



# A Conversation with...

**Lee Schwartz, The Geographer**  
**U.S. Department of State**

*Office of the Geographer and Global Issues*  
*Bureau of Intelligence and Research*



**Hunter College**  
**New York, NY**  
**April 22, 2016**





# Disclaimer

The material in this presentation does not represent official views of the U.S. Department of State.

*Mapping the World...*

*Office of the Geographer and Global Issues  
Bureau of Intelligence and Research*

*Open/Democratic Data...*



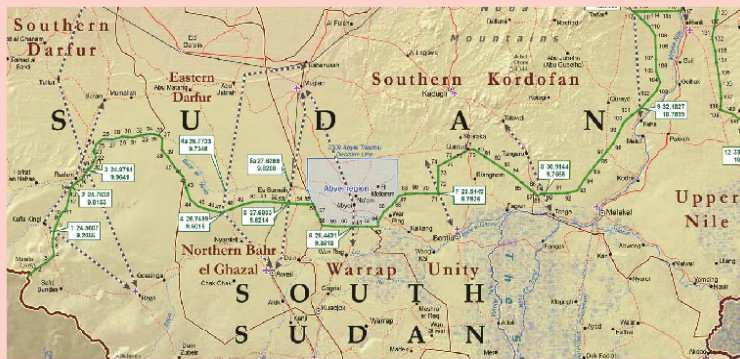
# The Geographic Information Unit (GIU)

Office of the Geographer and Global Issues • U.S. Department of State

## International Boundaries

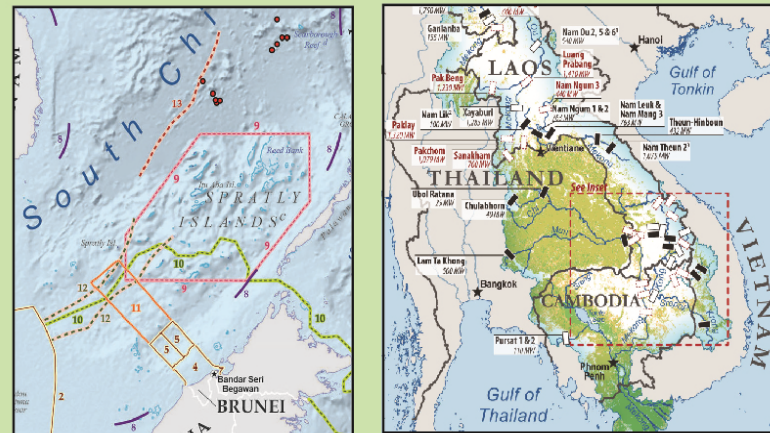
As the U.S. Government authority on international boundary depiction and policy, the GIU:

- Coordinates production of the **Large Scale International Boundaries (LSIB)** dataset; most accurate worldwide digital data source, available to the public.
- Advises Department of State policymakers on international boundaries and disseminates international boundary policy to the U.S. Federal Government.



## Mapping and GIS Support

The GIU supports the Department of State with mapping, and with geographic information systems (GIS) analysis and production, to further foreign policy objectives.



## Geographic Names



GIU represents the Department on the **U.S. Board on Geographic Names**, and chairs the Board's Foreign Names Committee.

## Sovereignty Issues

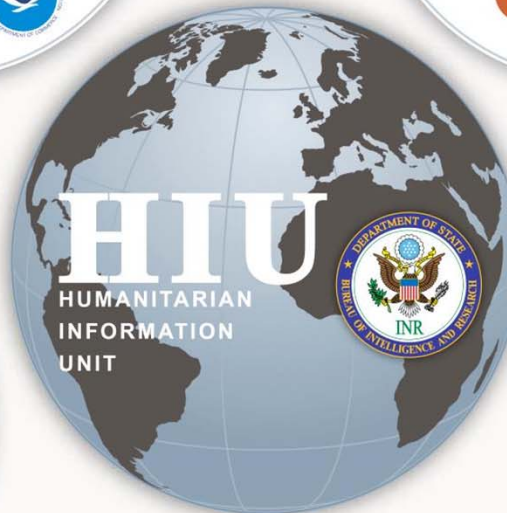
The GIU advises Department of State policymakers on political sovereignty issues with decades of supporting historical records; disseminates mapping policy to U.S. Government cartographers.





# HIU

Building a global information network of institutions and individuals



**Leveraging USG Geographic and Satellite Data**

- NGA, USGS, NOAA
- High resolution commercial satellite imagery

**Natural Disasters**

- Preparedness and risk reduction
- Recovery and resilience
- Emergency response

**Open Data**

- Linked with White House Open Government Initiative
- Open data and open platforms for improved crisis mitigation and response

**Partner Engagement**

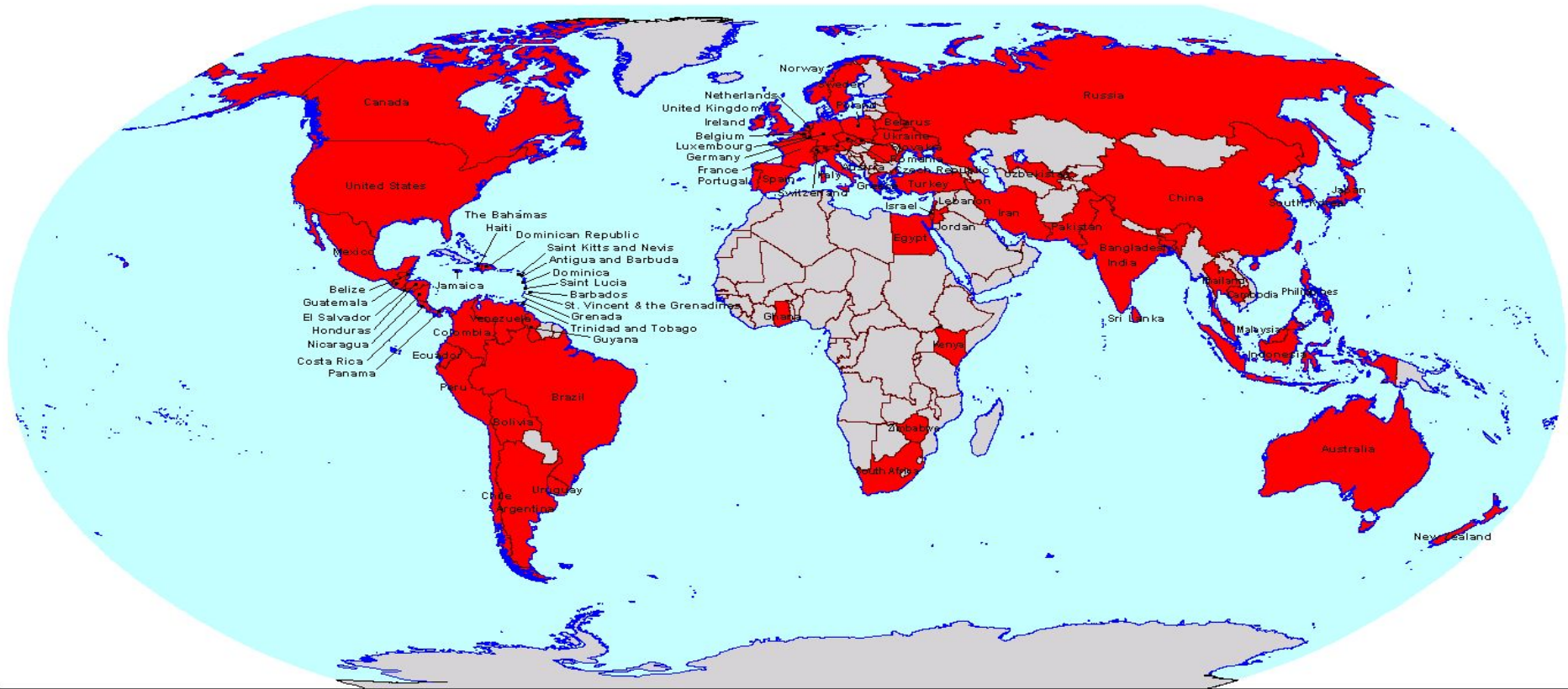
**GeoDiplomacy**

- Digital diplomacy through collaborative mapping
- Crowdsourcing new data
- Empowering local communities

The Humanitarian Information Unit (HIU) is a division of the Office of the Geographer and Global Issues in the Bureau of Intelligence and Research, U.S. Department of State. HIU is an interagency center staffed by personnel from the U.S. Department of State (DoS), U.S. Agency for International Development (USAID), U.S. Department of Defense (DoD), National Geospatial-Intelligence Agency (NGA), and other technical and specialist personnel.

