



Humanitarian
OpenStreetMap
Team



2015 ANNUAL REPORT

MAPPING OUR WORLD *TOGETHER*



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OpenStreetMap
Team

MISSION

Humanitarian OpenStreetMap Team (HOT) applies the principles of open source and open data sharing to create maps vital for humanitarian response and economic development.

A MESSAGE FROM HOT'S EXECUTIVE DIRECTOR

MAPPING OUR WORLD *TOGETHER*

Imagine a global community of volunteers that is continually working together to provide reliable data to identify those most in need, understand their challenges and empower them to improve their lives and communities in a meaningful way.

Humanitarian OpenStreetMap Team (HOT) works tirelessly to do just this: coordinating and supporting the efforts of the more than 8,000-strong global HOT community members in dozens of countries. HOT employs the latest open source technology to train and equip people living in some of the world's most vulnerable places to put their communities onto the world map for the first time.

Working with HOT, the outstanding collective efforts of this dedicated global volunteer force have impacted the lives of millions around the world – and it's just the beginning. Our five-year anniversary in 2015 saw a year of unprecedented growth, burgeoning community involvement, increased financial contributions, robust collaboration with multiple renowned partners and our largest and most complex disaster response activation ever in Nepal. We also held our first annual HOT Summit, addressing effective humanitarian and economic development uses of OpenStreetMap (OSM), the world's premier source of open geospatial data.

Mapping Our World *Together*, HOT is recognized as a critically vital source for helping make data accessible in two key areas: to meet the information needs of humanitarian responders and to promote disaster resilience and sustainable development through empowering community projects, all while leveraging the latest technology in order to help make it all happen. We are proud of our 2015 achievements and excited as we look forward to continued growth and improving services as we passionately endeavor to build an even larger global community of neighbors helping neighbors make a difference, impacting all our lives for the better.

Please join in celebrating our accomplishments and sharing HOT's commitment to our humanitarian mission.

Thank you for your support,

Tyler S. Radford
@TylerSRadford



HOT AT A GLANCE



20 Million+

People put on the map through Missing Maps



100%
~\$1 Million

Funded through grants and donations

Monies raised in 2015

Highest since HOT's founding



8,000+

Global volunteer community



273%
13

Increase in volunteer participation year-over-year

Global partnerships

Including American Red Cross, UN OCHA and Doctors Without Borders



3

New tech tools launched in 2015

OpenAerialMap, Field Papers (redesigned) and OSM Export Tool v2



41

Disaster response activations worldwide since 2010



Humanitarian
OpenStreetMap
Team

Our Organization in 2015

7 Board members in **7** countries

23 Staff members in **5** countries

5 Interns from Outreachy

8,000+ Volunteers

Offices in **3** countries



130
Participants

60
Organizations

28
Participants provided
financial support

OPENSTREETMAP (OSM)



The largest crowd-sourced mapping project

2.5M Volunteer users

2015 HOT Community Projects

6 Countries with HOT-sponsored community mapping/training projects
(Indonesia, Jamaica, Malawi, Mongolia, St. Lucia, Tanzania)

12+ Countries with HOT member mapping projects

3K+ People trained in OSM across Africa and Asia since 2011

2015 HOT Disaster Mapping

5 Disaster activations (Typhoon Pam, Vanuatu; Nepal earthquake; Salgar landslide, Colombia; Hurricane Patricia, Mexico; Afghanistan/Pakistan earthquake)

8K+ Nepal earthquake activation contributors (2K in the first 48 hours)

13M+ Edits made during the Nepal activation

28K Registered users on the HOT Tasking Manager



20 Million
Total people
put on the map

275 Mapathons
in **33 countries**

12,000
Total Missing Maps
unique mappers

RESPONDING TO CRISES

NEPAL



HOT Disaster Activation Impacts Earthquake Relief

The effectiveness of an online collaboration platform to aid the approximately 8 million people affected by Nepal's 2015 earthquake (magnitude of 7.8) last April was evident in the unprecedented response of HOT's largest scale disaster activation to date. The global HOT community of 8,000+ volunteers rallied to organize massive support within mere hours of the biggest earthquake since 1934 to strike this mesmerizing but isolated region of the world. Nearly 9,000 lives were lost and many more in Kathmandu and the surrounding region were left in dire need of food, shelter and medical services as the epicenter was just 48 miles northwest of the capital.

