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Harvard

& more

Digital-Humanitarians.com

We Robotics

Dr. Patrick Meier
Executive Director
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[@WeRobotics](#)

We Robotics





Philippines: Typhoon Haiyan

TEMPORARY SHELTER

DONOR/PARTNER: GAIN INTERNATIONAL
NO. OF UNITS: 100 Bahay Kubo
LOCATION: Brgy. 105 New Kawayan (site 6)
FLOOR AREA: 4.5m x 4.5m
AREA OF COVERAGE: 8650 sq.m

DONATED LAND

DONOR/PARTNER: ARCHDIOCESE OF PALO
LOT NO.: 4495
DONATED LAND: 7 Hectares

*Prox
Dumpsite*

TEMPORARY SHELTER

DONOR/PARTNER: OPERATION COMPASSION
NO. OF UNITS: 100 Bahay Kubo
LOCATION: Brgy. 105 New Kawayan
FLOOR AREA: 4.5m x 4.5m
AREA OF COVERAGE: 3942 sq.m

PERMANENT SHELTER

DONOR/PARTNER: PHIL. RED CROSS
NO. OF UNITS: 5000 UNITS
LOT NO.: 5835, 4490, 4484, 4809, 1(4476), 3(4476)
(5(4478)), 6 & 38
FLOOR AREA: 22 sq.m
AREA OF COVERAGE: 36.1611 Has

MARILLITA HIGHWAY

PERMANENT SHELTER

DONOR/PARTNER: DAYANET
NO. OF UNITS: 100 UNITS
LOT NO.: 5400
FLOOR AREA: 20 sq.m
AREA OF COVERAGE: (APPROX) 4000 sq.m

TEMPORARY SHELTER

DONOR/PARTNER: OPERATION BLESSING
NO. OF UNITS: 60 Bahay Kubo
LOCATION: Brgy. 106 Sto. Niño
FLOOR AREA: 4.5m x 4.5m
AREA OF COVERAGE: 3564 sq.m

PERMANENT SHELTER

DONOR/PARTNER: DSWD
NO. OF UNITS: 134 UNITS
LOT NO.: 5400
FLOOR AREA: 20 sq.m
AREA OF COVERAGE: (APPROX) 5000 sq.m

PERMANENT SHELTER

DONOR/PARTNER: HABITAT FOR HUMANITY
NO. OF UNITS: 2500 UNITS
LOT NO.: 5402, 4488
FLOOR AREA:
AREA OF COVERAGE: 14.147 Has

PERMANENT SHELTER

DONOR/PARTNER: OPERATION COMPASSION
NO. OF UNITS: 1000 UNITS
LOT NO.: 4460, 4470, 20, 30 & 32, 4459
FLOOR AREA: 20 sq.m
AREA OF COVERAGE: (APPROX) 12 Has

PERMANENT SHELTER

DONOR/PARTNER: HABITAT for Humanity
NO. OF UNITS: 852 HOUSING UNITS
FLOOR AREA: 20 sq.m
LOT NO.: 4428
AREA OF COVERAGE: 7.0 Has

PERMANENT SHELTER

DONOR/PARTNER: ZONTA INTERNA
NO. OF UNITS: 28 UNITS
LOT NO.: 4466
FLOOR AREA: 20 sq.m
AREA OF COVERAGE: (APPROX) 300

PERMANENT SHELTER

DONOR/PARTNER: PICE (Phil. Institute Of Civil Engineers)
NO. OF UNITS: 50 UNITS
LOCATION: LOT 5399
FLOOR AREA: 20 sq.m
AREA OF COVERAGE:

SUBDIVISION PLAN OF LOT 4466



PERMANENT SHELTER

DONOR/PARTNER: MADIKIMBE YUKMO/
FACILITIES: 50 HOUSING UNITS (20 sq.m floor
area w/ solar panel & provision for left)
1 SCHOOL BUILDING w/ 8
classrooms
1 MEDICAL CLINIC
LOT NO. 4466
AREA OF COVERAGE: (APPROX.) 4500 sq.m

PERMANENT SHELTER

DONOR/PARTNER: LIONS CLUB INT'L
NO. OF UNITS: 50 UNITS
LOT NO.: 4466
FLOOR AREA: 20 sq.m
AREA OF COVERAGE: (APPROX) 8500 sq.