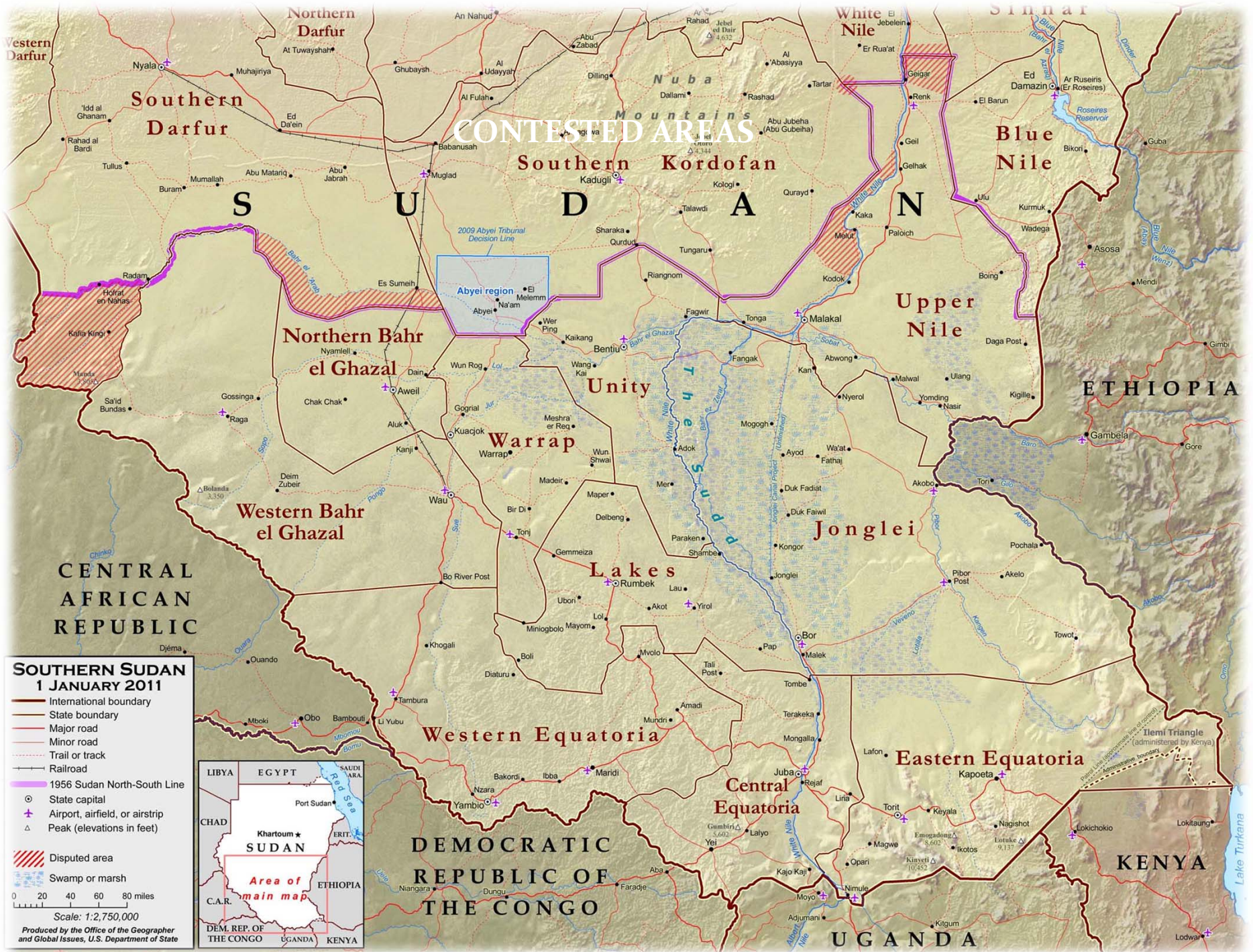
# “Telling the Truth (or Lying) With Maps”

## ATTACK AGAINST THE WORLD Countries With Dead or Missing Citizens From the September 11 Attacks



Antigua and Barbuda Argentina Australia Austria Bahamas Bangladesh Barbados Belgium Belarus Belize Bolivia Brazil Cambodia Canada Chile China Colombia Costa Rica Czech Republic Dominica Dominican Republic Ecuador Egypt El Salvador France Germany Ghana Greece Grenada Guatemala Guyana Haiti Honduras India Indonesia Iran Ireland Israel Italy Jamaica Japan Jordan Kenya Lebanon Luxembourg Malaysia Mexico Netherlands New Zealand Nicaragua Norway Pakistan Panama Peru Philippines Poland Portugal Romania Russia Saint Kitts and Nevis Saint Lucia Saint Vincent and the Grenadines Slovakia South Africa South Korea Spain Sri Lanka Sweden Switzerland Thailand Trinidad and Tobago Turkey Ukraine United Kingdom Uruguay Uzbekistan Venezuela Zimbabwe





**SOUTHERN SUDAN  
1 JANUARY 2011**

- International boundary
- State boundary
- Major road
- Minor road
- Trail or track
- Railroad
- 1956 Sudan North-South Line
- State capital
- Airport, airfield, or airstrip
- Peak (elevations in feet)

Disputed area

Swamp or marsh

0 20 40 60 80 miles

Scale: 1:2,750,000

Produced by the Office of the Geographer and Global Issues, U.S. Department of State





# Eritrea-Ethiopia Boundary (Ura Plateau)

The town of Ura was put in Eritrea, but it is impossible to get to it without coming from Ethiopia. Moreover, its school and church are on the Ethiopian side.

Kershibti

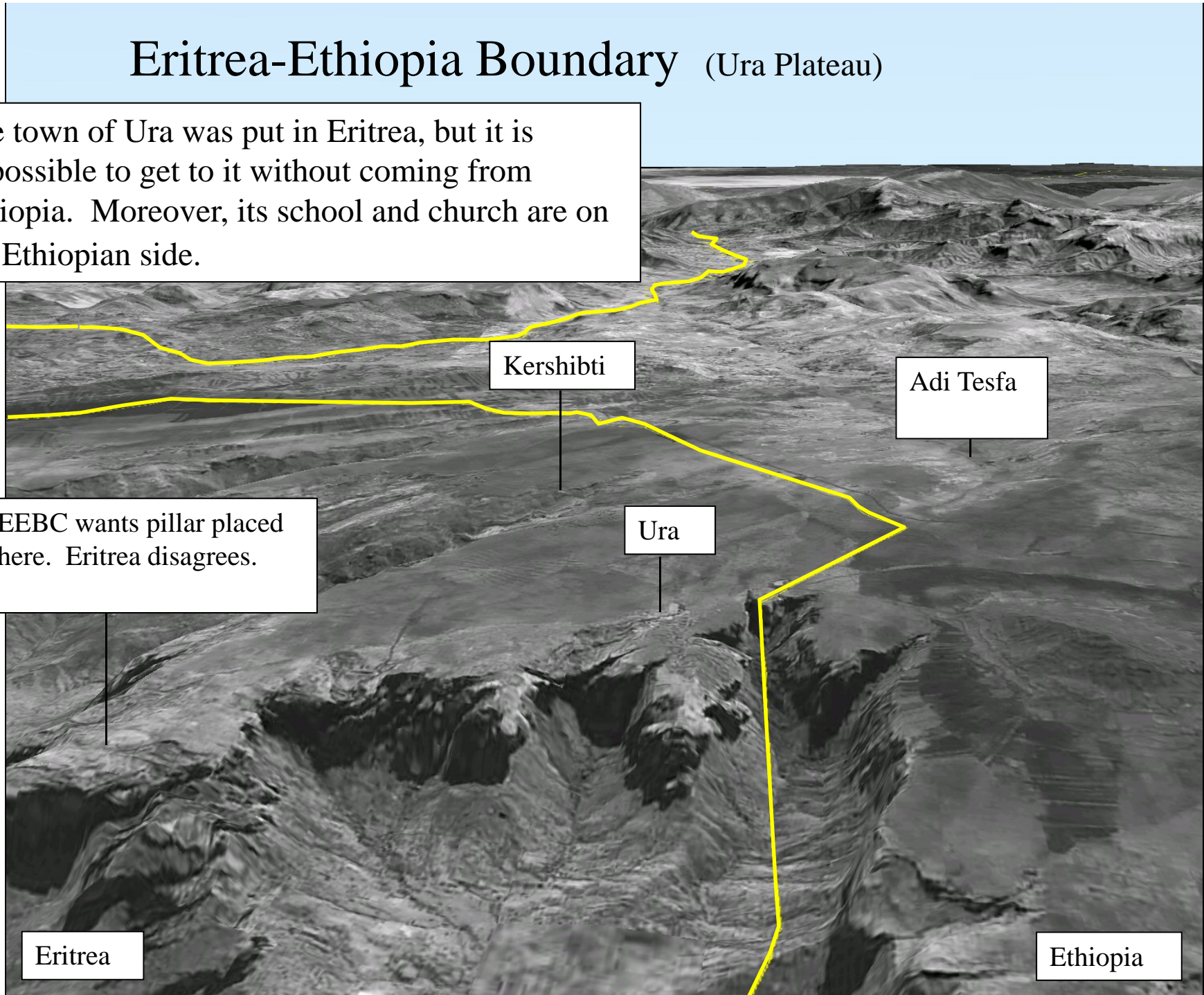
Adi Tesfa

EEBC wants pillar placed here. Eritrea disagrees.