HOT coordinated with a group of local champions at Kathmandu Living Labs in mobilizing humanitarian efforts for relief and recovery in Nepal by acting as a bridge between the OpenStreetMap community and international aid organizations. Aerial imagery was an essential tool in the strategy: pre-disaster mapping helped volunteers trace homes, buildings, roads and forest trails into OSM, enabling rescue and relief activities while post-disaster imagery facilitated locating open spaces, damaged infrastructure, temporary shelters and human settlements to target areas in need. Areas of priority were further defined, satellite imagery digitized and maps and data distributed to multiple partner organizations to meet the challenge of reaching those at risk and in need, enabling help to arrive more quickly.

By harnessing the power of the volunteer community via crowdsourcing in Nepal to create and share maps, HOT's methodology has set the standard for speed and accuracy of disseminating geographic information in disaster response. Utilizing social media, thousands sprang into action to trace roads, residential areas and buildings, connecting the missing links to bring meaning to the voluminous real-time data inputs. "Five days after the earthquake struck, 3,679 mappers had made 3 million+ edits to the map – it was an amazing groundswell of effort," said Harry Wood, former HOT board member. The massive disaster involvement of the HOT global community has added a whole new dimension to crisis response in Nepal and around the globe.



HOT: Mapping to Make a Difference

The numbers tell a story of compassion, dedication and commitment to reconstruction and recovery in Nepal's earthquake-stricken communities.



Kathmandu Living Labs



Mapped an area of **6,214** square miles in detail in **4** days, including coverage of road networks, hiking trails, built-up areas, building footprints, river crossings and temporary relief camps

Quadrupled road mileage and added **30%** more buildings in **48** hours

Identified **15** priority areas, **8** of which were completed and validated

Attracted more than **8,000** volunteer contributors worldwide, one-third of whom were new mappers

Made maps available on the web as half-hourly data exports, print maps and offline maps for Android

“ The experience of working with the HOT team around the world is one of the biggest thrills of volunteering. Every disaster activation brings yet another talented, passionate and open-hearted person into HOT’s circle of volunteers. And for each one I meet I know there are so many more quietly tracing the map, contributing their time without necessarily getting any personal recognition or reward beyond knowing they’re contributing to the common good. It’s an *amazing* experience and I’m always ready to come back for more. ”


Robert Banick, HOT Volunteer Lead, Hurricane Patricia

Mexican President Recognizes HOT’s Role in Avoiding Disaster

The threat of Category-5 Hurricane Patricia to significantly damage Mexico’s Pacific coast states of Colima, Nayarit and Jalisco in October 2015 was undeniable. Anticipated winds of up to 200 miles per hour meant in all likelihood this hurricane would be the strongest one on record. Preparedness in light of considerable potential damage and response necessities surely depended on having accurate maps – made possible because of HOT’s activation to mobilize a sizeable volunteer community utilizing OpenStreetMap tools and technology. HOT also received explicit permission from the Mexican government to import data including administrative boundaries, roads, schools and hospitals from its own open data site – a very exciting first for HOT during a disaster activation.

This ambitious work was made possible when 500+ contributors worked tirelessly to map 5,600 miles of roads and 72,000 buildings in 72 critical hours. Additionally, pre-event DigitalGlobe imagery was processed to provide improved coverage in priority areas and Mexico’s INEGI data was analyzed to identify missing roads as well as road names, all of which was later incorporated into OSM data.

This crisis response hardly went unnoticed. On May 17, 2016 (Internet Day, named in recognition of new technologies for improving the standard of living through greater understanding of technology and its many uses) digital leaders gathered at the invitation of President Enrique Peña Nieto of Mexico to discuss the future of technology and “the Internet” for its citizens. At Los Pinos (the equivalent of the US White House), the humanitarian mapping efforts during Hurricane Patricia made possible due to the innovative technology of the global HOT community took center stage when the President of Mexico officially recognized HOT’s outstanding work, conveying thanks to all who mobilized and joined forces to provide beneficial mapping data. Fortunately Hurricane Patricia eventually lost strength and was downgraded to a tropical depression and while no lives were lost, significant property damage requiring rebuilding would later benefit from HOT’s data to assist in reconstruction in affected areas.



Expressing his heartfelt appreciation to HOT for the efforts of all those involved in mapping for Hurricane Patricia, Mexico’s President Nieto said, “I just want to thank you because it’s an example that illustrates very well what we can achieve together.”



