



unitar

United Nations Institute for Training and Research

UNOSAT, Open Data, and the Crowd

Lars Bromley, Analyst

lars.bromley@unitar.org

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UNOSAT

UNOSAT Focus

- Operational imagery analysis and mapping
- Disasters and relief; Human security and rights; Development and land use planning
- About 35 'activations' per year ranging from single map products to longer reports
- Ultimately concerned with meeting UN and NGO information needs

Open Data

- For infrastructure data we'll use Open Street Map, Google Map Maker, and other sources, sometimes together
- We have no capacity or mandate to really enter into licensing negotiations, especially during emergencies
- Relations with our vendors and data providers are key so we absolutely try to adhere to their requirements
- We respect the open data ethic and advantages but also recognize the utility of commercial resources

Engaging the Crowd

- UNOSATs definition of crowdsourcing ranges from “true” crowdsourcing to collaborative distributed mapping
- First 'big' engagement with the crowd was a distributed image analysis project in May 2008 for Cyclone Nargis
- Daily utilization of basemap data from Google Map Maker and Open Street Map
- Proactive basemap generation
- Free app for taking geotagged photos in disaster situations
- Conversion of 'generic' pictures/video to geo-data

Sources of Crowds / Data

- GISCorps – founded in 2003, provides GIS volunteers for a wide variety of non-profit and humanitarian activities.
- Google Map Maker – a project by Google to digitize their considerable imagery via volunteers (available on request)
- Open Street Map - “the free editable map of the world” based on volunteer generated data (freely downloadable)
- Standby Task Force – a volunteer group specifically focused on crises
- Other sources include universities, professional networks, ‘random’ public

Cyclone Nargis

- May 2008, UNOSAT activated
- Engaged GISCorps to provide volunteers for a distributed imagery analysis exercise
- 20 initial volunteers around the world reviewed post-cyclone imagery using Google Earth to identify pagoda's, infrastructure (villages, bridges), damage, and other features
- Significantly hampered by clouds of course but digitized 6,500 features within a week

Cyclone Nargis

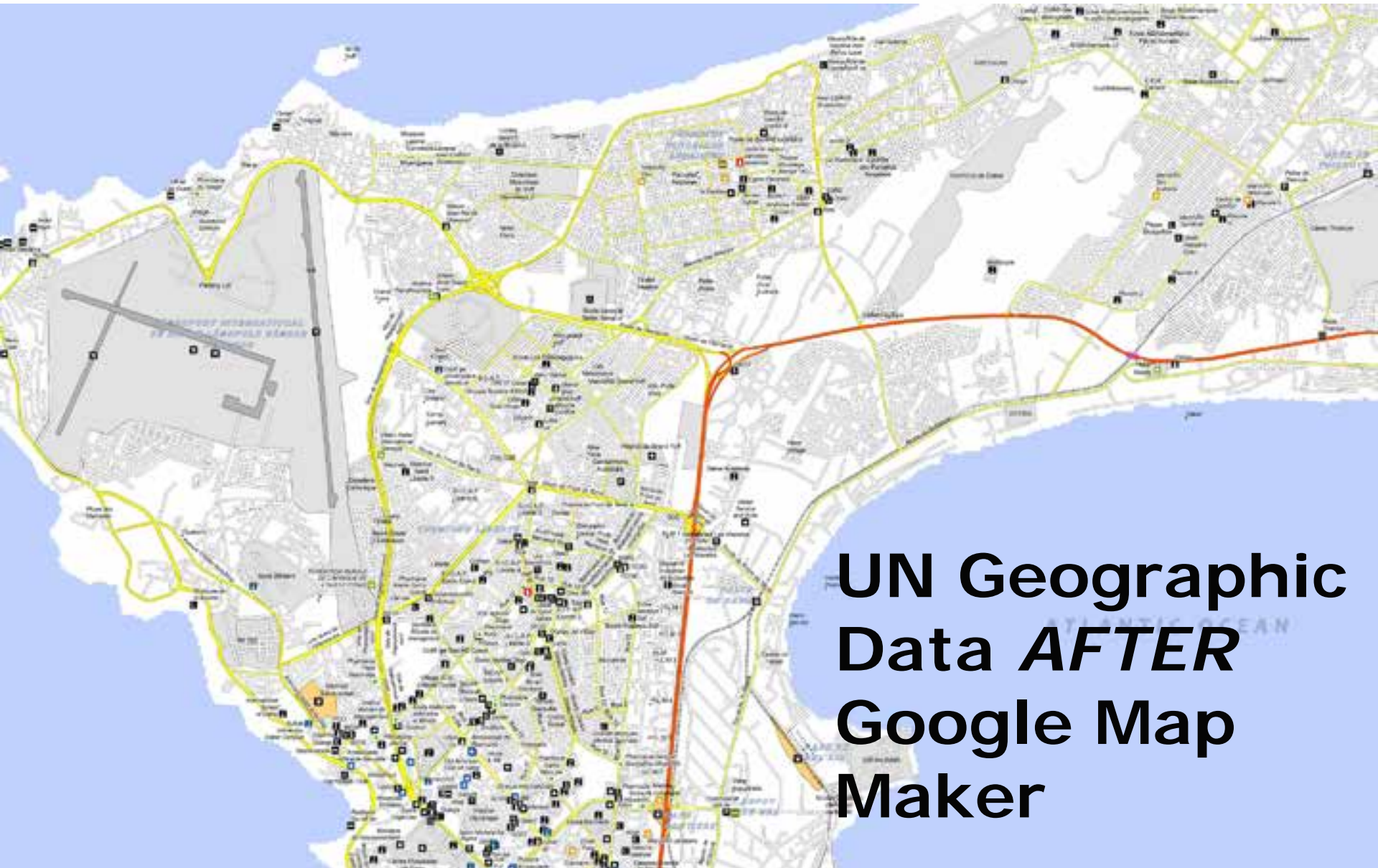
- Secondary group of 20 volunteers engaged to review pre-cyclone imagery for buildings and pagodas
- Pre-disaster imagery assessment remains a key basis for UNOSAT use of crowdsourcing today
- Lessons learned were extensive:
 - ┆ recognize limits of the crowd process
 - ┆ Define, document, and train
 - ┆ replacing technical challenges with 'people' challenges?