Ura

Eritrea

Ethiopia







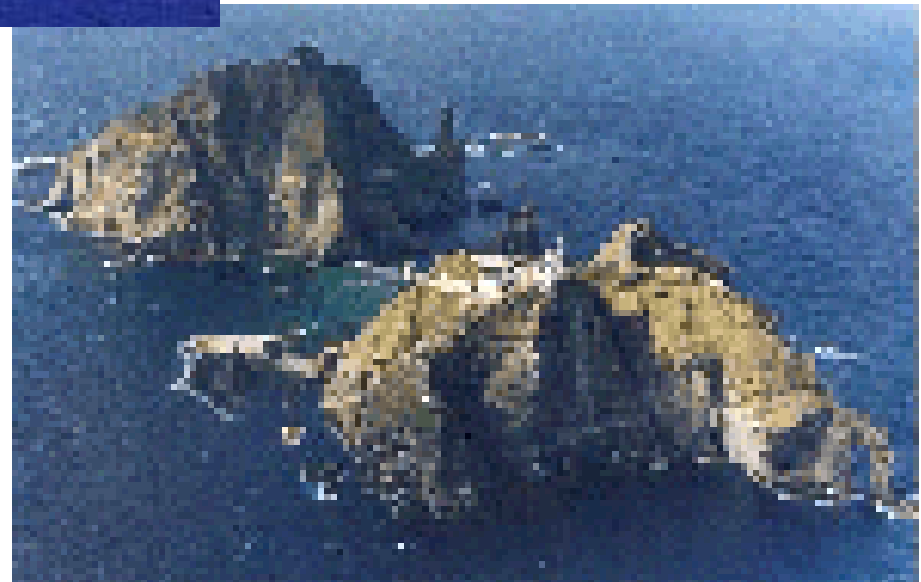


## Liancourt Rocks

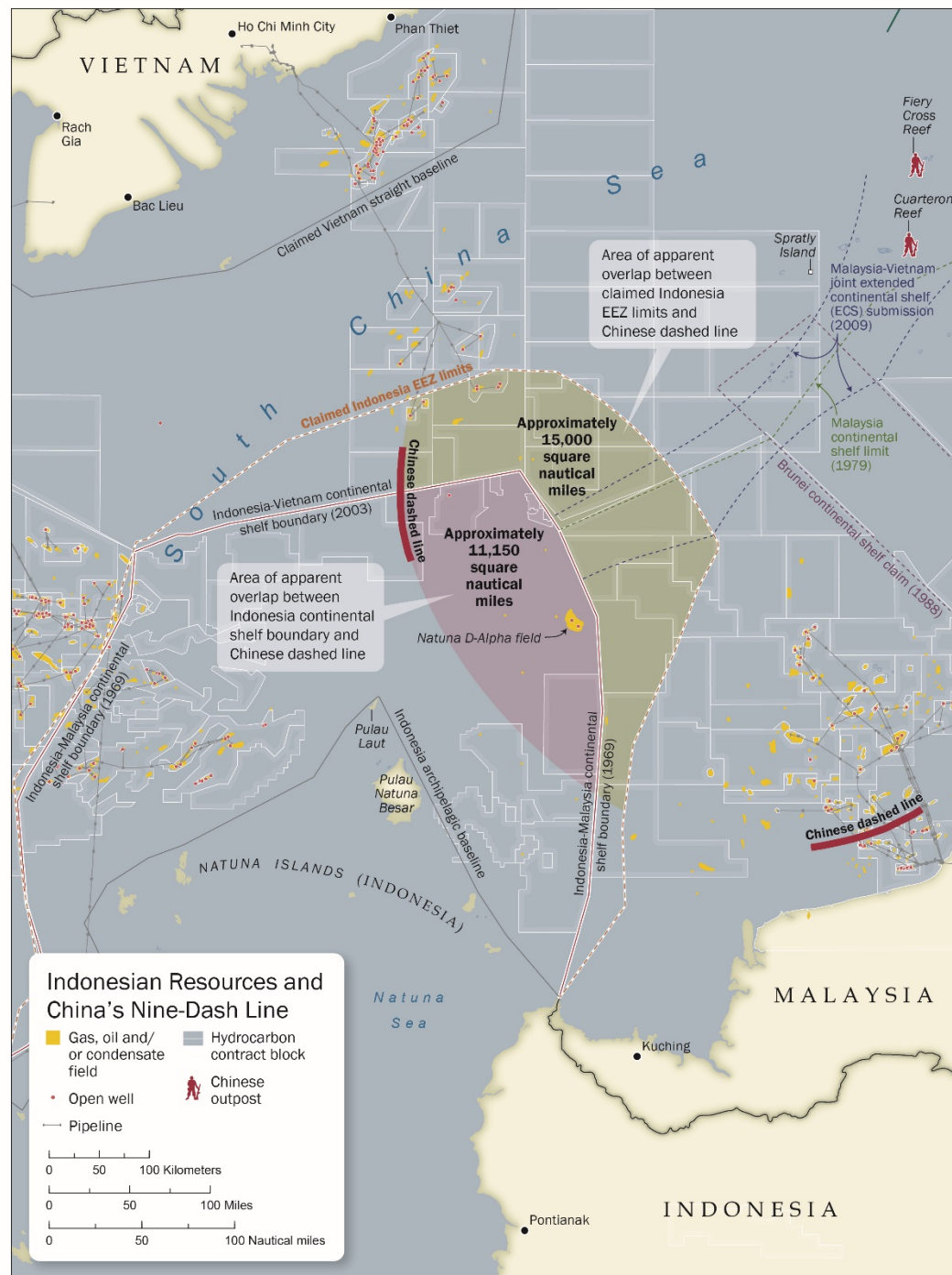
(U.S. Board on  
Geographic Names  
sole official name)

Variant names:

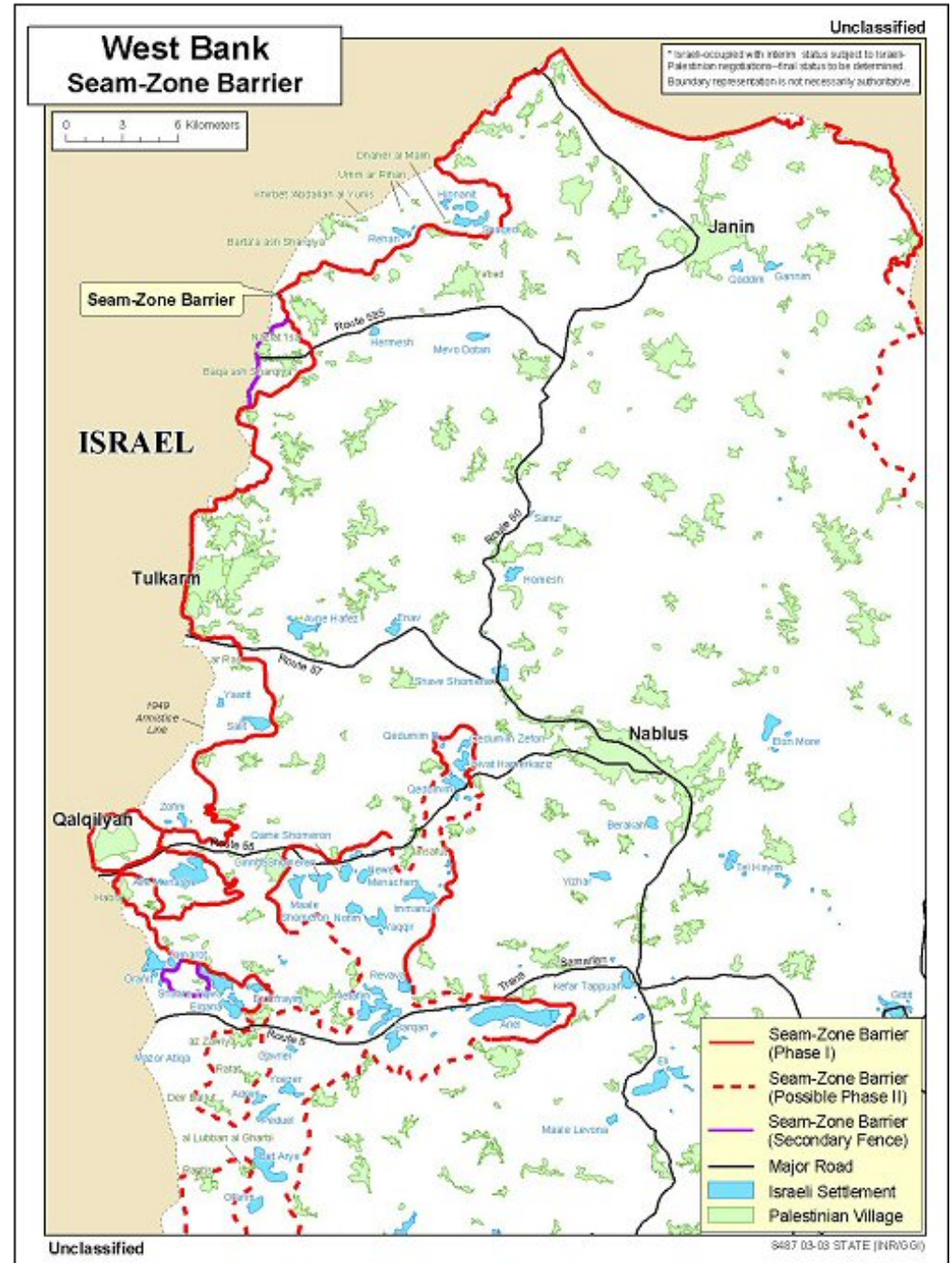
Hornet Islands,  
Take-shima, Take Sima,  
Matsu-shima,  
Tok-do, Dok-to, Dok-do,  
Dog-do, Chuk-to







# Support for Diplomacy: Analysis of Israeli and Palestinian Actions in the Occupied Territories





# Fieldwork: Real-Time Georeferenced Sitreps

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## Iraq:

**Humanitarian Update**  
**DART Report: March 30-31, 2003**

### Legend

- + DART Report
- 6
- 7
- 8
- + Active Airfield
- River
- Coastline
- Intl. Boundary
- Intl. Boundary Overlay
- Dual Divided Highway (Casing)
- Dual Divided Highway
- Primary Road
- Secondary Road
- Railroad
- Built-up Area
- Open Water
- Inland Water
- Destroyed Marsh and Wetlands
- Al Sulaybiyat Depression



Information based on (OCHA) Rapid Assessment forms.

Sources: NIMA Reference Map, DART Team member

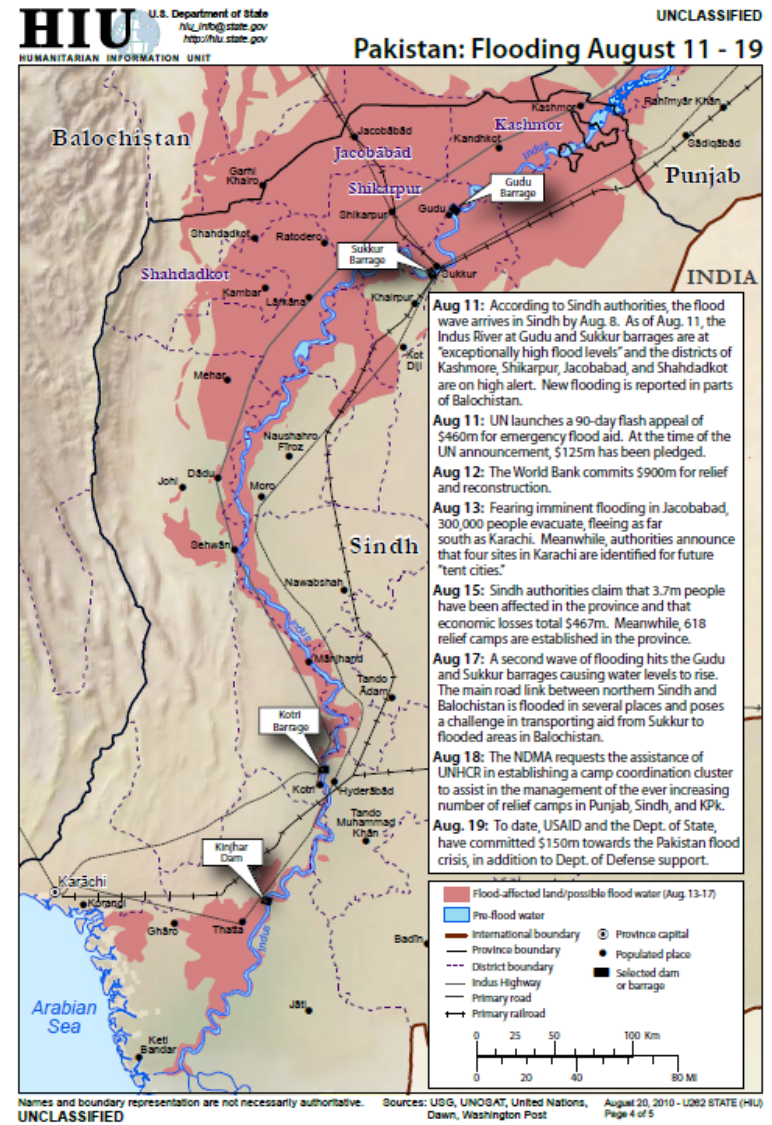
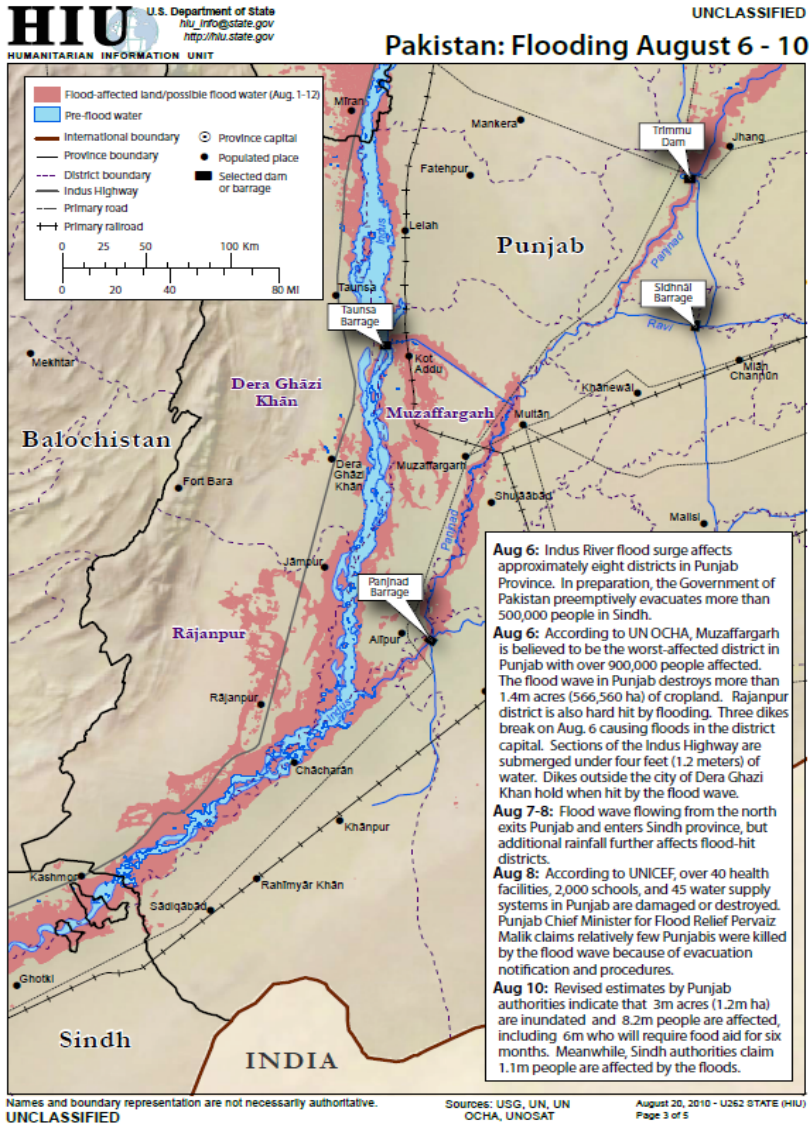


**United States Department of State**  
**Bureau of Intelligence and Research**  
**Humanitarian Information Unit (HIU)**

**Department of State**  
**2A-44, Room 602**  
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**Washington, DC 20547**  
**Phone: 202-205-6712**

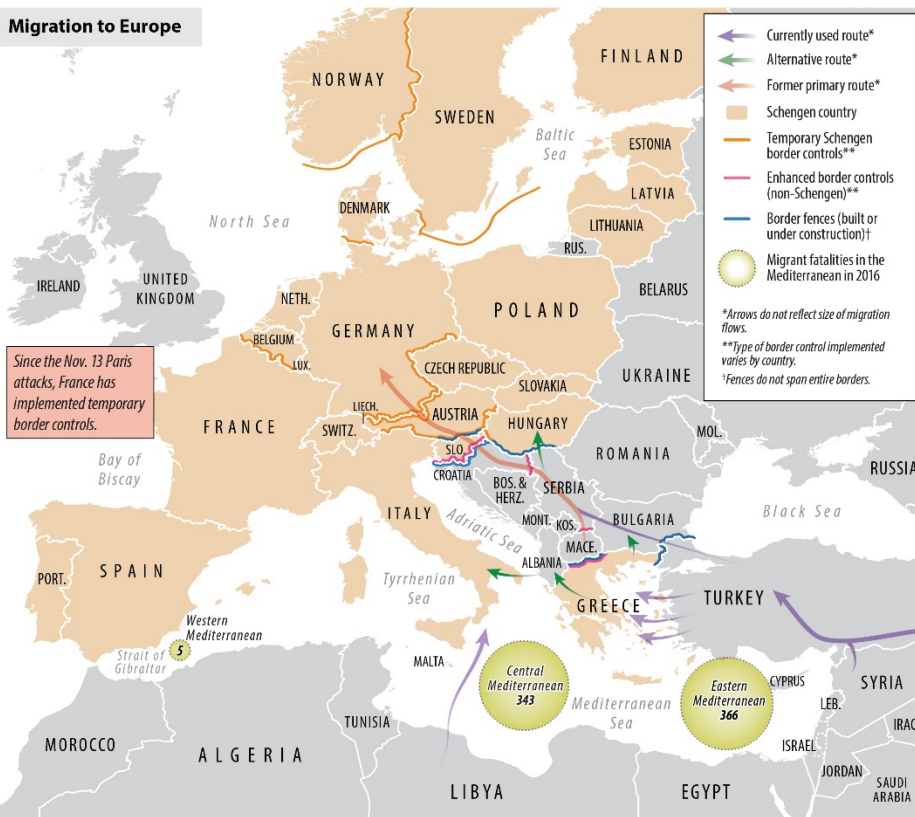


# Crisis Support Mapping



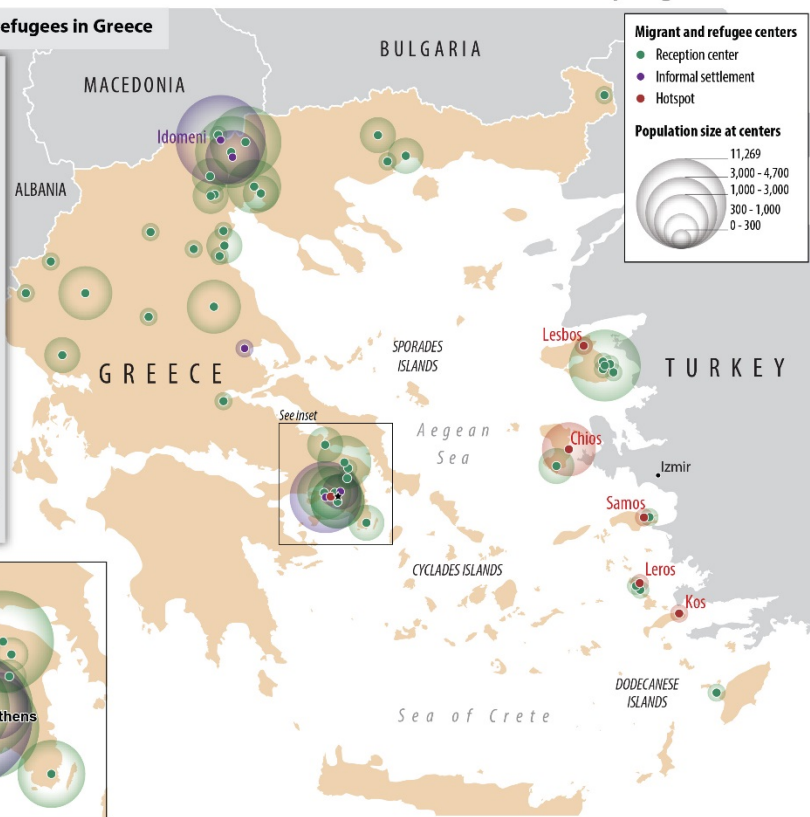
## Europe Migrant and Refugee Crisis: Spotlight on Greece