MEXICO

BUILDING RESILIENT COMMUNITIES

Mapping Improves Life in Flood-Prone Areas

When flood water threatens the characteristically flat Tandale ward in the municipality of Kinondoni in Dar es Salaam, Africa's fastest growing city, its reputation for growing unplanned and organically is dramatically apparent. In 2015, HOT organized teams of students from Ardhi University and the University of Dar es Salaam along with local community members, training them in the use of phones and GPS to create maps vital for reducing flooding and improving life for those living in the region. Locally the project is known as "Ramani Huria" and Tandale was one of the three wards mapped in the initial phase from March until May. By the end of 2015, mapping was completed in 29 wards. Julia Letara, Kinondoni Municipal Town Planning Officer, gratefully summed up the wisdom of HOT's undertaking: "A map is a simple language to talk with people and reach everyone."

Ramani Huria is executed with the support of The World Bank along with the American and Tanzanian Red Cross and local partners such as municipal councils and planning agencies, the Tanzanian Commission for Science and Technology (COSTECH), the University of Dar es Salaam and Ardhi University. Utilizing OpenStreetMap, previously unmapped areas are identified enabling communities to take stock of and improve drainage systems, cleaning streams and improving the water supply. More efficient planning for roads, housing, schools and public services can improve the standard of living, health and productivity, impacting everyday life. Better accessibility of information provides the means necessary for isolating outbreaks of cholera. The sense of ownership of creating and sharing up-to-date maps provides a welcome, easier way to communicate and a newfound sense of community stemming from grass-roots involvement and support amongst neighbors.

Recognizing the successful impact of HOT's community mapping project in Tandale, Osiligi Lossai, Ward Executive Officer stressed, "All the people should know what we are doing. That's why we collaborate together. Let them understand what is going on and we will transform this knowledge to our people. Having a map is the preliminary stage of putting a layout of good design together for any plan." It is this synergistic approach that is undeniably empowering to help build a lasting foundation for self-reliance while inspiring and enabling communities to become more resilient.



HOT Mapping Gets Results

The OSM dataset in Dar es Salaam was quadrupled and areas now fully mapped are home to an estimated 3 million people.

Action	January 2015	December 2015
Waterways mapped:		
	108 miles	780 miles
Roads mapped:		
	1,069 miles	2,110 miles
School buildings mapped:		
	3	1,700+
Wards mapped:		
	1	29

TANZANIA

INDONESIA

INDONESIA: HOT's Plan for Disaster Preparedness

Understanding the vital need for readily available base data, HOT is working in Indonesia to focus on the role of data preparedness for Disaster Risk Reduction (DRR) to enable insight into the likely impact of future events. Based on the success of a pilot program HOT initiated in 2011, this project has steadily grown in size and scope. The premise is simple: In order to minimize exposure to vulnerability, governments need to project and identify where and who is at risk for natural hazards such as earthquakes, tsunami, volcanoes and floods to help plan better preparedness and response activities. InaSAFE, developed in a joint initiative with the Australia Indonesia Facility for Disaster Reduction (AIFDR) and World Bank, is open source risk modeling software combining data from scientists, local governments and communities to produce realistic natural hazard impact scenarios in order to calculate locations and communities at risk.

Because this software is dependent on having sufficient base data, such as critical infrastructure, HOT's mission is to teach communities the best methods for collecting and mapping this vital information in support of creating a more disaster-resilient region.

During its launch, Phase I of HOT's data project in Indonesia focused on increasing urban and rural mapping through workshops, a university mapping competition and partnerships with the Indonesian and Australian governments. Phase II (July 2012-March 2013) called for concentrating on the collection of exposure information to impact the development of modeling software. To achieve this, the strategy was twofold: building a team of OSM experts in Indonesia and conducting workshops in six disaster-prone areas to collect better data. Phase III (2013-2015) grew to include the University Roadshow, a program consisting of socialization and training events hosted by thirteen universities where students were familiarized with the exposure collection process. Mapping activity using OSM, QGIS (an open-space geographic information system) and InaSAFE has subsequently been incorporated into several university teaching curricula.