Basemap Generation



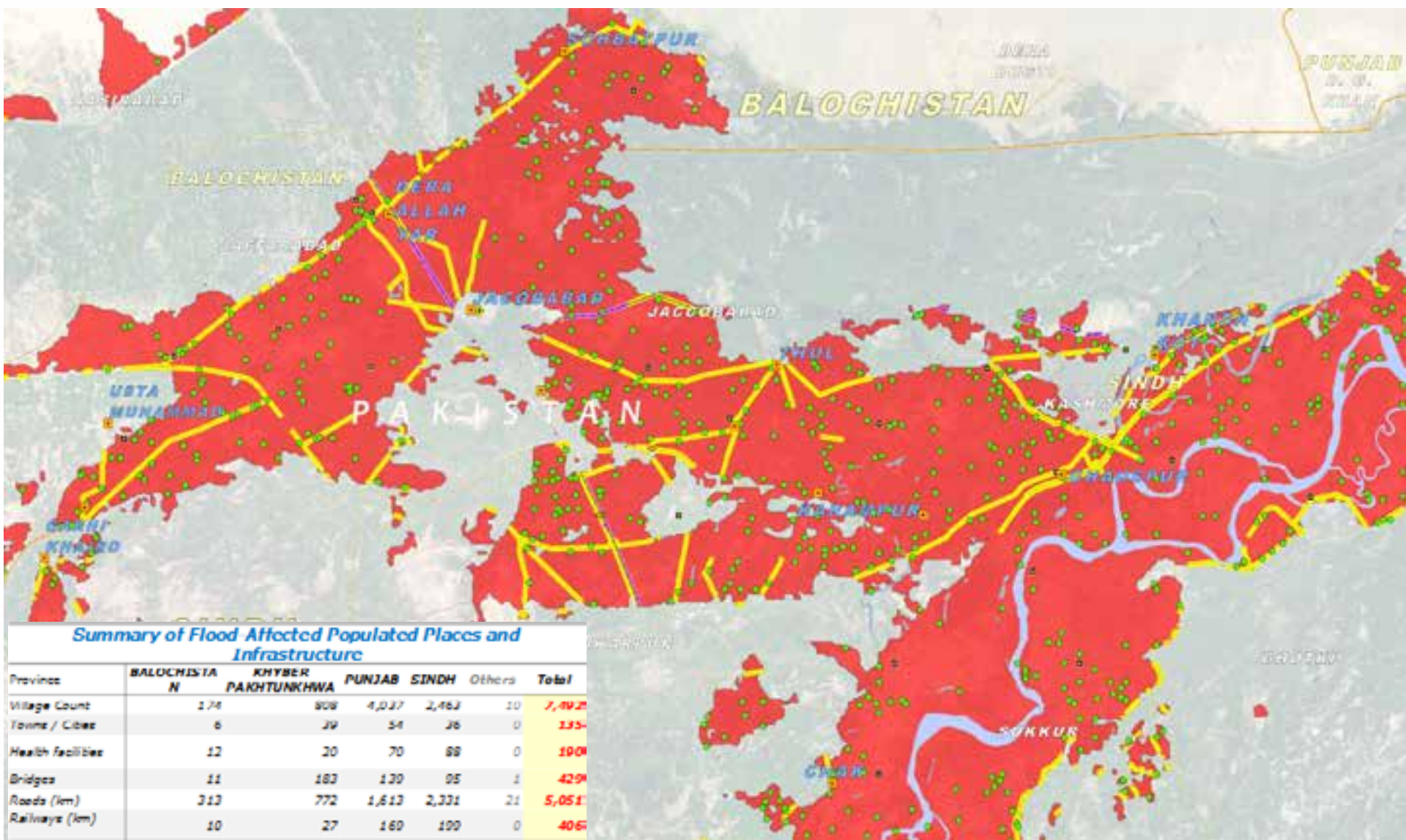
**Dakar, Senegal: UN
Geographic Data *BEFORE*
Google Map Maker**

Basemap Generation



**UN Geographic
Data *AFTER*
Google Map
Maker**

Google Map Maker and flood damage analysis



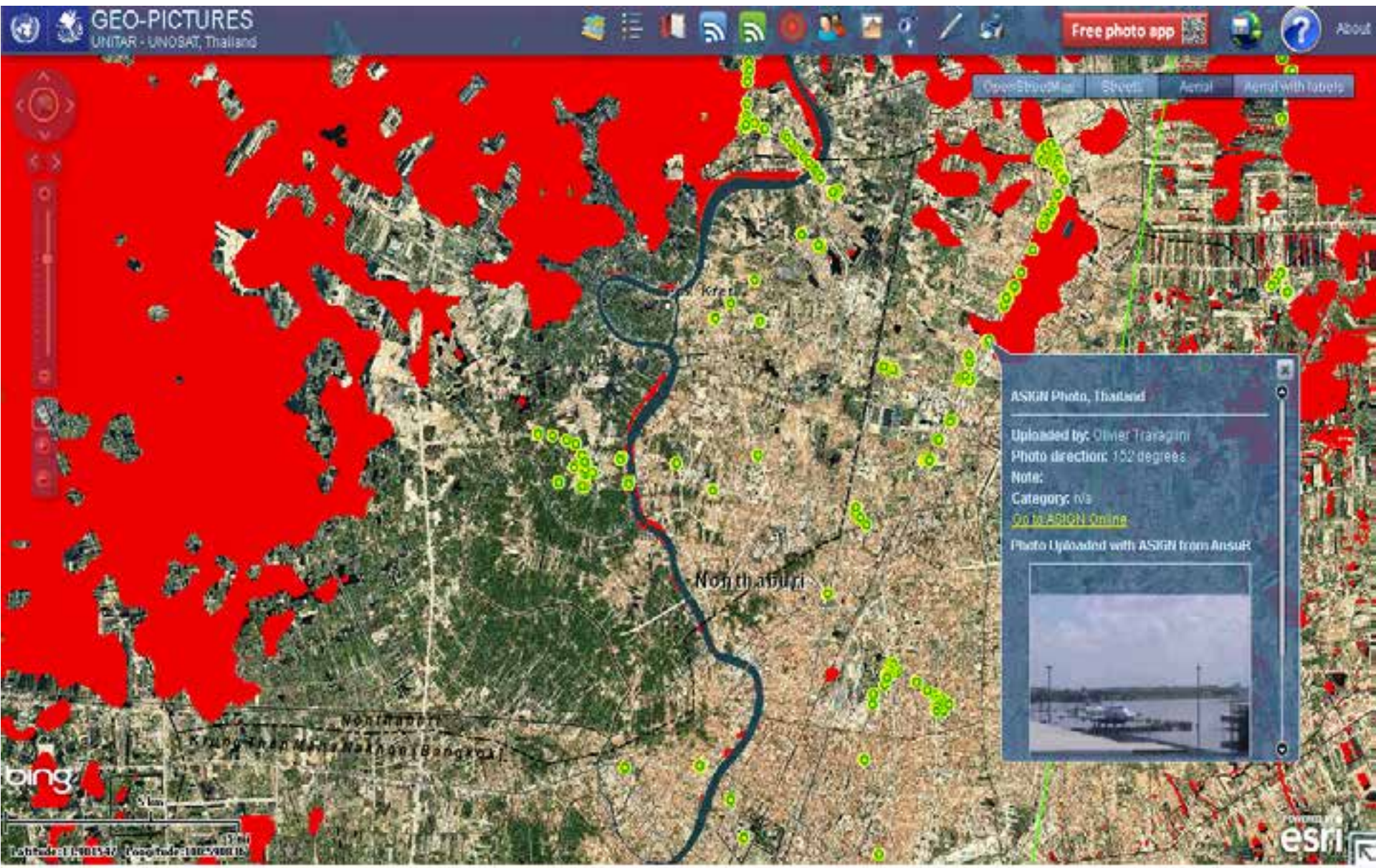
Kyrgyzstan Ethnic Conflict

- UNOSAT initially provided ongoing analysis of conflict and affected areas, then relief support
- UNOSAT extended its imagery license for DigitalGlobe scenes to OSM (one time)
- OSM digitized roads and building footprints to facilitate relief work by Red Cross especially
- Led to an agreement with Spot Image for UNOSAT to extend its license to OSM when Space Charter activated

Proactive Basemap Generation

- Pre-emptive basemap generation possible by calling on volunteer communities
- UNOSAT and Google partnered on this in 2011 concerning Sudan and the referendum process
- In its first two weeks the effort digitized almost 10,000 km of roads, thousands of other features
- Create useful data for a new country
- Initiate an advocacy activity by directly involving people
- Much of the OSM operating procedure involves these principals as well

ASIGN Application for Android





Cybermappr: crowdsourced geotagging of visual media

cybermappr.unige.ch

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Mission Community Tutorials Results

Citizen Cybercience Centre

larsborgmeyer Sign out

Geotag Libya: Help us gather and geotag photos of the conflict in Libya

- 1 Submit Photos**
Submit web pages with photos showing damaged buildings in Libya.
[Submit Photos](#)
- 2 Filter Photos**
Verify that submitted photos show damaged buildings in Libya.
[Filter Photos](#)
- 3 Geotag Photos**
Geotag or review photos that other people geotagged.
[Geotag Photos](#)
- 4 Link Photos**
To help geotag accurately, match the photos that show the same area.
[Link Photos](#)

Mission

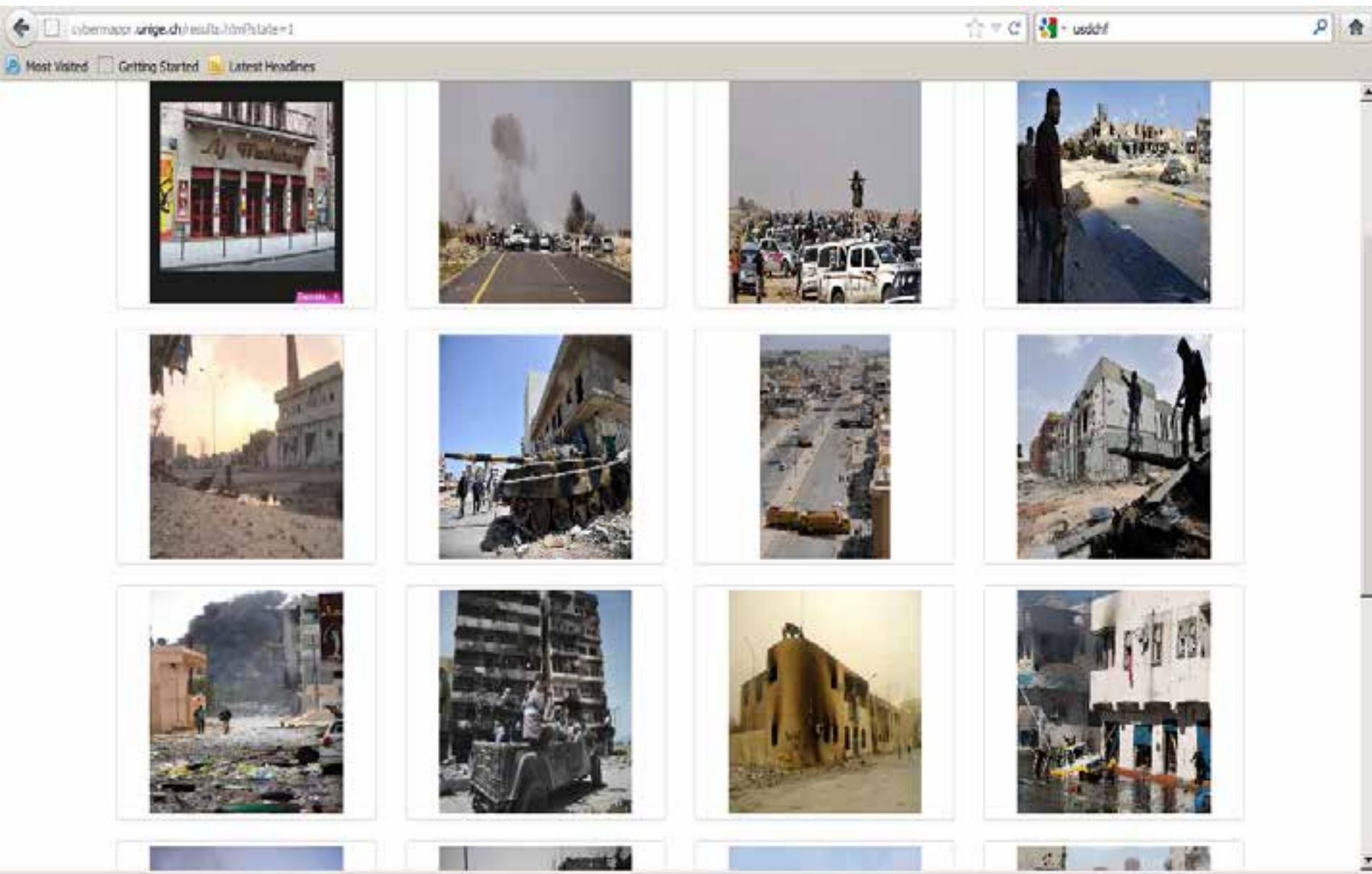
Libya: the war is over, but the reconstruction is just starting.

Acquiring the best available information to inform reconstruction efforts is a huge challenge and is a multi-part process involving many different data sources and tools.

UNITAR/UNOSAT is a technology-intensive programme delivering imagery analysis and satellite solutions to relief and development organizations within and outside the UN system. UNOSAT is working to inform the many national and international organizations involved in reconstruction with the best possible information sources. One method of damage assessment used by UNOSAT and other organizations is remote assessment via satellite imagery (comparing before /after).



Cybermappr: crowdsourced geotagging of visual media



Cybermappr: crowdsourced geotagging of visual media

cybermappr.unige.ch/geotagging_tasks/296

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Geotagging Task completeness

There are still 176 photos to geotag.





photo #176 published in this web page

Task: geotag the photo

Read the [web page 1](#) publishing the photo to find some clues about its location.

Type the name of the area to select it OR Create it on the map

note When typing the name will automatically retrieve the list of related areas created by volunteers



Full size map

Switch to the satellite images of Tripoli Misrata during the conflict by clicking on the buttons at the top of the map.

Cybermappr: crowdsourced geotagging of visual media



Geotag Libya: Help us gather and geotag photos of the conflict in Libya

Subtask 1: recommend new Links

Subtask 2: review recommended Links

A volunteer indicates that both photos have a shared visual landmark. Do you agree?



Reviewed by 6 volunteers



Photo ID: 434



landmark

Lars Bromley
lars.bromley@unitar.org
www.unitar.org/unosat



United Nations Institute for Training and Research
Institut des Nations Unies pour la Formation et la Recherche
Instituto de las Naciones Unidas para Formación Profesional e Investigaciones
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Организации Объединенных Наций
معهد الأمم المتحدة للتدريب والبحث
联合国训练研究所



unitar

United Nations Institute for Training and Research

Palais des Nations
CH-1211 - Geneva 10
Switzerland
T +41-22-917-8455
F +41-22-917-8048
www.unitar.org