### Migration to Europe

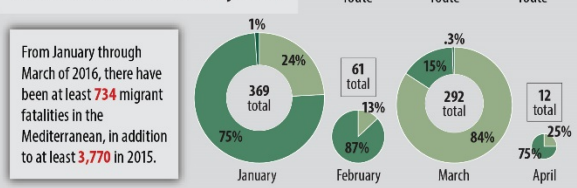


### Migrants and refugees in Greece

Of the **57,812** migrants and refugees reportedly in Greece and the Balkan states, **53,063** currently are in Greece. Since the implementation of the EU-Turkey deal, **46** asylum seekers have been relocated from Greece, in addition to the **615** relocated since the September 2015 decision to relocate **160,000** asylum seekers from Italy and Greece, and **79** Syrians have been resettled from Turkey to European states.



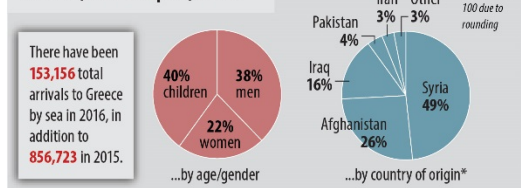
### Known fatalities in the Mediterranean in 2016, by route



### Arrivals to Greek islands in 2016



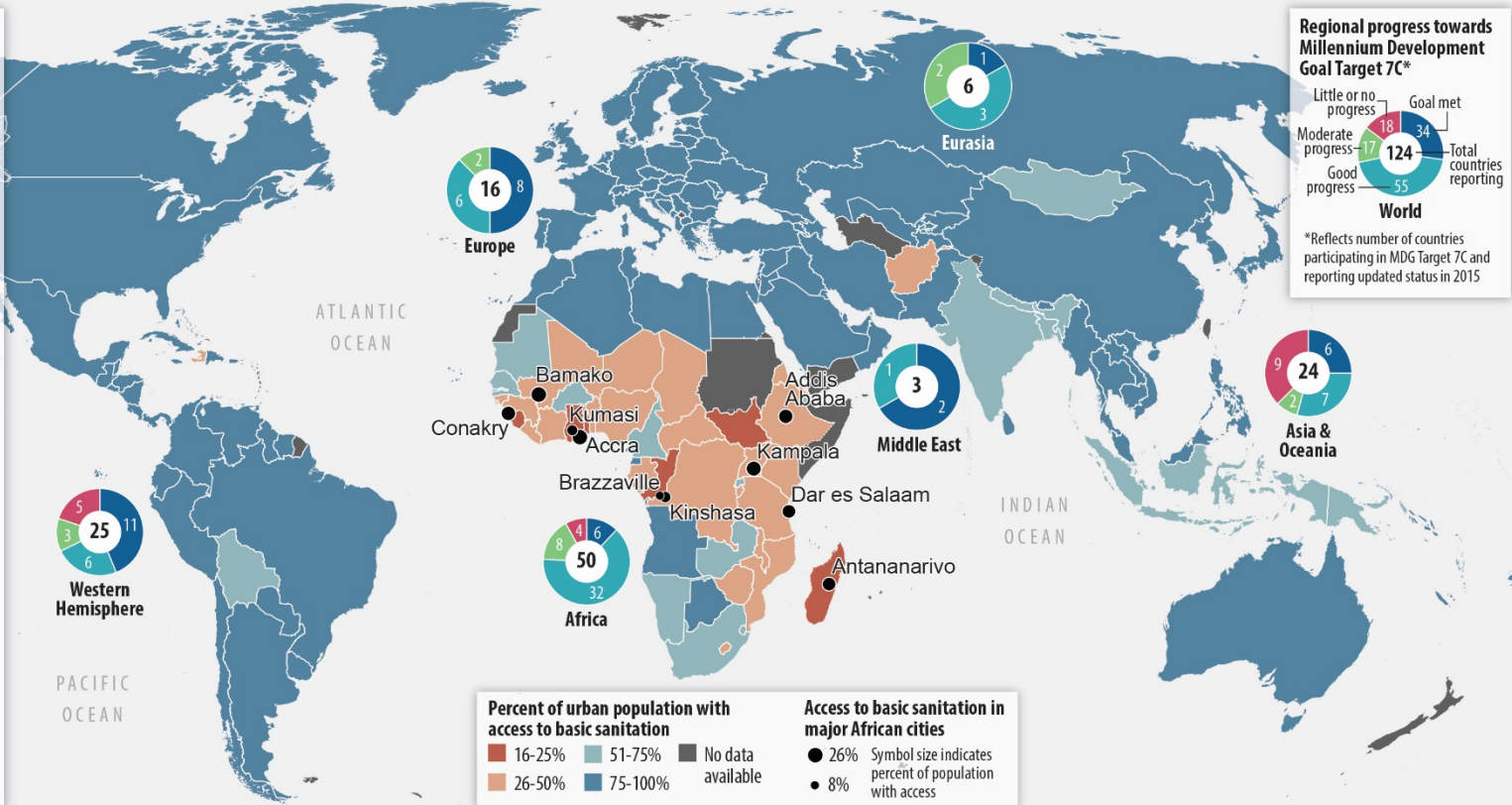
### Demographics of arrivals to Greece, Jan 1 - Apr 9, 2016





# World Water Day 2016: Urban Access to Sanitation

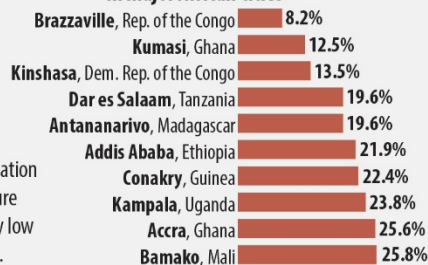
Today, 2.4 billion people in the world do not have access to basic sanitation. Most of them reside in Southern Asia (953 million) and Sub-Saharan Africa (695 million). Access to basic sanitation facilities close to home is critical to maintaining healthy and safe populations. Worldwide, 1.1 billion people currently defecate in the open. Open defecation helps diseases and parasites spread and can contaminate drinking water supplies. While 2.1 billion people have gained access to basic sanitation since 1990, Millennium Development Goal Target 7C of halving the proportion of the population without basic sanitation by 2015 was not met. Sustainable Development Goal 6 aims to ensure availability and sustainable management of water and sanitation for all.



## Access to basic sanitation lags in many African cities

On average, people living in urban areas have more access to basic sanitation, about 82% compared to the global average (69%). However, this number varies significantly by city. Cities in the global south, especially in Sub-Saharan Africa, where population growth has outpaced infrastructure improvements, have staggeringly low rates of access to basic sanitation.

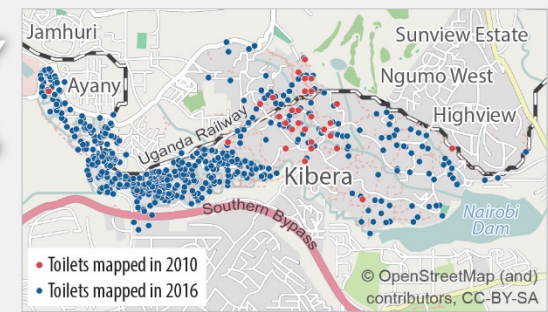
### Access to basic sanitation in major African cities



Names and boundary representation are not necessarily authoritative

## Open mapping initiatives are improving the assessment of community needs

Reliable data on the locations and numbers of toilet facilities, especially in poor settlements, are critical to assessing needs and planning for improvements. Open mapping initiatives such as HIU's MapGive facilitate essential data collection. The MapKibera project, an open mapping initiative that began in October 2009 in Nairobi, Kenya, has led to a sharp increase in the number of sanitation facilities mapped in the Kibera slum and a more accurate assessment of community needs. Only 31 toilets were mapped in Kibera in 2010, compared to 543 toilets mapped in 2016.