In 2015 the program evolved naturally as Phase IV (2015-2018) leveraged all its previous experience and success to expand the University Roadshow through collaboration with national and local disaster management agencies. A new smartphone app (GeoDataCollect) now aids in mobile field data collection as mapping activity gains even more momentum to provide support for much-needed effective disaster response and risk management. Throughout Indonesia, HOT's coordination of readying accountable and trusted information means InaSAFE enables disaster managers to meet the goals of contingency planning.

"HOT members are like your family. They welcome you, share their knowledge and experience and take on active roles before, during and after a disaster."

Yantisa Akhadi, HOT Project Manager, Indonesia



HOT On a Solution: Improving OSM Data for Disaster Management

2015 was a record year for the development of Indonesia's data-driven response preparedness.

- 2,500** Trained in OSM, InaSAFE/QGIS (from 2011 - 2015)
- 1,076** Exports of OSM-created Indonesia data

January 2015	December 2015
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Buildings	
1,918,878	4,199,923

Water & Roadways	
2,460,272	4,868,536



INNOVATIVE TECHNOLOGY & TOOLS



OpenAerialMap (OAM): The best tool for accessing openly-licensed aerial imagery

At the heart of HOT's ability to successfully improve humanitarian response and disaster risk reduction planning is a reliance on continuous technology innovation.



OpenAerialMap

In 2015, a groundbreaking new platform called OpenAerialMap (OAM) was launched. This user-friendly collection of searchable aerial imagery has proven tremendously useful in disaster response, community preparedness and economic development. The centralized source of aerial imagery, compiled from satellites, aircraft, unmanned aerial vehicles (UAVs) and other platforms aligned with open datasets, is the result of software development fueled by the contributions of its dedicated users. Cristiano Giovando, HOT Technical Project Manager, describes its importance this way: "All of these systems are creating a revolution in how aerial imagery is done... it's democratized."

Addressing time challenges and the need for imagery with intuitive interfaces, OAM provides functions for hosting, uploading, sharing, searching, filtering, displaying, downloading and using aerial imagery data to make finding, accessing and sharing information both possible and easy. HOT's debut of a single place to find open imagery has transformed collective global efforts and is widely recognized as a critical means for improving humanitarian response and disaster preparedness.

HOT is grateful to have received a generous Humanitarian Innovation Fund (HIF) grant in 2014 to support the development and launch of OAM after a year of intense design and coding following many years of brainstorming and prototyping. A vision fulfilled, this technological innovation for connecting those wanting to share data with those needing imagery is indispensable for Mapping Our World *Together*.

2015 FINANCIALS



TRANSPARENT



ACCOUNTABLE



EFFICIENT

HOT received record funding, allowing us to improve our technology, increase project funding and grow our global community.

100%

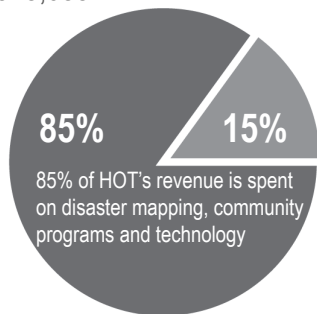
Funded through grants and donations

4,000%

Increase in Volunteers;  up from 200 in 2010 to 8,000 in 2015

2015 Budget

Programs:
\$915,058



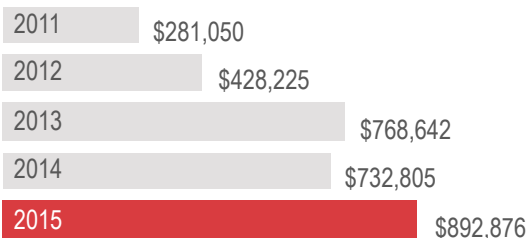
Management and
Operations:
\$134,702

Total 2015 Budget:
\$1,049,760



GOLD GuideStar Rating
(Highest rating)

STRONG GROWTH IN PUBLIC SUPPORT



**For more information on HOT
Finances, visit:**

hotosm.org/finances

GLOBAL HOT COMMUNITY



Who belongs to the Global HOT Community?

8,000+	Volunteers
104	Voting members
7 x 7	7 board members in 7 countries
23	Staff members in 5 countries
5	Outreachy interns
9,700+	Community members on social media/mailling lists
28,000	Registered users on the OSM Tasking Manager
13	Global partners



GLOBAL HOT COMMUNITY: MAPPING ULAANBAATAR

MONGOLIA

GLOBAL MAPATHON

Meet the team that mapped Ulaanbaatar, Mongolia in a Global Mapathon. Mappers included HOT interns, university students, mapping enthusiasts and city government staff.

