCR office from which map was issued (e.g. UNHCR Pakistan–Branch Office Islamabad);
- Legend explaining all symbols and/or colours used;
- North symbol and compass to indicate the map's orientation;
- Explanation of the map's scale (in kilometres);
- Date when any graphed information was gathered;
- Reference/credit information, should be displayed in footnotes;
- For additional information, include the name, title and e-mail of the UNHCR mapping focal point or PI officer at the bottom of the map; and
- Disclaimer text: *"The boundaries and names used on this map do not imply official endorsement or acceptance by the United Nations."*

15.2.8 General tips

- As a map is being developed, ensure that its purpose remains clear.
- Do not overload the map with information, and keep a good balance between the message to be delivered and the amount of data being presented.
- Do not use flashy colours. Instead, select just two or three simple colours and set colour templates to act as visual references for the same types of information displayed across related maps.
- Be aware that location names, and definitions of what constitutes a city or a village, may vary or change over time, and that there may be multiple locations with the same name, etc. Be sure to gather local expertise and advice.

15.3 A ADDITIONAL GUIDANCE AND TEMPLATES

- Annex 1: Google One-Pager: How to Delineate the Area of Operation using Google Earth
- Annex 2: Guidance on Geo-Tagging Photos
- Annex 3: Creating Maps in PowerPoint (Map Pack)
- Annex 4: UNHCR Style Book
- Annex 5: UNHCR Addressing Guidance
- Annex 6: UNHCR Guidelines on Map Production and Dissemination
- Annex 7: UNHCR Map Style Guide for Advanced GIS Users
- Annex 8: Map Colour Style Guide for Advanced GIS Users

15.4 B EXAMPLES

- Annex 9: Dollo Ado, Ethiopia, Who's Doing What, Where Map
- Annex 10: UNHCR Lebanon, Registration Trends for Syrians
- Annex 11: UN Security Map for Afghanistan

15.5 C REFERENCE DOCUMENTS AND LINKS

- *Humanitarian Response, Common and Fundamental Operational Datasets Registry:*
<http://cod.humanitarianresponse.info/>
- OCHA Map Guidelines: Field Map Production and Guidelines, 29 June 2009:
- http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCcOFjAA&url=http%3A%2F%2Fwww.colombiassh.org%2Fgtmi%2FIMG%2Fpdf%2FGuidelines_Field_Map_Production_and_Dissemination.pdf&ei=DJ1aU-q7A-

[bNsQTu8YHwDA&usg=AFQjCNGp9syJtXHt_cwCEIDrx1N5AKhmHw&sig2=4ZiSRcZtkyuhSqnSknoW8Q&bvm=bv.65397613,d.cWc](https://www.youtube.com/watch?v=bNsQTu8YHwDA&usg=AFQjCNGp9syJtXHt_cwCEIDrx1N5AKhmHw&sig2=4ZiSRcZtkyuhSqnSknoW8Q&bvm=bv.65397613,d.cWc)

- *Map Action: Field Guide to Humanitarian Mapping*, First Edition, March 2009:
[http://redhum.org/archivos/pdf/ID_5047_YB_Redhum-GL-Guia-Guia_de_campo_para_Mapeo_Humanitario-MapAction-\(Ingles\)-20090331.pdf](http://redhum.org/archivos/pdf/ID_5047_YB_Redhum-GL-Guia-Guia_de_campo_para_Mapeo_Humanitario-MapAction-(Ingles)-20090331.pdf)
- A standard symbol set from UNGIWG can be found at: <http://www.ungiwg.org/content/guidelines-styles-templates-symbology>
- Photo-editing tips for PowerPoint can be found at: <http://www.youtube.com/watch?v=-Z-ss3AgnmY>
(copy and paste this link into your browser)
- *Using GPS in the Field: Manual and Reference*, UNHCR Geographic and Information Mapping Unit, September 2004
- UNHCR Field Office Memorandum No. 020/2006 on Guidance Note on Address Systems for Refugee/IDP Camps