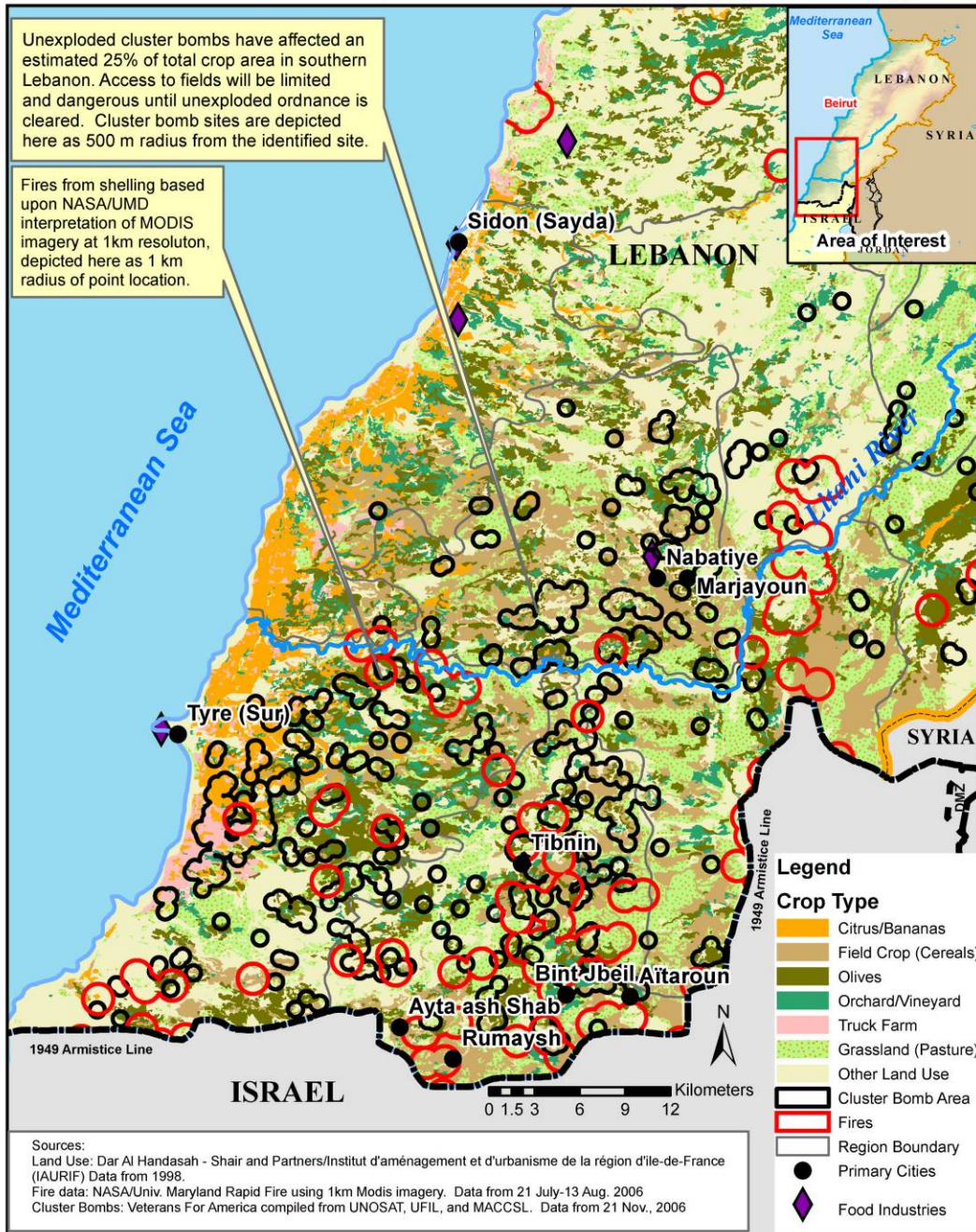


Sources: Hopewell and Graham 2014, MapKibera, OpenStreetMap Contributors, WHO/UNICEF Joint Monitoring Programme for Water and Sanitation

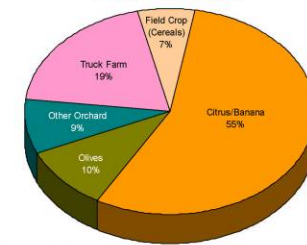
March 18, 2016 - U1372 STATE (INR)



# Lebanon: Impacts of Hostilities on the Agricultural Sector of Southern Lebanon



Composition of Southern Lebanon Crop Production



Source: FAO

The agricultural sector represents up to 80% of household income in southern Lebanon. Citrus, bananas, and truck farming represent the largest portion of overall crop production in the region. Losses to the crop harvest have been largest in truck farming, citrus and banana crops. However, the value of lost production is greatest in the citrus and banana crops. Direct losses due to bombing represent 16% of all losses, with the majority of loss (84%) due to abandoned fields.

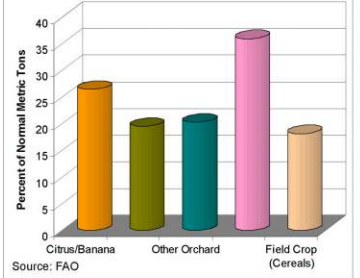
Overall, the agricultural sector in Lebanon as a percentage of GDP was projected by the IMF to approach 27 million US Dollars by 2010. Projected decreased agricultural production, based upon the period in the 1980s when previous hostilities between Lebanon and Israel occurred, show that it may take four years to recover. Total lost agricultural income may reach 15.4 million US Dollars.

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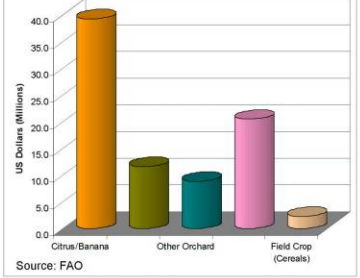
**HIU**  
 HUMANITARIAN INFORMATION UNIT

U.S. Department of State  
 hiu\_info@state.gov  
 http://hiu.state.gov

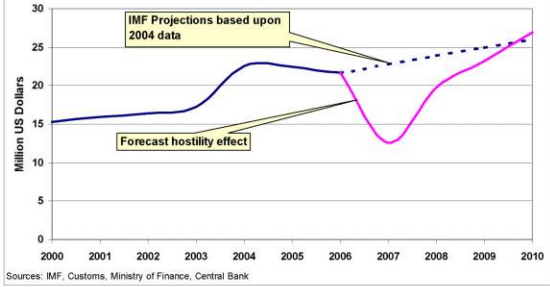
Percentage of Lost Production



Value of Lost Production (\$ million)



Lebanon Agricultural Sector Income



Sources: IMF, Customs, Ministry of Finance, Central Bank

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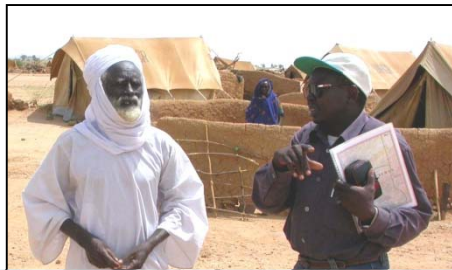
# Public Diplomacy: Darfur



Collaboration with Amnesty International, AAAS, Holocaust Museum, Google Earth



# Accountability and Justice requires systematic data compilation



**INTRVIEW PROJECT IN CHAD:**  
State/DRL, INR/GGI, USAID &  
NGO partners



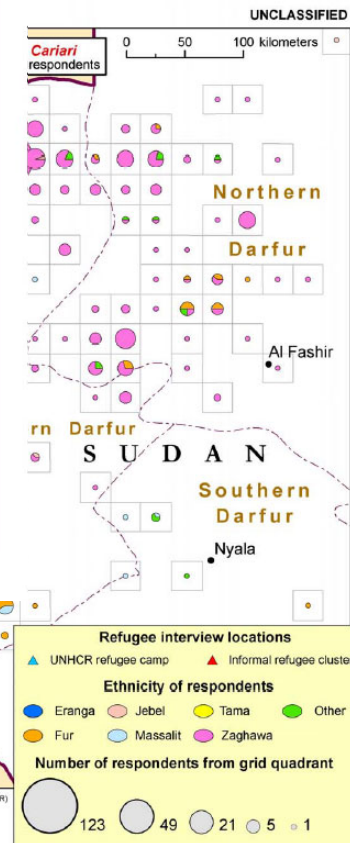
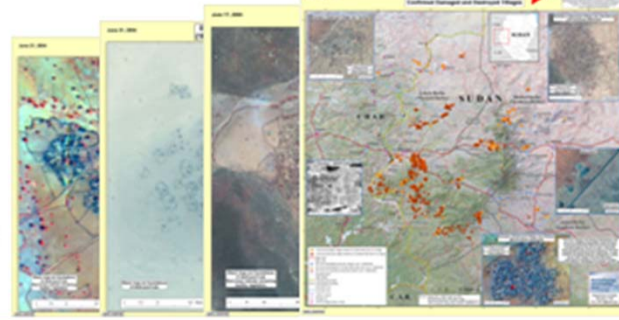
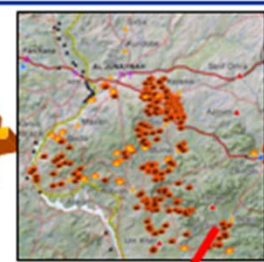
Decision Support

**Darfur Atlas**  
State/DRL, INR, USAID &  
NGO partners

## Darfur Crisis

- Drawing all-source data from a variety of partners
- Collaboration between State, NGA, and USAID
- Facilitating declassification of data
- Series of products over time

LONG. CO	STATUS	STRUCTURES
22 71472	DESTROYED	75
22 71020	DESTROYED	175-200
22 73917	DESTROYED	25
23 36750	DESTROYED	175-200
23 42694	DESTROYED	75
23 42778	DESTROYED	700
23 38333	DESTROYED	75
23 35139	DESTROYED	70
23 33694	DESTROYED	75
23 28833	DESTROYED	75
23 32222	DESTROYED	125-150
23 27833	DESTROYED	75
23 30000	DESTROYED	70



# Documenting Atrocities in Darfur







# Global



e.g.  
Land Use  
Demographics  
Global Climate  
Sea Surface Temperature  
Digital Elevation



e.g.  
Food and Fiber  
Disaster Preparedness  
Biodiversity  
Coastal Sensitivity



