Crowd Geocoding for Financial Development

Shadrock Roberts | USAID GeoCenter
Stephanie Grosser | USAID Development Credit Authority
D. Ben Swartley | USAID GeoCenter
Through risk sharing mechanisms, USAID’s Development Credit Authority encourages local banks to lend to creditworthy but underserved sectors.
Why map?

- Better Serving Entrepreneurs
- Targeted Lending
- Analyzing Transnational Impact
- Improved Partnerships
Impact

- 333 Guarantees in 67 countries
- 117k loans globally
  - worth $1.14 billion
- $2.3 Billion in made Available
## The Problem

<table>
<thead>
<tr>
<th>Country</th>
<th>Original Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>Mac Thi Buoi Vinh Tuy Ward, Hai Ba Trung Dist Ha Noi Viet Nam</td>
</tr>
<tr>
<td>Haiti</td>
<td>Port au prince</td>
</tr>
<tr>
<td>Haiti</td>
<td>Sud</td>
</tr>
<tr>
<td>Paraguay</td>
<td>### calle, campo ###</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Status</th>
<th>Country</th>
<th>Original Location</th>
<th>Admin 1</th>
<th>Admin 1 Code</th>
<th>Place Name</th>
</tr>
</thead>
<tbody>
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<td>VM44</td>
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<td>Paraguay</td>
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<td>Null</td>
<td>Null</td>
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</tbody>
</table>
The Solution

- USAID Staff
- Contractor
- Crowdsourcing & Partnerships
Policy Issues & Necessary Clearances

- Free labor
- Non-Disclosure Act Compliance
- Releasing Publicly Identifiable Information
- Information Quality Act Compliance
USAID Crowdsourcing Tool

Place name or address:
Port au Prince, Haiti

Admin 1_Name Ouest
Admin 1_Code HAI1

Zoom to

Haiti

<table>
<thead>
<tr>
<th>OID</th>
<th>Name</th>
<th>Admin 1</th>
<th>Country</th>
<th>Type</th>
<th>Description</th>
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<th>Longitude</th>
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<tbody>
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<td>Ouest</td>
<td>Haiti</td>
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<td>Port-au-Prince, Ouest, Haiti</td>
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<td>Haiti</td>
<td>third-order admin division</td>
<td>Port-au-Prince, third-order admin division</td>
<td>18.51667</td>
<td>-72.31667</td>
</tr>
</tbody>
</table>
Assembling the Crowd

855 members globally
Extensive experience in a variety of online mapping projects. Insanely passionate, highly caffeinated.

2,672 members globally
Venerable volunteer group known for their professional expertise in GIS.

Jane & John Q: we wanted to meet them and get them excited about USAID and DCA.
Crowd Motivation

• “I’m between jobs right now and this is a great opportunity for me to connect with people doing similar work as me in the DC area.” – Dan, GeoDC

• “The true meaning of crowdsourcing: I’m skyping with my mom to get help with the Sri Lanka-based tasks our volunteers are having some trouble with (she’s from there)”. – Jeannine, Standby Task Force Volunteer

• “I wasn’t sure what I was going to be doing but I appreciate what USAID does and wanted to help.” – Stephanie, volunteer who works full time at National Defense University

• “I haven’t felt like this since the soup kitchens and food drives I used to do in college. I love this.” --Rick, GISCorps
Drafting the Scope of Work to Deploy VTCs

• Allocate adequate time

Time Management

• Understand the demands of the project to allocate appropriate resources and budget their management time.
• Well-defined tasks are more achievable than vague, partial notions.
• Maximize volunteer time by planning ahead!

Communication

• Organization, organization, organization.
• Practice, practice, practice.
• SBTF and GISCorps place an emphasis on after-action review to learn from the project and to better prepare for the next.
Messaging to the Crowd

The Standby Task Force
The World’s Leading Online Volunteer Community for Live Mapping

SBTF & USAID Partnership on Poverty Alleviation and Smarter Development
By PATRICK | Published: MAY 21, 2012

The Standby Volunteer Task Force (SBTF) continues to break new ground in 2012. This time around we’re partnering with colleagues at the US Agency for International Development (USAID) who recognize, like we do, that equitable and sustainable economic growth is instrumental for countering extreme poverty across the globe. Being one of the biggest development organizations in the world, USAID has the resources to have significant impact on the livelihoods of millions. To this end, our colleagues want to better understand the link between their economic growth initiatives and their subsequent impact on poverty alleviation. This is where we as SBTF volunteers come in.

