GPS COORDINATES IN SENS SURVEYS

It is more and more common to gather GPS coordinates in SENS surveys for some of the modules, because this allows spatial analysis of the data:

➔ Visualisation of the same indicator collected in different areas makes it easier to see if there is any spatial correlation between results which may help to explain some results and potentially adjust assistance if necessary
➔ Evaluate spatial distribution of the sampling in households
➔ If maps of camp infrastructure already exists, allow to compare survey results with proximity of services (such as water access for example)

⚠️ *Please note: If you share the data with all GPS locations included, it is possible that someone can pinpoint a household record back to the actual household when inside the camp. Whilst this is in general considered a minor risk, it might jeopardize anonymity since it is easier to find out which households participated in the survey.*

I. Do you need GPS coordinates for your SENS survey?

First see if any of the points mentioned in the intro may be of interest to you. If it is the case, then you must also determine which indicators may need to be mapped since you may not need to use coordinates for all of the modules and the data collection will take longer when including GPS coordinates.

Here are a few examples of what may be of interest from a mapping perspective. Other aspects could be of importance, depending on the specific context:

➔ **Child module**: distribution within the camp of malnutrition, anaemia or growth problems in children
➔ **WASH module** : satisfaction and causes of dissatisfaction with regards to drinking water
➔ **Woman module**: distribution of anaemia in camp

Below is one example as to the type of maps that can be produced once GPS points have been collected:

Figure 1: Mapping out Anemia in children from the SENS survey conducted in Abala, Niger. Background data: OpenStreetMap.

In case you do choose to include GPS coordinates, a few elements to consider:

➔ It will require more time (30 seconds to 1 minute) to complete a module with GPS coordinates
➔ They should be taken outside to improve accuracy and speed up the acquisition
➔ Impact on battery: it will take a little bit more energy to use the GPS. You should encourage enumerators to use all recommended practices to save energy, as explained in training. Additionally, they should turn the GPS off when not in use.

II. How to implement GPS data collection in your survey?

This is what the collection of the GPS coordinate will look like on the phone:
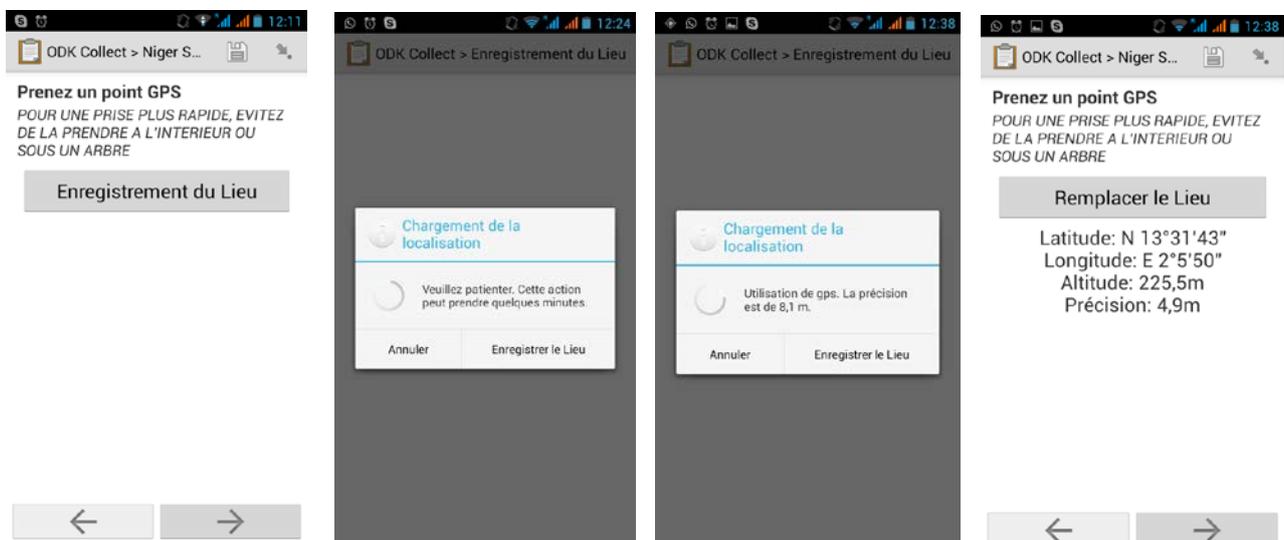
These coordinates are not included by default – they must be added to the survey.

If you can edit the content of an XLS form yourself, the following line must be added to your XLS form before you start the survey:

type	name	label::English	label::Français	hint::English	hint::Français
geopoint	I_gps	Please take a GPS reading	Prenez un point GPS	AVOID TAKING IT INSIDE OR UNDER TREES (TO MAKE IT FASTER)	POUR UNE PRISE PLUS RAPIDE, EVITEZ DE LA PRENDRE A L'INTERIEUR OU SOUS UN ARBRE

If you are unable to do this, you can contact HQ for assistance.

☼ Make sure NOT to make this question mandatory –there are legitimate reasons why it may not be possible to collect the GPS coordinate in a given location. Forcing enumerators to do so may create delays as they might not be able to finish their records.

Some applications allow quicker readings of location once the phones have been initialised with those apps – usually they must be installed on the phones. GPS Test Plus, GPS Status and GPS Fix are designed for this purpose, GPS Test Plus has been used for the SENS in the last years and can be downloaded from the SENS Dropbox folder. All apps are also available through Google Play services. The app must be launched in the morning to initialize the GPS, and the accuracy of the reading should be below 15 meters. There is then no need to use it again on the same day if you remain in the area. Once you chance the location, you should re-use it.

☼ In ODK Collect, the reading can be taken at any time manually (or it will be taken automatically when an accuracy of 5 meters has been reached). We suggest to set a threshold of 10 meters in the SOP.

⚠ When smartphones are used for the first time, or if they have been shipped from another country, it may be necessary for the GPS acquisition to be launched once outdoors so that it can obtain a fix on its new location. This process may take a few minutes – but it can be sped up if connected to a WIFI/SIM card. Once that first connection has been established, it will no longer be necessary to remain online or on a network.

III. Analysing GPS data

A ready to use tool, the SENS mapper, has been developed to help create maps based on SENS data when GPS points have been included.

You will find below an example, using both SENS data on water satisfaction and causes for dissatisfaction as well as the functional water points in the camp from the UNHCR camp map application. (For Niger, the data is historical data and obtained from REACH).
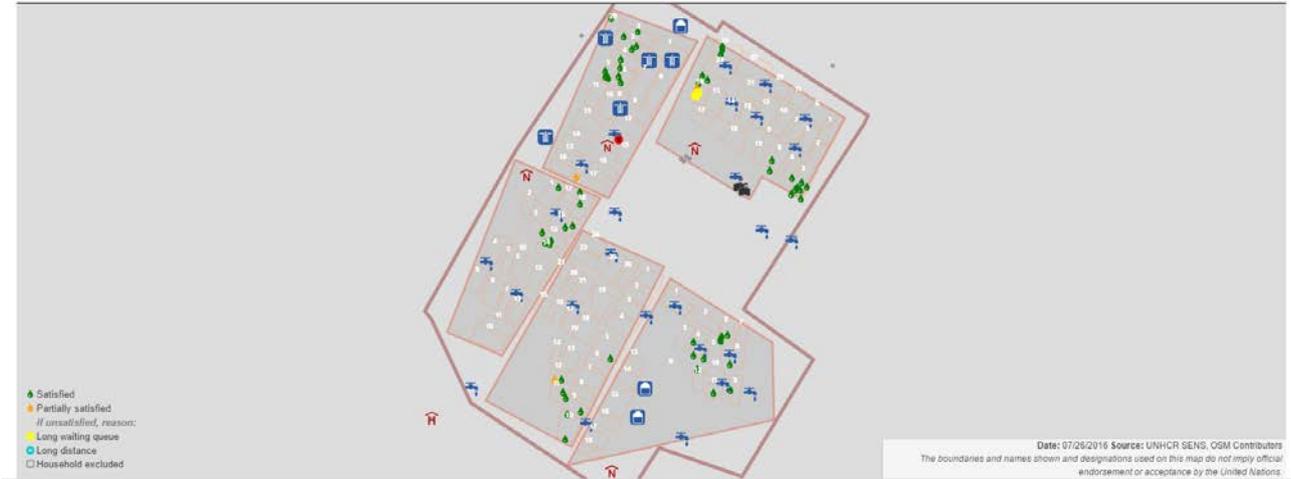
Figure 2: Mapping out Water satisfaction of the households selected for interviews in Abala, Niger. Background data: Historical data obtained from REACH incorporated into the UNHCR Camp Mapping Application.

The SENS mapper can work as a standalone tool, no need to install any software, provided you have an internet browser and an internet connection. It has been optimized with Chrome but also works on Internet Explorer. The last version can either show OpenStreetMap data or Camp Mapping data (if available) as a background. More information can be found in its documentation.

☼ If you are interested to create any of these maps, don't hesitate to contact HQ for support.