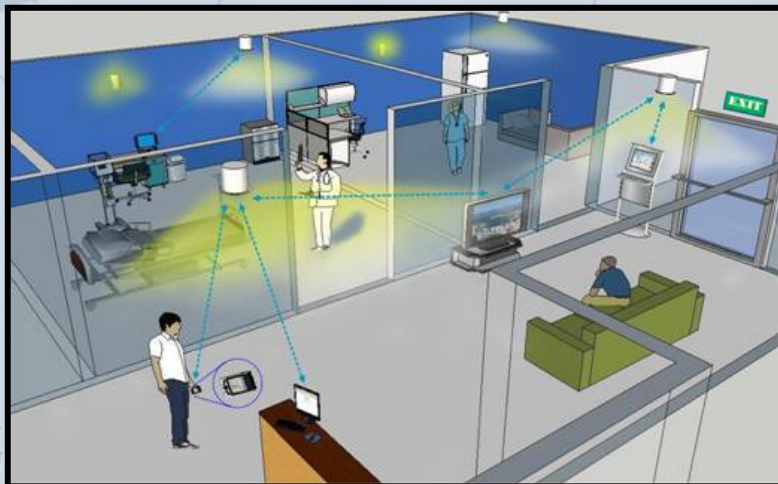
e.g.  
Land Use/Land Cover  
Precision Agriculture  
Hydrologic Modeling  
Transportation Planning



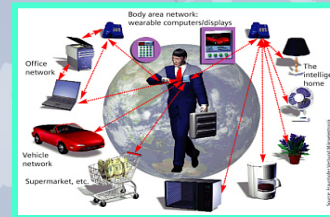
e.g.  
Smart Growth  
Public Health  
Disaster Response  
Weather

## The new digital data landscape

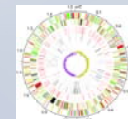
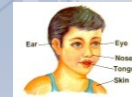
# Genetic



INDIVIDUAL  
SCALE



GENETIC  
SCALE





data best available system paradigm modeling scientific analysis information field

science questions remotely databases collections objectivity strategy engine inquiry proposal science-based

model hypothesis positioning network approach surrogate

sensed global existing search sampling work existing complex maps

methods availability availability digital

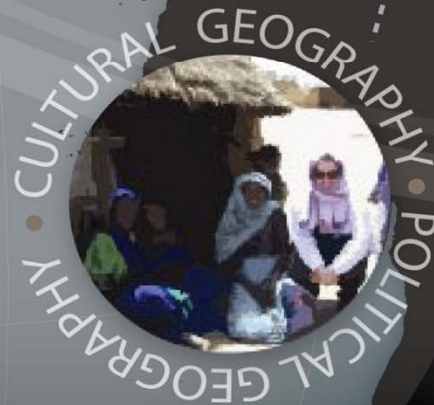
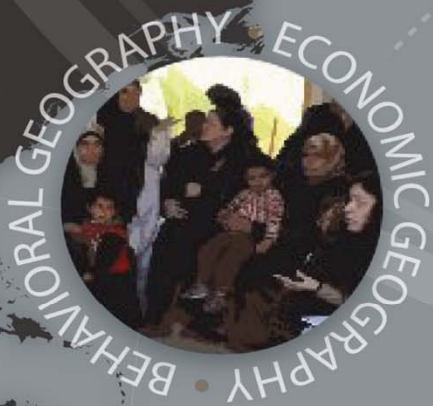


*Need for better foundation data globally on human geography in order to gain a better understanding of people and cultures to support human security, humanitarian assistance/disaster relief and emergency preparedness, response and recovery*

<https://wwhgd.org/>

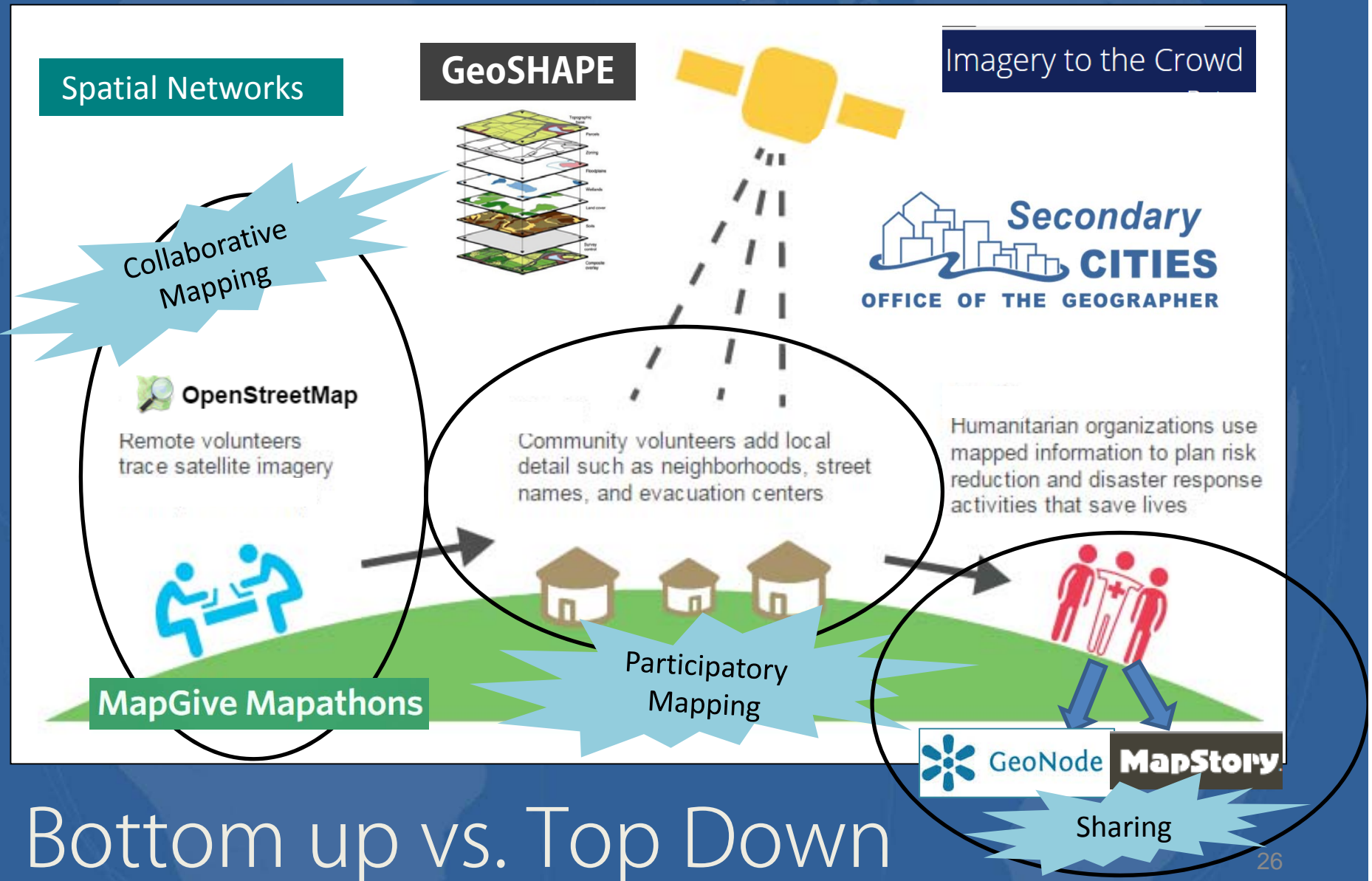


BUILDING A  
"SATELLITE"  
TO COLLECT  
HUMAN GEOGRAPHY  
DATA



- **Priorities**
- **Gaps**
- **Scale**
- **Cost**

# METHODS: Partnerships, participatory, community-based, local knowledge, ownership





# Secondary Cities

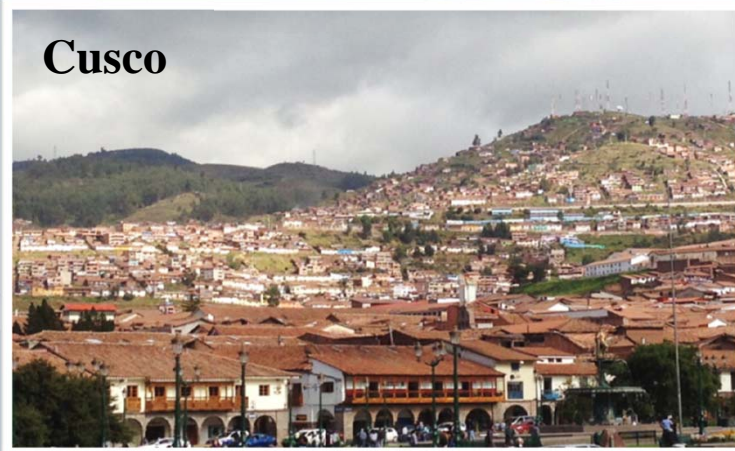
Resilient, sustainable, and better mapped cities

In 2014 close to *one half* of the world's urban population lives in settlements with fewer than *500,000* inhabitants



