

THE DIGITAL PLATFORM

and

INFRASTRUCTURE MAPPING EXERCISES

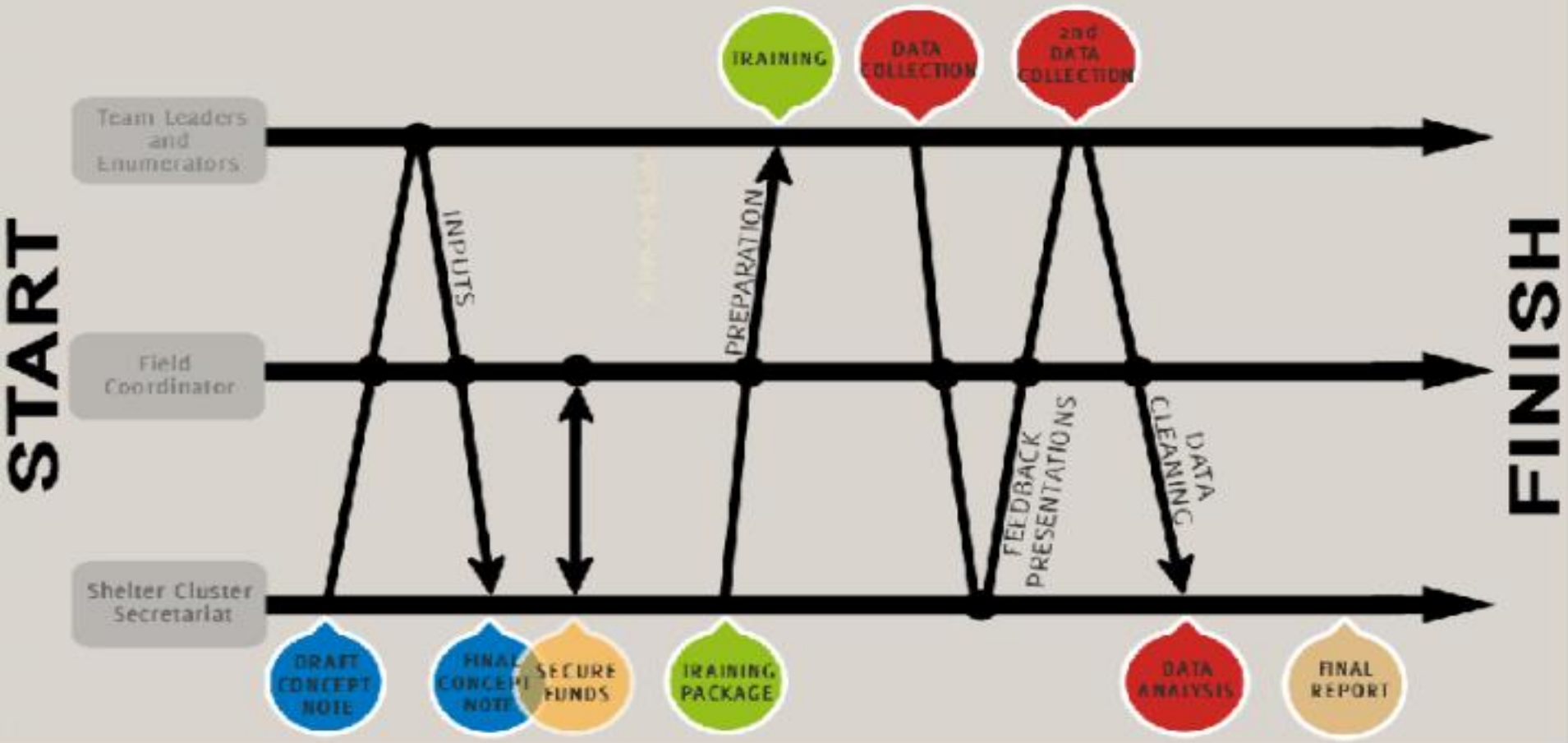
WHAT IS THE INFRASTRUCTURE MAPPING EXERCISE?

