UNHCR & Crowdsourcing

A partnership with the Stand By Task Force

The Standby Task Force
Somalia Phase 1: Trial Run
Somalia Phase 2: Current
Next Steps & Considerations

Who is SBTF?

- 678 volunteers from all over the world (116 on the Satellite Team)
- Volunteers are students, humanitarian sector professionals, technologists, geographers, remote sensors, translators, writers, reporters... a virtually endless skill-set.

UNHCR & Satellite Imagery Crowd Processing

Goal of the UNHCR / SBTF partnership

- **To test the feasibility of crowdsourcing rapid IDP shelter enumeration to support population estimates in Somalia.**
- Satellite imagery can identify IDP shelters, whose occupancy rates can be used to calculate population.
- Certain types of shelter are very hard to identify using automated methods, which the human eye can easily detect.
- This is a labour intensive process, so crowdsourcing is a possible solution.

Somalia Phase 1: trial run

Objectives:

- Establish a volunteer force and gauge their potential output.
- Establish source of satellite imagery (Thanks to Digital Globe)
- Develop and test an online platform for manual identification of IDP shelters (Thanks to Tomnod)
- Test Tomnod's CrowRank algorith: an automatic verification process through which all features must be tagged by 3 independent volunteers.

Results:

- 56 SBTF Mapsters analyzed a whopping 3,700+ individual images and tagged more than 9,400 shelters !
- Lessons learned were used to make modifications to the platform and workflow.

Cf http://irevolution.net/2011/08/31/results-crowdsourcing-sat-imagery-somalia/

Somalia Phase 2: Objectives

Compare of crowdsourcing with 2 other traditional processes of IDP shelter identification in the Afgooye Corridor (Somalia)

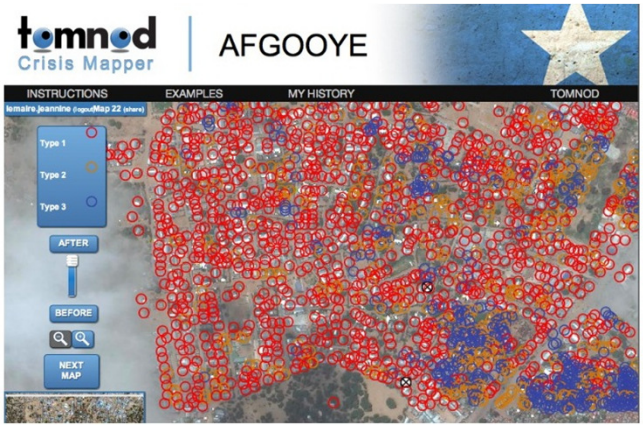
- Automatic Building recognition (a parallel test with the European Joint Research Center)
- Non-crowd processing (cf. work with UNOSAT)

Develop a workflow between UNHCR and the SBTF:

- UNHCR provide the area of interest through field reports from the Somalia Protection Monitoring Network.
- Volunteers would identify shelters of different types based on field reports
- Resultant data are transferred to a UNHCR platform for the final dissemination: UNHCR retains complete control of data to mitigate security concerns.
- UNHCR uses the data to develop population estimates in comparison to traditional sources.

Interim Results

253,711: total number of shelters identified by 168 volunteers after processing 3,909 satellite images in just 5 days. A quarter of a million shelters were identified in 120 hours.



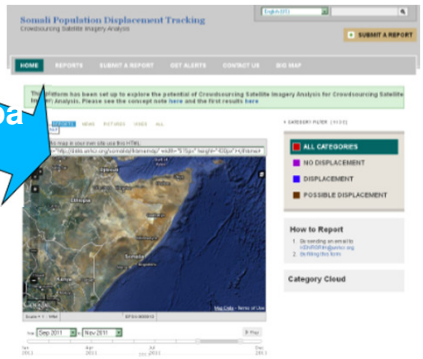
http://mapper.tomnod.com/afgooye/

Next Steps

1. Upload processed data to UNHCR platform

Tomnod Administrative view shows the processed image tiles (in yellow)
http://mapper.tomnod.com/afgooye/admin/

upload



UNHCR Ushahidi platform)
http://data.unhcr.org/somalia

2. Compare data to other sources to test accuracy

Challenges

1. Ensure continued access to satellite imagery
2. Ensure that we maintain the Volunteer motivation (maintain feedback loop)
3. Examine other contexts in which this approach would be useful