Community Mapping Just Got A Whole Lot Easier
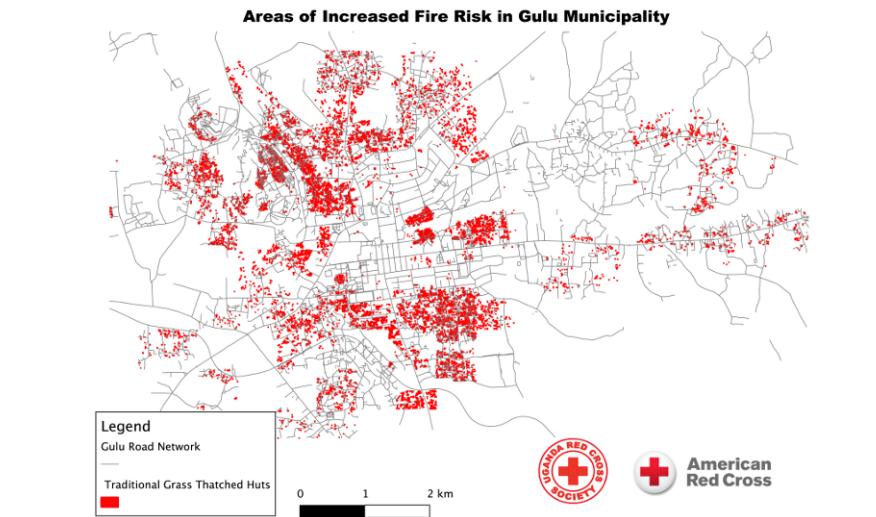
OpenStreetMap Launches New Map Editor at Peace Corps Headquarters

By Brooke Marchewka

O pen-source mapping is here, and now it is easier than ever to do. Imagine yourself in your host community with your counterpart: viewing your community from satellite imagery, outlining the local clinic, primary school, homes, rivers, roads, and more with the click of a mouse. Imagine labeling your community's features and saving the changes you made to a global map- one that anyone can see, edit, and use. Imagine how this kind of mapping will revolutionize accessibility to rural geographic information, facilitate the transfer of computer skills to counterparts, and inform project planning for any organization that wants to make a difference in that community.

Recently, The Peace Corps Office of Innovation invited developers from OpenStreetMap, the forefront collaborative project to create an open-source free map of the world, to Headquarters to launch their new mapping editor. This user-friendly tool, called iD editor, makes it easier than ever before for anyone to contribute their knowledge to open-source mapping. According to Josh Campbell, GIS Architect at the U.S. Department of State, "this combination of widespread technology access and ease-of-use is an incredible achievement in the history of mapping."

Since OpenStreetMap was created in 2004, thousands of contributors have collectively enriched the world map by mapping their own communities. Using low-cost GPS data and satellite imagery, "a base level map of a town, a village, a neighborhood etc. can be established

Areas of Increased Fire Risk in Gulu Municipality

Uganda and American Red Cross

Legend
Gulu Road Network
Traditional Grass Thatched Huts

0   1   2 km

A map created by the Uganda and American Red Cross using geo-locations of straw-roofed houses on OpenStreetMap.

surprisingly fast among single individuals or a small group of volunteers," explains Alex Barth, data lead at MapBox. Perhaps OpenStreetMap's most appealing feature is also what sets it apart from any other mapping platform- its data is free and open-source, meaning that anyone can use data from the map to create web and mobile applications, customized maps, data visualizations for things like disaster risk simulations, and more. With OpenStreetMap, "all possibilities are open, the data is as good as yours," says Barth. Thanks to contributions from people around the world and a free, open-source platform, OpenStreetMap has become a rich source of vital geographic data for both private and governmental organizations such as Foursquare, Craigslist, Wikipedia, Apple, The U.S. Department of State, The Red Cross, and the World Bank.

But why should Peace Corps Volunteers care about using OpenStreetMap? Put simply, it magnifies the impact of what they are already doing. Community mapping has long been considered a valuable exercise for Volunteers in the sense that it encourages them to explore their host community and provokes critical project planning discussions. Traditionally, maps have been sketched on paper or murals. These maps are useful, but they are limited in terms of who sees them, who can update them, and who has access to the valuable cultural and geographic data they provide. Imagine if the community maps created by Peace Corps Volunteers were online and open-source.

That's right. We are talking about Volunteers contributing to a digital map that anyone around the world can access, edit, and use. Not only would open-source mapping liberate the valuable

geo-cultural knowledge that Peace Corps Volunteers accumulate during their service, but it would also- quite literally- put rural communities on the map. According to Barth, maps depicting the most remote areas of the world are "often not available, inaccurate or just plain out of date." Thus, Peace Corps Volunteers are in a unique position to provide detailed maps and to empower their communities to upkeep the map long after they have completed their service.

"Peace Corps Volunteers build deep relationships in the communities they serve, and that is in fact the key to see change through technology. It takes more than exposure and capacity, but time for a community to absorb, discuss and discover the right applications and approaches."

Mikel Maron, former Board Member at the OpenStreetMap Foundation and Director of GroundTruth Initiative, emphasizes how the adoption of open-source mapping reverberates far beyond the individual Peace Corps Volunteer's service and how it can benefit the community itself. When a community takes ownership of their map, there is great potential for increasing community solidarity and making information available to everyone that can stimulate community economic development, support efforts to improve resource allocation, and support disaster relief efforts, among other things.

GroundTruth Initiative, a new media and technology consulting company specializing in community-based participatory technologies, has demonstrated the profound community impact of OpenStreetMap through their project Map Kibera. The project started with the goal of making Kibera, Kenya- one of the largest slums in the world- more than just a "blank spot" on the map. Three years later, it has produced a number of positive outcomes for the community. Residents of Kibera gained confidence in their new computer skills, increased familiarity with GPS technology, group solidarity, and pride.

Uganda and American Red Cross

The proximity of straw-roofed houses in Uganda poses an increased fire risk.

On the community level, Kibera gained more legitimacy as a neighborhood and residents felt less marginalized. Furthermore, groups focused on issues in health, gender-based violence, sanitation, mobile phone services, farm-to-market supply chain, large-scale conflict mapping, peace promotion, and others expressed interest in using the data from Map Kibera for their own projects. Maron attributes the success of Map Kibera to the sense ownership that community members felt in mapping their community, but especially the "perseverance and growing trust over 3 years (and counting)." He says, "that potential in communities around the world is what so excites me about interest in OpenStreetMap at the Peace Corps."

The Red Cross' mapping initiative in Uganda is another example of how organizations are utilizing OpenStreetMap data in creative ways for their own projects. In 2012, the Uganda and American Red Cross partnered with the Humanitarian OpenStreetMap Team to create comprehensive maps of the cities of Gulu and Lira in northern Uganda. Using satellite images, volunteers and members of the Uganda Red Cross society traced the locations of straw-roofed houses in the Gulu and Lira municipalities on OpenStreetMap. Then, using the geographic density of these houses as an indicator of increased fire risk, the Red Cross gained a more comprehensive understanding of where to focus their efforts in fire risk reduction.

The U.S. Department of State's Humanitarian Information Unit supplied the satellite imagery for this project and continues to empower the OpenStreetMap community through their Imagery to the Crowd initiative, which shares commercial high resolution satellite imagery with the volunteer mapping community. Josh Campbell emphasizes how crucial maps are to implementing quick, effective emergency response programs. If a baseline map of an area already exists before a disaster occurs, the OpenStreetMap community "can focus on updating the map with areas affected by the disaster, and not on building the foundation of the map," says Campbell.

Applications of OpenStreetMap such as this would not be possible without the mapping done by people on the local level. This is where Peace Corps Volunteers can make a big difference. Campbell explains, "Peace Corps Volunteers can provide the descriptive, cultural details about the places where they live and work that only comes from being in the community. No satellite image can tell you the name of a road, a business, or a school. It is these details that transform a collection of geographic data about roads and buildings into a real 'place.'"

So why isn't this happening on a grand scale already? Since the dawn of open-source mapping, perceived barriers such as lack of coding skills, computer and Internet access have stood in the way of Peace Corps Volunteers using and teaching open-source mapping. But these barriers are breaking down. With OpenStreetMap's iD editor, Volunteers do not need to know how to code or even have any experience with open-source mapping; in fact, the tool was designed with first-time users in mind. In regards to computer availability, the 2012 Annual Volunteer Survey reports that 80 percent of Volunteers have or regularly use a laptop or desktop computer in their community. While 51 percent of Volunteers report that they usually or always have Internet access at their residence, those for whom access is particularly limited can edit the map offline and upload their changes when they do have access. They can also take advantage of projects such as Walking Papers, which integrate paper maps into the data-collection process for OpenStreetMap. Furthermore, lack of awareness of open-source mapping has been a barrier to Volunteer adoption. If you recall Oliver Cunningham's piece *Map It!* in *WorldView*'s winter edition, he says "the reason it's not happening already is because people don't know-getting the word out is the first step."

Peace Corps Volunteers can truly contribute to tangible humanitarian applications of open-source mapping by making local knowledge universally accessible. More importantly, Peace Corps Volunteers can empower community members to maintain the map, thereby enriching a global reservoir of data that humanitarian organizations tap into to improve their understanding of local conditions, utilize their resources more efficiently, and ultimately magnify their impact.

If you are interested in OpenStreetMap, visit www.learnOSM.org and get started. To learn more about this initiative, the Peace Corps Office of Innovation at innovation@peacecorps.gov.

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