The mapping exercise provides a quick snap shot of the access that IDPs have to basic services based on direct observation. It also provides general data from Key Informants and also levels of congestion in the settlements.

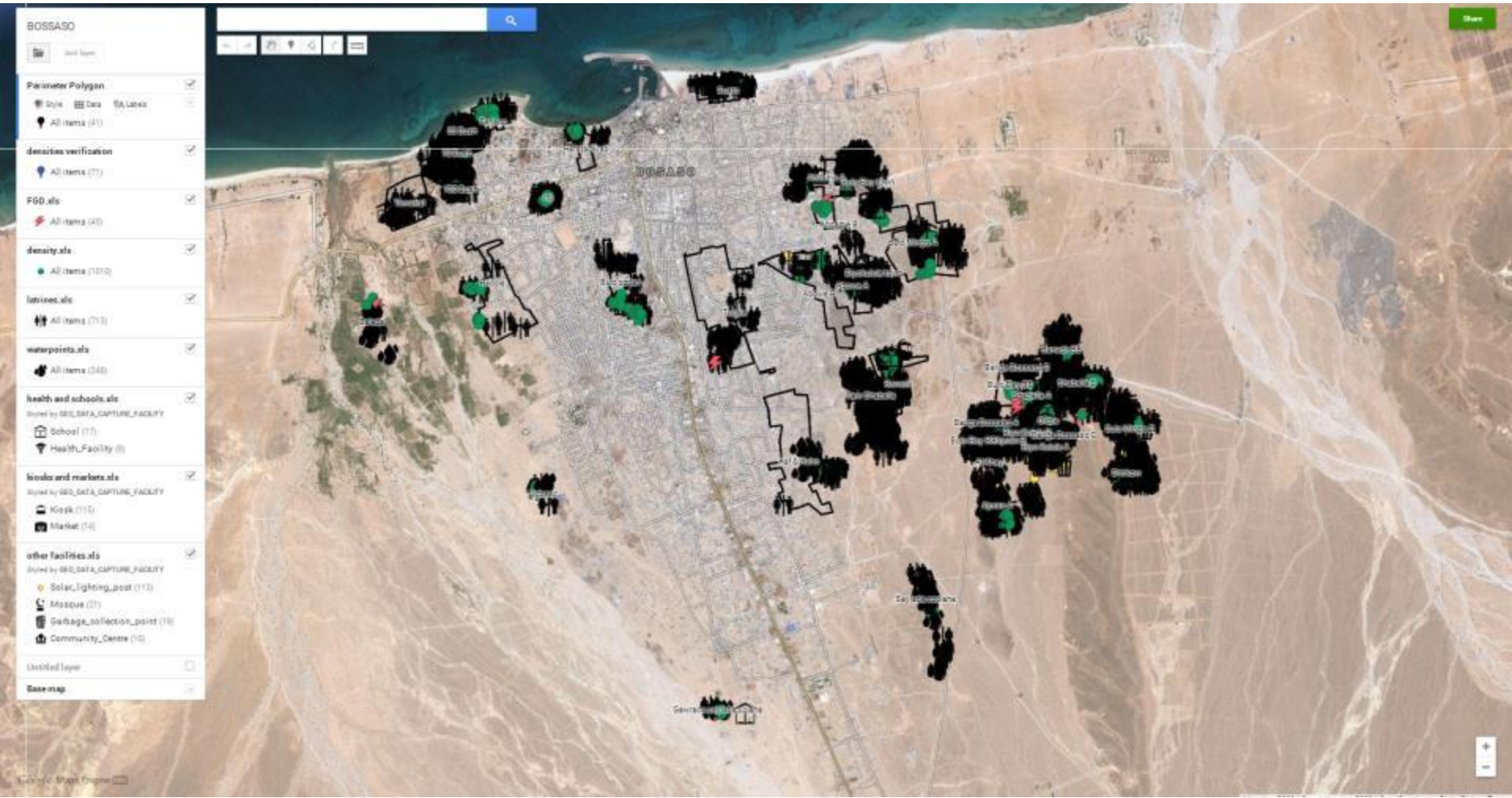
On average it takes 12 persons to map out 60.000 IDPs within 10 days.

AUTOMATION

MAPPING INFRASTRUCTURE EXERCISE TIMELINE



VISUALIZATION



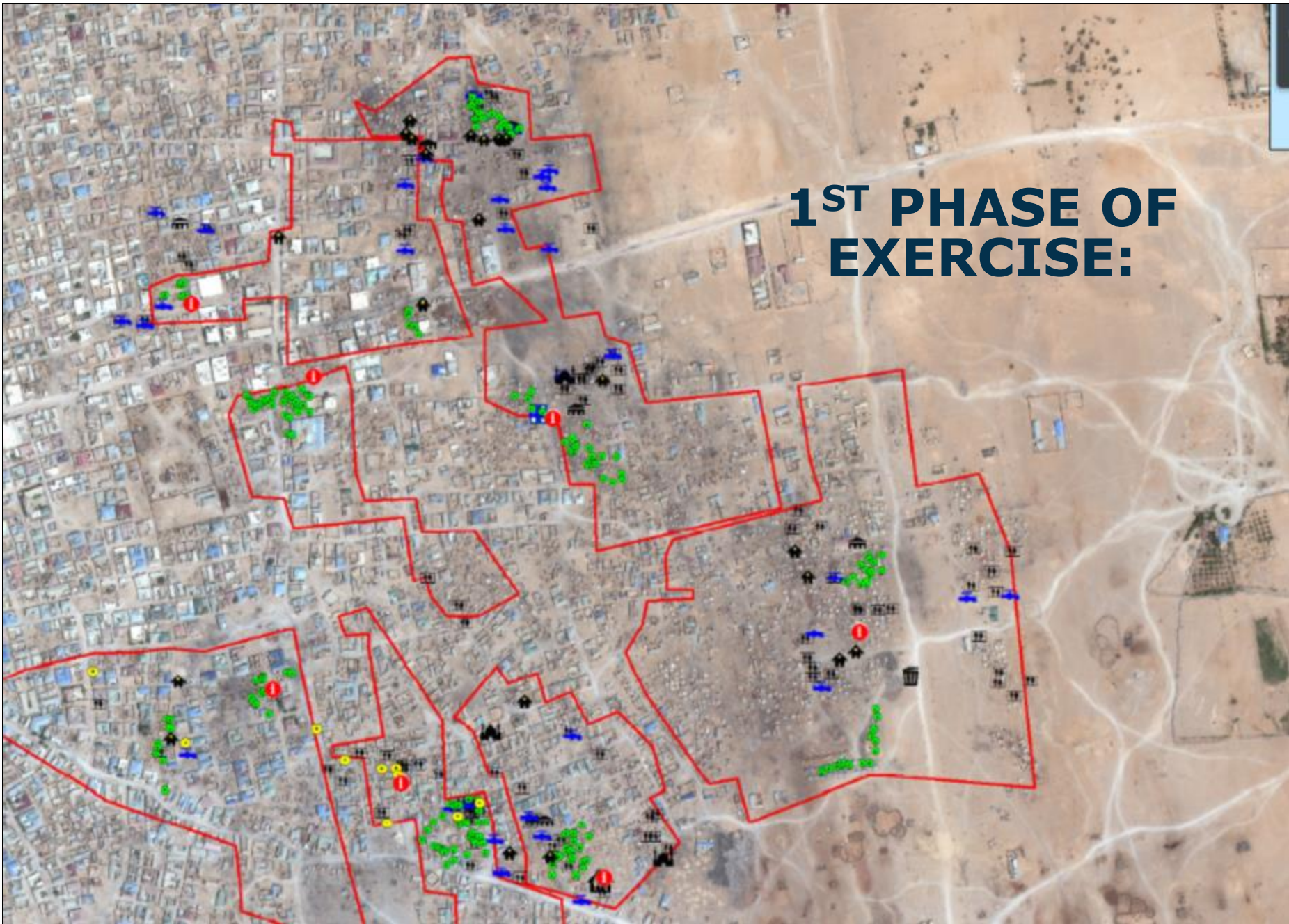
SAMPLING METHODOLOGIES FOR MAPPING EXERCISE



1ST PHASE OF EXERCISE:

- **Secondary Data Collection**
- **Perimeter**
- **Key Informant Interview**
- **Facilities**

1ST PHASE OF EXERCISE:

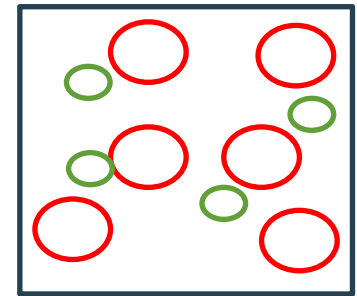


2ND PHASE OF EXERCISE

• DENSITY CHECKS

- OPTION 1: Random sampling of points within the Settlement with the use of the 7*30 methodology (UNICEF) – **TOO COMPLEX AS SATELITE IMAGERY IS OUT OF DATE.**
- OPTION 2: Random sampling of points within the Settlement with use of GPS device (diameter XXX meters) – **TOO COMPLEX AS SATELITE IMAGERY IS OUT OF DATE AND COMPLEX TO WORK WITH GPS IN THE FIELD**
- OPTION 3: Split up settlement into identifiable segments (roads) and randomly sample of segments. – **PROVIDED AN INTERESTING UNDERSTANDING OF CONGESTION LEVELS, BUT NOT GOOD ENOUGH FOR HH ESTIMATE**
- OPTION 4: We tried a more subjective as we asked enumerators to categorize shelters in low, medium and high density. **VERY INTERSTING BUT VERY SUBJECTIVE**
- OPTION 5: Use a rope of 100 meters (800m² surface area, diameter 32m) and random sample areas within a settlement. **PROVIDED VERY INTERESTING DATA ON CONGESTION LEVELS. RESEARCH NEEDS TO BE DONE IN MAKING THIS MORE STATISTICAL.**

OPTION 1: Random sampling of points within the Settlement with the use of the 7*30 methodology (UNICEF)



- **Process**

- The field teams collect information on a random sampling of clusters of 7 households and measure how much space they occupy (red is main shelter and green is second shelter). Total size = 18×16 big steps = 288 m². So each household occupies 41m²/household.

- **Possible problems**

- If the Perimeters are not taking properly, this will give us a very in-accurate household estimate as we will still not know the total amount of built up area.

- **Recommendations**

- Not to be used in this exercise.

OPTION 2: Random sampling of points within the Settlement with use of GPS device

- **Process**

- After the first phase of the project, we will randomly select points where the persons will need to go back and capture everybody within a radius of XXX meters. GPS devices can be programmed to beep/vibrate when you enter or exit a circle.
- Computer programs can be used to randomly select points within a given area and get very precise probability estimates.

- **Possible problems**

- It will be very difficult to pre-programme all GPS devices with this software (beep/vibrate) and therefore it will be difficult to use this methodology.

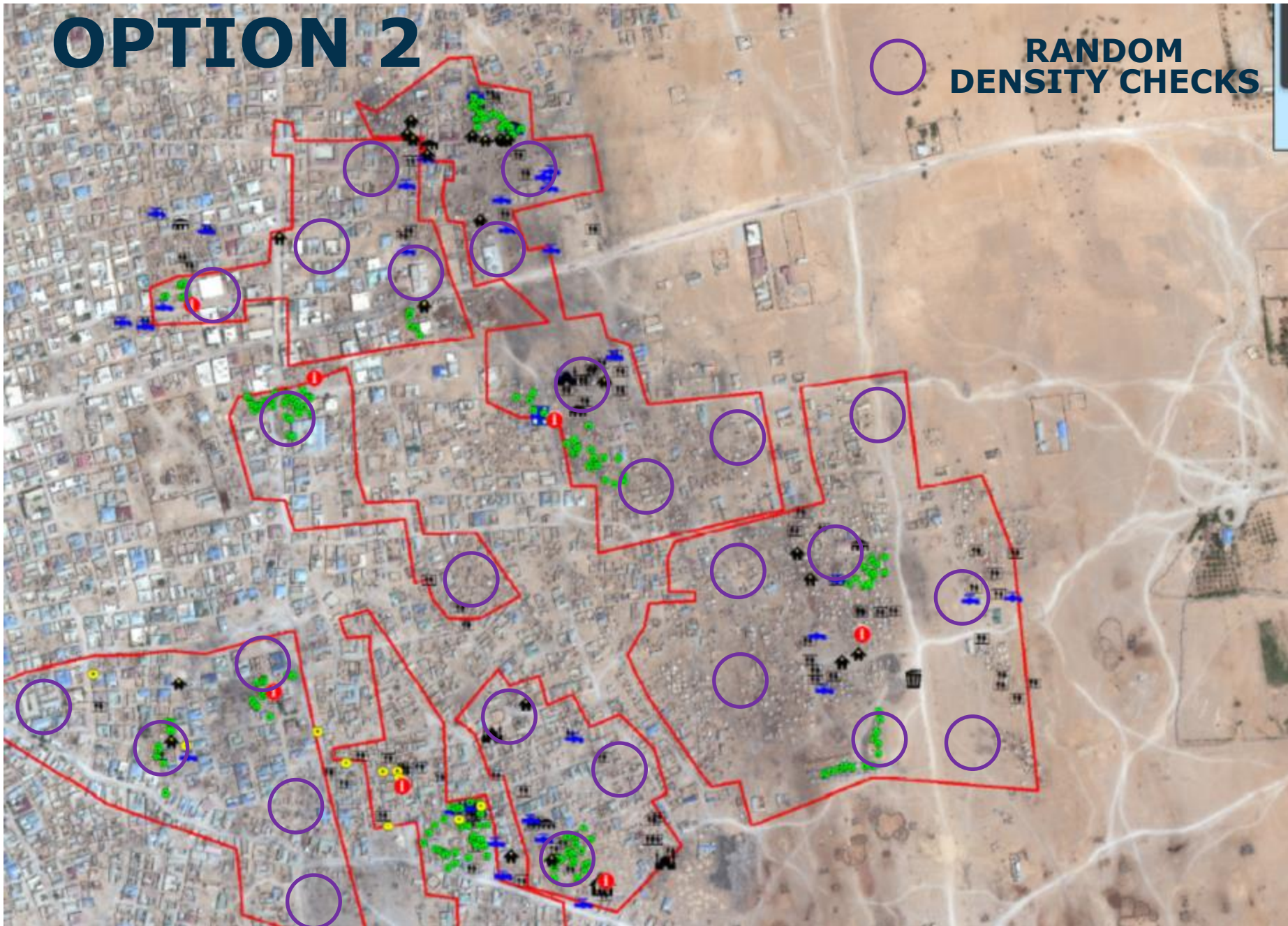
- **Recommendations**

- See with MFIELDWORK if this could be done in the future.

OPTION 2



**RANDOM
DENSITY CHECKS**



OPTION 3: Split up settlement into identifiable segments of similar size and random sampling of segments.

- **Process**

- After the first phase of the project, we will split up the settlements into identifiable segments of similar size.
- We will randomly select segments and map out everybody living in that segment.

- **Possible problems**

- What should be the perfect size of a segment? Minimum XXXm²/segment?
- Is this random enough to get a good confidence interval?

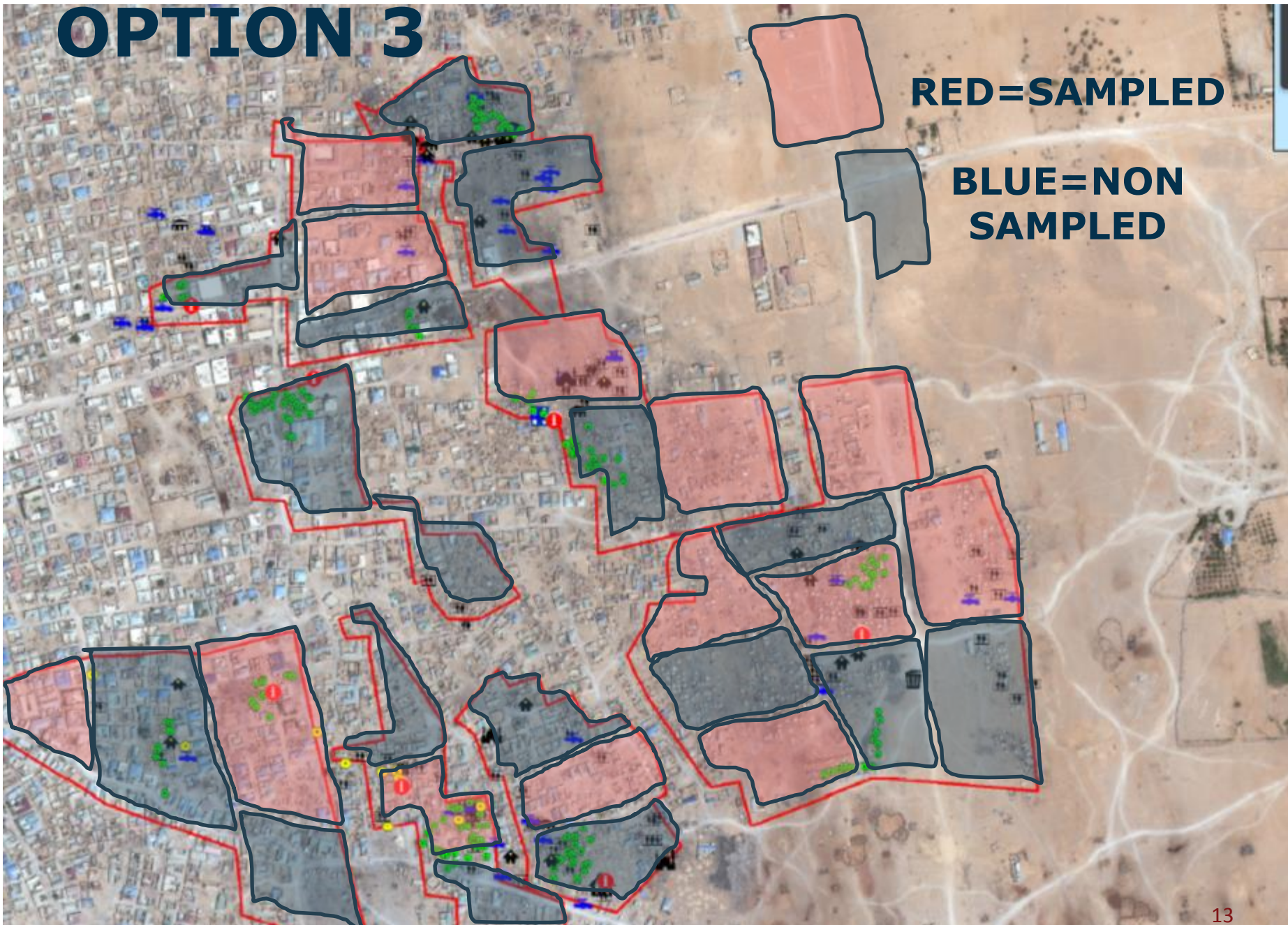
- **Recommendations and Action**

- For example, there are around 60.000 IDP persons in 40 settlements living in Bossaso . They occupy (perimeter surface area) 158 hectares (1.580.000m²).
- We could divide the settlements into segments of approximately 0.8 hectares (10.000m²). This would mean that we would have around 200 segments. In each segment, on average 300 persons will live in each segment (50 families).

OPTION 3

RED=SAMPLED

**BLUE=NON
SAMPLED**



OPTION 3: segments that the coordinators had taken were not very convincing.

The image shows a Google My Maps interface with a map of Bossaso, Somalia. The map is divided into several segments by black lines. Various locations are marked with colored circles and icons. A legend on the left side of the map lists the following layers:

- BOSSASO May 2014 (698 views)
- All changes saved in Drive
- Add layer + Share Preview
- densities verification
- FGD.xls
 - Uniform style
 - All items (40)
- density.xls
 - Styled by DENSITY_MAIN_SHELTER_TYPOLOGY
 - Buul_more_than_two_layers (244)
 - Corrugated_Iron_Sheet_shelter (228)
 - Buul_with_one_layer (187)

The map shows several locations labeled: Bulo Eley BB, Shabelle A, Shabelle B, Bariga Bossaso A, and Gribile. The legend indicates that red circles represent 'Buul_more_than_two_layers' (244), yellow circles represent 'Corrugated_Iron_Sheet_shelter' (228), and red circles represent 'Buul_with_one_layer' (187). The browser's taskbar at the bottom shows several open PDF files: SYPD proposal.pdf, DRC proposal.pdf, NRC proposal.pdf, IOM proposal.pdf, and ProjectProposal (3).pdf. The system clock shows 3:24 PM on 10/3/2016.

OPTION 4: Subjective way of looking at shelter density: LOW, MEDIUM AND HIGH shelter density

- **Process**

- Data to be collected on full enumerations in 10% of the settlements (URBAN-RURAL) and random sampling in the rest.
- People had received guidance on what low, medium and high shelter was and how to classify them.

- **Possible problems**

- All enumerators will look at shelter density differently. One person looking at all settlements.

- **Recommendations and Action**

- Very interesting, but statistically not good enough.

OPTION 4: Subjective way of looking at shelter density: LOW, MEDIUM AND HIGH shelter density

The screenshot shows a Google Maps interface with a map of Baidoa IDP camps. The map is overlaid with several settlement areas, each containing black human icons and yellow circles representing shelter density. The settlements are labeled: Kormari, Wadajir 2, Xanano 2, Xanano 3, Duceysane, Garasgoof, and Allayayn. A legend on the left side of the map is titled "Baidoa December 2014" and lists the following settlements under the "Settlement" category:

- Beladul amin2
- Adc1
- Adc2
- Tawakal Adc
- Adc2 tofwiq
- salama idale
- Idale 1
- Wadajir 4
- Kormari
- Xanano 2

The browser's address bar shows the URL: <https://www.google.com/maps/d/edit?mid=1GNwiaVhociiFB8aNxoME3FqxfQ8>. The browser's taskbar at the bottom shows several open files: SYPD proposal.pdf, DRC proposal.pdf, NRC proposal.pdf, IOM proposal.pdf, and ProjectProposal (3).pdf. The system tray at the bottom right shows the time as 3:31 PM on 10/3/2016.

OPTION 5: Go back to the stone age, use a rope

- **Process**
 - Random sampling of different areas in each settlement
 - Take a rope of 100 meters and make a circle
 - Sample all people inside the circle.
- **Possible problems**
 - Seems to be the easiest to roll out
- **Recommendations and Action**
 - How can we make this more systematic and statistical

OPTION 5: Subjective way of looking at shelter density: LOW, MEDIUM AND HIGH shelter density

The screenshot displays a Google My Maps interface for a map titled "Garowe May 2016" with 85 views. The map shows several irregular polygons representing different areas, each containing red circular markers indicating shelter density. The polygons are labeled as follows:

- Polygon 23 (Tawakal)
- Lafo Barkato
- 100m rope1 bn
- 100m rope1 ym
- Yemen
- 100m rope1 c1
- 100m rope2 c1
- 100m rope1 c4
- 100m rope1 c1

The map also shows various icons for kiosks, markets, and other facilities. The left sidebar lists the following layers:

- kiosks and markets
 - Styled by B/geo_data_capture_facility
 - Kiosk (305)
 - Market (3)
- latrines
- others
 - Styled by B/geo_data_capture_facility
 - Solar_lighting_post (77)
 - Garbage_collection_point (19)
 - Mosque (12)
 - Community_Centre (6)

The bottom of the screen shows a Windows taskbar with several open applications: SYPD proposal.pdf, DRC proposal.pdf, NRC proposal.pdf, IOM proposal.pdf, and ProjectProposal (3).pdf. The system clock indicates the time is 3:35 PM on 10/3/2016.