17 Teams of 50+ Mappers...



The World Bank
The Asia Foundation
Ulaanbaatar City Government
The Mongolian University of Science
and Technology (MUST) students



...delivering **20,000** edits and improving urban governance in just one weekend.

“ In early 2013, I would have never imagined that two years later I would have great friends and feel strangely at home in Mongolia. ”

Russell Deffner, HOT Voting Member

GLOBAL HOT COMMUNITY: MANAGUA, NICARAGUA



The team that brought the Central American capital the first complete transportation map...

NICARAGUA

- 40,000 Printed copies of the transit map, made possible with HOT support of crowdfunding campaign
- 70+ Donors
- 2 Million Managua inhabitants

GLOBAL HOT COMMUNITY: ZAMBIA



The team that mapped water and sanitation facilities in Mtendere, Zambia...



GIZ, commissioned by German Government
Ministry of Local Government and Housing (MLGH)
Lusaka Water and Sewerage Cooperation (LWSC)
Millennium Challenge Account
Local community volunteers

...setting the foundation for organizations to set up and improve the water sanitation and solid waste management in the compound.

This event will help the residents of Mtendere know more about the water and sanitation facilities in their area. This will act as a baseline to monitor the sanitation activities in the area using community based evidence which is the best way to monitor the developments made in regard to sanitation. GIZ is working closely with OSM Zambia.

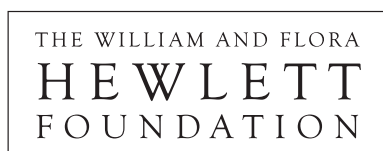
Conrad Thombansen
GIZ Programme Director Reform of the Water Sector in Zambia

ZAMBIA



GLOBAL HOT COMMUNITY: DONORS & PARTNERS

Meet the supporters, the partners and the aid organizations who use our maps to make a difference.



THANK YOU, GLOBAL HOT COMMUNITY!



The time, money and collective efforts of HOT donors, volunteers, community leaders, partners and friends in 2015 meant the birth of new tech tools, our largest disaster response and a record number of people put on the map.

LOOKING AHEAD

More Mapping, More Miracles

HOT's success is due to a continuously collaborative process as we strive to meet the most fundamental of needs. We are enormously grateful for all in the global HOT community who have helped accomplish our mission and affect tremendous change as millions of people and their communities are now counted for the first time.

But there is much more to be done. We look forward to a wider adoption of OpenAerialMap as well as OpenStreetMap. As we work together to grow open map data, improve the quality of map edits and make OpenStreetMap more accessible in the developing world we expect to teach, train and spread knowledge with an even larger global community that shares our mission to improve humanitarian aid and foster greater self-sufficiency. Looking ahead we will begin to align our work more closely with the 17 Sustainable Development Goals as adopted by the UN in September 2015 that emphasize and encourage multi-sector participation to meet the world's most critical challenges by 2030.

In 2016 we will introduce the newly-created HOT Impact Grants program to allocate funding for targeted community improvement projects born of mapping efforts around the world. In Tanzania, we plan to expand our work as our focus is shifting to additional sectors such as public transportation and WASH (water, sanitation and hygiene). Through an initiative funded by the Bill & Melinda Gates Foundation, HOT is also working in Uganda to improve access for the poor to the formal financial system through data collection of service locations to identify underserved areas. While much has been accomplished, and we are ready to respond rapidly in the event of the next disaster, we are also intently focused on designing and implementing better long-term preparedness, risk-reduction, and socio-economic development strategies. To support our efforts we aim to increase our donor base and our network of volunteers – truly our greatest strength – around the world as well as expand and strengthen our local and international partnerships. Young people are at the core of HOT's activities and a new partnership with the YouthMappers consortium will constitute a key part of this strategy.

Together, we believe we can – and must – achieve more. We are honored to welcome the challenge and grateful for your support.

MAPPING OUR WORLD

Photo courtesy of American Red Cross



TOGETHER



Humanitarian OpenStreetMap Team

Get involved! Donate, volunteer and learn to map!

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Humanitarian OpenStreetMap Team board, staff, members and volunteers.

Cover photo courtesy of Rodrigo Rodriguez from OpenStreetMap Nicaragua

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