Our partners have access to a considerable amount of data which, if analyzed, will yield some very important empirical insights on the link between economic
Assembling the Crowd

Phase 1 Anticipated Number of Volunteers by Affiliation

- 191 (50%)
- 142 (38%)
- 47 (12%)

Phase 1 Event Participation by Volunteer Affiliation

- 61; 42%
- 67; 46%
- 17; 12%

- Anticipated “Public” data comes from the DCA Facebook page, which likely included volunteers from each of the other groups.
- Data are for Phase 1 only and do not reflect GISCorps volunteers for Phases 2 and 3, nor volunteers who had signed up to work but could not due to early completion.
- “General Public” may include volunteers from either VTC who registered under a different e-mail address.
Volunteer Innovation

Data do not include Phase 2 & 3 GISCorps volunteers. General Public participation may contain members of the other VTCs due to registering under different e-mail addresses.
Volunteer Innovation

Data do not include Phase 2 & 3 GiSCorps volunteers. General Public participation may contain members of the other VTCs due to registering under different e-mail addresses.
Results

Automated
• 107,000 records processed
• ~67,000 records with added ADM1
• 64% accuracy

Crowdsourced
• ~10,000 records processed
• ~7,000 records with added ADM1
• 85% accuracy
• Completed in 16 hours by 145 volunteers

Ancillary Benefits
• DCA Twitter increased by 20%
• DCA Facebook increased by 15%
The Mapping Process

- Choose to map at Admin1
  - Greatest number of records supported this
  - Admin1 data are widely available
  - Still have multiple scales

- Also created x/y point for IATI compliance
  - IATI is limited to communicate extent
  - Including more data gives users more options
Standardization

• FIPS Codes – no longer maintained but used
• FAO-GAUL, SALB, GADM, GeoNames (NGA), ESRI, Google.
• USG does not maintain a standard dataset.
• Final Decision: use internal dataset under co
  – Needed to be derived
  – Not open data
Mapping: Locators

- http://www.arcgis.com/home/item.html?id=991a730ac41248428b48584ccf77b583
Mapping with Story Map

The Mapping Process

- What story you wanted to tell?
- Wanted to present a map as a table of contents?
  - Different tabs for different aspects of the data
  - Doesn’t support queries
  - Doesn’t support different views
  - Does tell a story and acts as a basic table of contents
Mapping with Story Map

Where USAID Unlocks Lending Around the World

USAID’s Development Credit Authority (DCA) works with local financial institutions to design investment alternatives that unlock financing for entrepreneurs in developing countries.

Guarantees  Loans Disbursed  Available Financing  Stories & Evaluations

View loan summaries for each country with active and expired guarantees. Zoom in to find out where loans have been geographically distributed.

Loans were mapped at this level for 63% of the dataset. 74% of non-mapped records are from early partnerships in Mexico and Ecuador.

Legend

Value of Loans Disbursed per Sub-national Unit

$0 - $10 thousand
$10 - $100 thousand
$100 - $1 million
$1 - $3 million
> $3 million

The boundaries and names used on this map do not imply official endorsement or acceptance by the U.S. Government.
Challenges

**USAID automated processing capacity**
- Partnered with DoD

**Processing sensitive information**
- Work with General Counsel
- Pre-processing with DoD

**Distributable updated global Admin 1 data**
- Derived internal USG resource
- Only open database: not geometry.

**Standard geographic names**
- Using NGA GEOnet database

**Concerns over accuracy of crowdsourced data**
- Spot-check monitoring
- Sampling for agreement
- Independent accuracy assessment
Lessons

Automated processing
• Improve algorithm!

Sensitive information
• Prefer full-disclosure with volunteers: volunteered PII?

Admin 1 data
• Greater investment in SALB, GAUL, etc.
• Clarification on “derived” – can we share simplified?

NGA GEOnet Names Server
• Greater investment in content and usability

Crowdsourced data?
• Couldn’t be happier
• Accuracy in-line with current standards.
• Best practices?
Lessons

The Social Aspect Matters
- Skype chat helped build community

Crawl- Walk- Run
- Two test runs helped hone the workflow

No Cost Solution
- Budgets are restrained so this was the only solution as it had zero cost

Publically Identifiable Information is not Insurmountable
- A common ID allows for deleting and later merging back columns that cannot be shared

Database Problem
- Anyone with a database that includes a location field should confirm that standardized geographic data is being collected

Understanding Why People Volunteer
- People want to make a difference and connect. This mattered more than disclosing the exact nature of the data ahead of time.
We need to be working as hard to release relevant data we already have as we are to create it.

The crowd is willing to do research, data mining, and data cleanup.
   – People like figuring out where things are.
   – Micro-peer review?
Finished Products

- This is just the beginning.
- Host ideation jams to do more with the data
- Not just a one-off. The map will be updated.
- Excited to see how lives are improved from the data release

Massive Thanks to: