AfricaGIS Participatory Mapping - Prospectus

Despite high levels of interest in mapping in Africa, and the involvement of numerous international and local organizations in the creation and distribution of maps in Africa, the sharing of map data, and development of local skills remains minimal. The opportunity is immediately available to leapfrog the African mapping community into the latest accessible practices of the GeoWeb, utilizing open data, open standards and open source software for application and systems development.

This project aims to catalyze a dormant but otherwise very motivated African geo community through local, community based, but scalable participatory mapping.The initial project idea derives from informal meetings following the first WhereCampAfrica (www.wherecampafrica.org) held in Nairobi on April 4th 2009. During that meeting, and as a result of the outreach meeting as part of AGCommons as well as activities held around FOSS4G in Cape Town, and the GDEST conference in 2008, the idea for this mini-project was envisioned. The ultimate aim of this mini-project is not just to support humanitarian work in Africa but to encourage local entrepreneurship by catalyzing a community of practice in Africa.

This proposal envisions taking advantage of the AfricaGIS conference, currently scheduled for October 2009 in Kampala, Uganda to catalyze a community and host four separate activities including:

WhereKampala - An informal un-conference focused on mapping and spatial technology where participants set the agenda.

Map Kibera - Mapping the Kibera slum area of Nairobi to raise awareness, catalyze a community and test open data licensing with major vendors and initiatives

Mapping Parties - Expand on mapping Kibera and hold mapping parties in and around East African capitols including Nairobi, Kampala, Lilongwe and Kigali.

Open Source Geo Workshop - Train in the use of Open Source Geo technologies, including PostGIS, GeoServer, GeoWebCache, GeoNetwork and Open Layers immediately before or After the AfricaGIS conference.

In addition to the specific activities, these projects will validate the notion of a low cost, small scale and agile approach to mapping in Africa to create open geodata and catalyze a community interested in mapping and GIS. More information on the specific project components are listed below.

Activities

WhereKampala

The AGCommons team is currently planning the 2nd WhereCampAfrica to take place in Bamako, April 2010 during the 2nd African GeoSpatial Week. However there is a unique opportunity now to take advantage of the time and place of the AfricaGIS conference in 2009 to hold a WhereKampala. This event would piggy-back on the AfricaGIS venue at Merkarere University and immediately precede the conference itself. The event would be held on a single day with the only physical requirements (besides a venue) being t-shirts and free lunch for participants.

By holding this event in conjunction with the AfricaGIS conference, it would likely include members of the GDEST (http://www.esri.com/news/arcnews/spring08articles/global-dialogues.html) program mixed with high-level government officials and local African geospatial developers. By bringing together these two separate 'worlds' with respect to spatial technology, and African development ideas and points of view between widely disparate groups of people can be openly shared. WhereKampala would also be an ideal venue for launching mapping parties in and around Kamapla.

Currently there are verbal commitments from major vendors for support for WhereKampala which ultimately should completely cover the out of pocket expenses. In this case, any additional money would be put towards additional mapping parties throughout Africa.

Map Kibera

This project has three central goals:

1) Raise general awareness of the living conditions in Kibera by mapping, as much as possible the extents of navigable streets and other mappable features within the informal settlement.
2) Catalyze the local community and expand the capabilities local participatory mapping, expanding previous work and initiating mapping parties within Africa starting with Kibera.
3) Test the licensing mechanisms of multiple mapping platforms by making raw data freely available and uploading that data into multiple systems.

Over several weeks, local inhabitants of Kibera along with volunteers identified during the first WhereCamp Africa will be trained in techniques of GPS and paper based surveying and map creation, and create a comprehensive map of roads and facilities in Africa's largest slum. This activity will involve an initial two day intensive training, followed by 2-3 weeks of self-directed map making. This is a similar structure to the successful JumpStart Palestine map in Bethlehem

[http://jumpstart-mapping.blogspot.com/2008/09/it-all-starts-in-bethlehem.html]. Several local organizations have expressed interest in providing a working venue, and experienced international mappers will be on site to facilitate the entire mapping process. Following the completion of the map, the raw data will be made freely available for upload into multiple collaborative mapping platforms, and GPS units will remain with community organizations for continual training and data collection.

Kibera itself has had some pilot mapping projects initiated, but not followed through. http://www.mapkiberaproject.org/ The FreeMap India project was initiated by C.R.I.T (http://crit.org.in/) in Mumbai. The starting aim was to provide open mapping data in order for slum dwellers to participate in the planning and development process. This led to a series of tranings in open source and data tools in Mumbai, and throughout India, and the successful catalysation of an active OpenStreetMap community in India. In conjunction with the FOSS4G (Free and Open Source For GIS) conference in Cape Town, South Africa in 2008, OpenStreetMap held several events in Southern Africa http://wiki.openstreetmap.org/wiki/OpenMappingAfrica2008, including the specific successful mapping of the Mandela Park township in Hout Bay http://porcupinealley.com/entries/2008/oct/09/township-mapping.

Slum Mapping

The idea to map slum areas in Africa and elsewhere is not new. Of all places in the world, informal areas are most lacking and most in need of maps. There have been much discussion, and some practical efforts.

In 2008 ITC, CIESIN and UN Habitat hosted the first international forum on slum mapping (http://www.ciesin.columbia.edu/confluence/display/slummap/Global+Slum+Mapping). This event was attended by scientists, university professors and other experts who established some initial requirements and explored techniques around Very High Resolution (VHR) imagery interpretation for mapping. The stated goal of the meeting was to "*to explore the potential of satellite imagery to assist the UN-HABITAT Global Urban Observatory (GUO) in producing global statistics on slums in support of Millennium Development goal 7, target 11, 'improving the lives of 100 million slum dwellers'*". The majority of presentations focused on tecniques of photo interpretation to delineate and identify slum areas instead of

Multiple Upload and Licensing

By uploading field collected data into multiple platforms, the project can test in a very practical, real and public way, any restrictions over use and hopefully encourage a meaningful dialogue about the uses of community collected map data. Following the announcement by Google at WhereCampAfrica in April 2009 of the generally availability of downloadable vector data for Kenya, the group came away with questions regarding the usability of street data and the local impact of several competing collaborative street mapping initiatives currently underway including OpenStreetMap, gRoads, Google Map Maker and Tracts4Africa. Mission critical operations such as those run by the WFP are hesitant to use OpenStreetMap data that can be created and maintained by unknown sources. The gRoads

initiative creates data from known sources but uses a comparatively heavy data model. Google Map Maker downloadable data is not available throughout Africa and both Google and Tracts4Africa sourced data come with license and redistribution restrictions.

Data will be made available for the following collaborative mapping projects.

a. Google Map Maker (http://www.google.com/mapmaker)

b. gRoads (www.groads.org)

c. OpenStreetMap (http://www.openstreetmap.org/)

d. Tracts4Africa (http://www.tracks4africa.com/)

Mapping Parties

To encourage and help people to edit, experienced OpenStreetMap mappers run **Mapping Parties**. At these one or two public events, attendees receive instruction in GPS surveying, track upload, and map editing in OSM tools. Participants are immediately making contributions to the global map, and come away empowered to continue mapping and training others in their community. The Mapping Party is a convivial, community event. After the mapping is finished, the participants share food and drinks, and enjoy themselves. It's a party, after all!

This activity would include up to ten mapping parties in East Africa, run by international mappers, held at locally organized venues. We'll work with local groups of GIS professionals (SERVIR-Africa), Universities, UN collaborative groups (UN IMWG in Sudan, SiMaC in Somalia), OSM mappers, open source software users, and other interested groups to bring these events together. The series will be modelled on the FreeMap India 2008 workshops (http://wiki.openstreetmap.org/index.php/India#Free_Map_India:_Series_of_Workshops) which successfully catalysed a mapping community across the subcontinent.

AfricaGIS Open Source Geo Workshops

The Open Source Geo Stack (http://brainoff.com/weblog/2008/10/31/1372) consists of numerous components, from the database, to application frameworks, rendering engines, and presentation layers. Two groups, OpenGeo and Stamen, have both developed in depth, fun and compelling training on different parts of the stack. Training in the Open Source Geo stack in Kampala will offset the influence of major vendors including ESRI and Google. While the the participation of major software vendors in African mapping events is certainly welcome and encouraged, there is no need for them to dominate community.

OpenGeo (www.opengeo.org) is a global leader in the development and promotion of using Open Source GIS software. Developers at Open Geo routinely participate in mapping parites in and are active in global initatives including OpenStreetMap (OSM) and GeoNetwork. Stamen

(http://stamen.com/) is a design and technology studio in San Francisco, noted widely for their boundary pushing contributions to web mapping and cartography, and commitment to open source and OpenStreetMap. Their Maps From Scratch tutorial (http://www.mapsfromscratch.com/) has been highly regarded.

The Open Source Geo training workshops include travel for two staff from New York or San Francisco to plan for and run free workshops at the AfricaGIS conference. This workshop(s) can also provide training and facilities for cleaning and uploading tractlogs recording during the local mapping parties. The advantage of planning this in conjunction with AfricaGIS is that the team can take advantage of the University facilities (computers) for training.

Approximated Budgets

Activity	**Amount**
WhereKampala	$3K
Map Kibera	$15K
Mapping Parties	$15K
AfricaGIS OpenGeoWorkshops	$15K

Potential Project Partners

H.O.T (http://wiki.openstreetmap.org/wiki/Humanitarian_OSM_Team) is a OSM based initiative to apply the principles and activities of open source and open data sharing, and leverage thousands of volunteers globally, towards humanitarian response and economic development, and leverage thousands of volunteers globally.
AGCommons
OpenGeo
GeoCat (GeoNetwork)