 **Secondary  
CITIES**  
OFFICE OF THE GEOGRAPHER

Cusco



# Satellite Imagery – Support for Natural Disaster Support

*2010 Haiti Earthquake*

**640** volunteer mappers

**1.4** million edits (in OpenStreetMap)

*2013 Typhoon Haiyan (Philippines)*

**1600** volunteer mappers

**4.5** million OSM edits

*2015 Nepal Earthquake*

**7000+** volunteer mappers

**10.6** million OSM edits

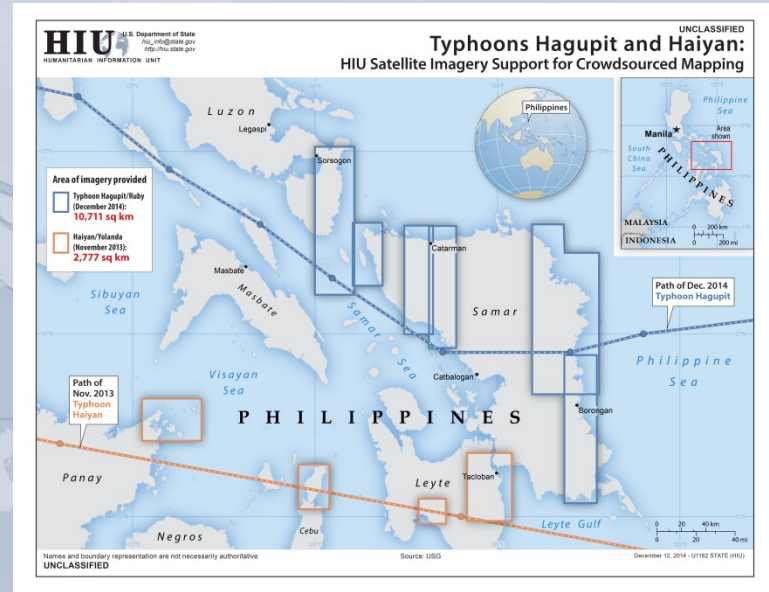


# Satellite Imagery Support

## MapGive & Imagery to the Crowd

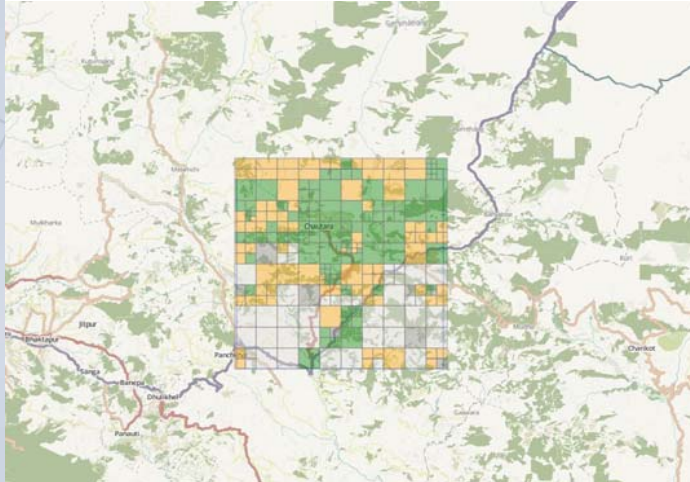


Leaflet | Map data © OpenStreetMap contributors, CC-BY-SA, Names and boundary representation are not necessarily authoritative.

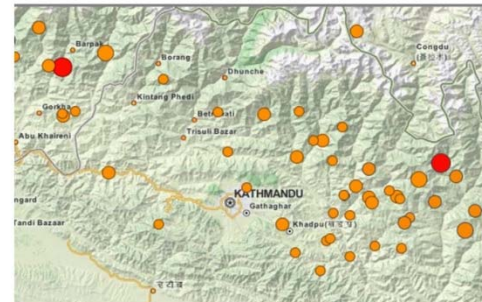


OSM Tasking Manager About en login to OpenStreetMap

#1062 - Nepal Earthquake, 2015, Severely damaged housing areas and IDP Informal camps, Chautara, 2015-05-14



English Français  
About Updates Projects Get Involved Donate



FEATURED PROJECT

### Nepal 2015 Earthquake Response

The 2015 Nepal earthquake struck on 25th April with a magnitude of 7.8, followed by many aftershocks including a large magnitude 7.3 quake on 12 May. The quakes have caused widespread damage in the city of Kathmandu and the surrounding region.

You can help. Map any place in the world  
even if you've never been there.

Map data is key to humanitarian and development missions. MapGive helps new volunteers learn to map and get involved in online tasks.



<http://mapgive.state.gov>



# Questions?



# Office of the Geographer

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*Official Activities (including those that are Congressionally-mandated):*

- **Keeping track of countries and their official names.**
- **Standardizing geographic names for USG**
  - **Chair of the Foreign Names Committee of the US Board on Geographic Names.**
- **Dissemination of international boundary policy.**
- **Dissemination of territorial sovereignty policy.**
- **Official point of contact for geographic inquiries.**
- **Using geospatial technology to support foreign policy:**
  - **- Support for public and private diplomacy**
  - **- Boundary negotiations**
  - **- Intelligence analysis, on *global issues***



# **Office of the Geographer and**

## ***Global Issues (beg. 1994)***

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### ***Today's Global Issues Focus is On "Soft/Smart" Power:***

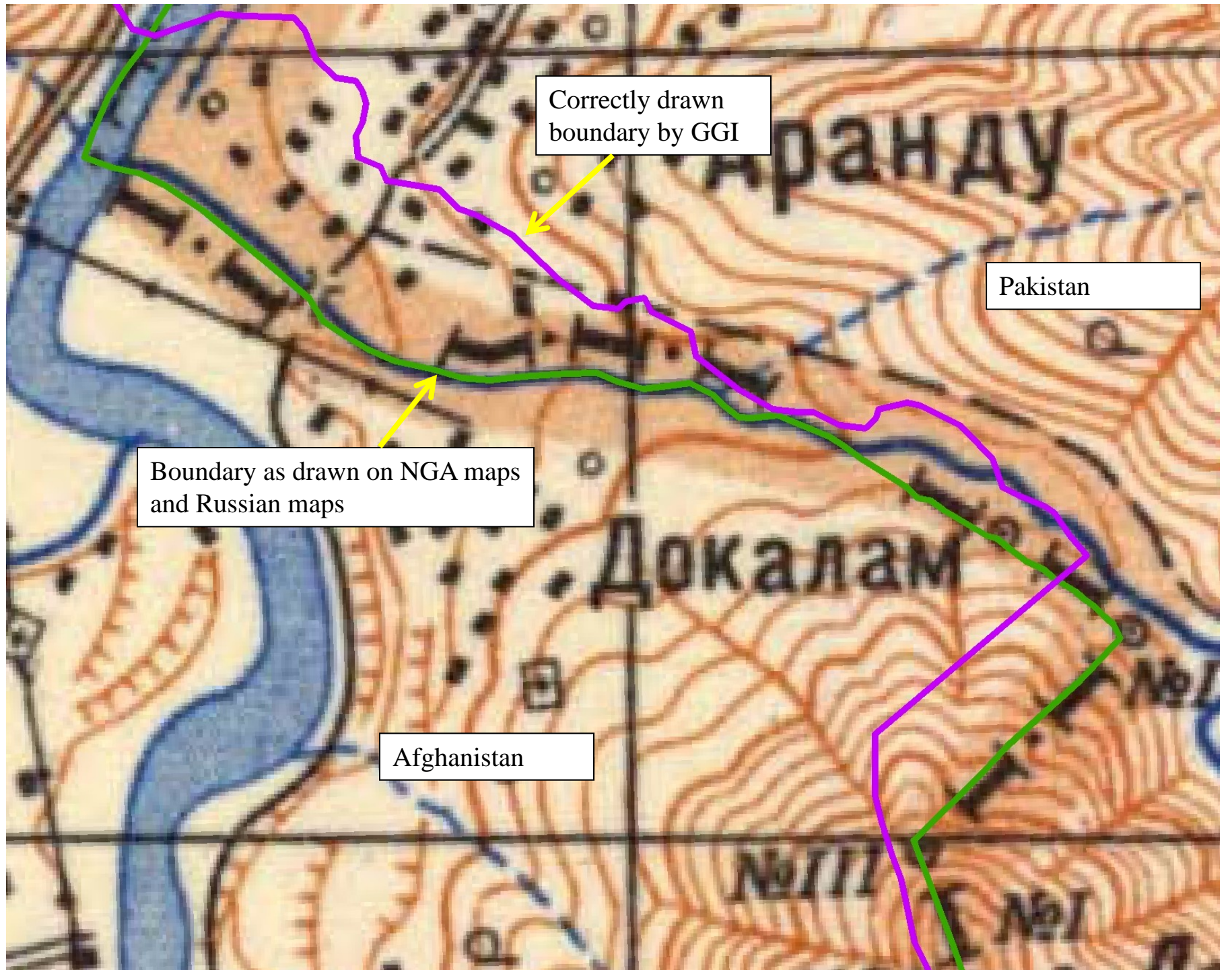
- **Complex Humanitarian Emergencies:**
  - **Humanitarian Planning Maps and Information Centers**
  - **Transparency and Partnerships**
- **Peacekeeping/UN Security Council Issues.**
- **War Crimes, Atrocities, Early Warning.**
- **Democracy and Human Rights.**
- **Natural Disasters.**
- **Environment and Sustainable Development.**
- **Water, Food, Energy Security, Climate Change**
- **"Civilian Security" – QDDR reform; Human Geography**

# **Boundary negotiations and verification**

Satellite Imagery and Geographic Information Systems have revolutionized the way the US government is able to analyze, verify, negotiate, and mediate international boundaries.

Despite these technological advances, ground truth and library/archival research remain critical components of understanding – *defining, delimiting, and demarcating* -- international boundaries





Correctly drawn  
boundary by GGI

Pakistan

Boundary as drawn on NGA maps  
and Russian maps

Afghanistan



# 3D Visualisation Flyovers