UN/OCHA, UNICEF, UNHCR, UNDP, UNDAC,
UNFPA, UN/DPKO, IOM, WFP, ICRC, IFRC,
Direct Relief, NetHope, ARC, World Bank, MSF,
FSD, FHI360, ECHO, USAID, Harvard University,
MIT, Texas A&M University, EPFL, PRIO,
HOT/OSM, OAM, DJI & Others

[Code of Conduct](#)

[Guidelines](#)

[Timeline](#)

[Translations](#)

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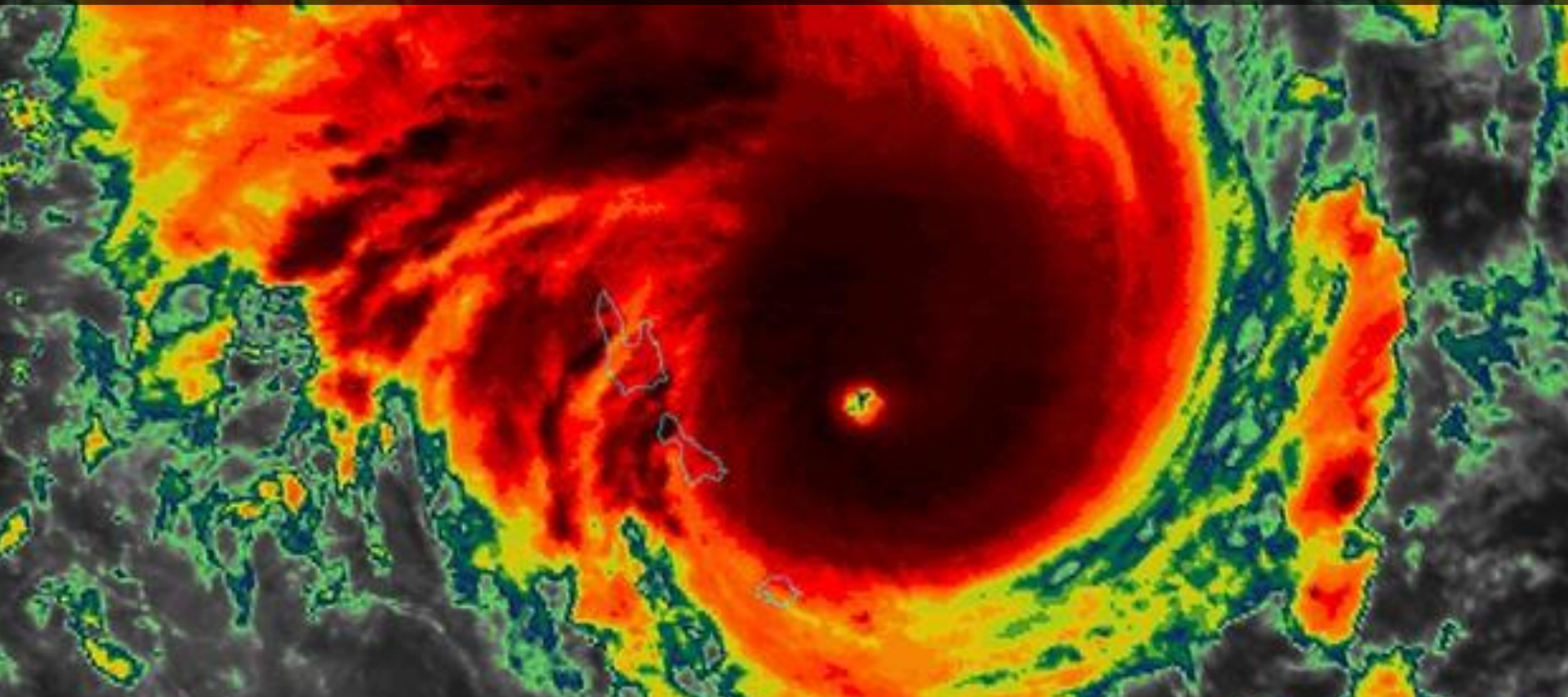
UAVcode.org [#UAVcode](https://twitter.com/UAVcode)

Code of Conduct

&

Data Management
Community Engagement
Effective Partnerships
Conflict Sensitivity
Cargo Delivery*

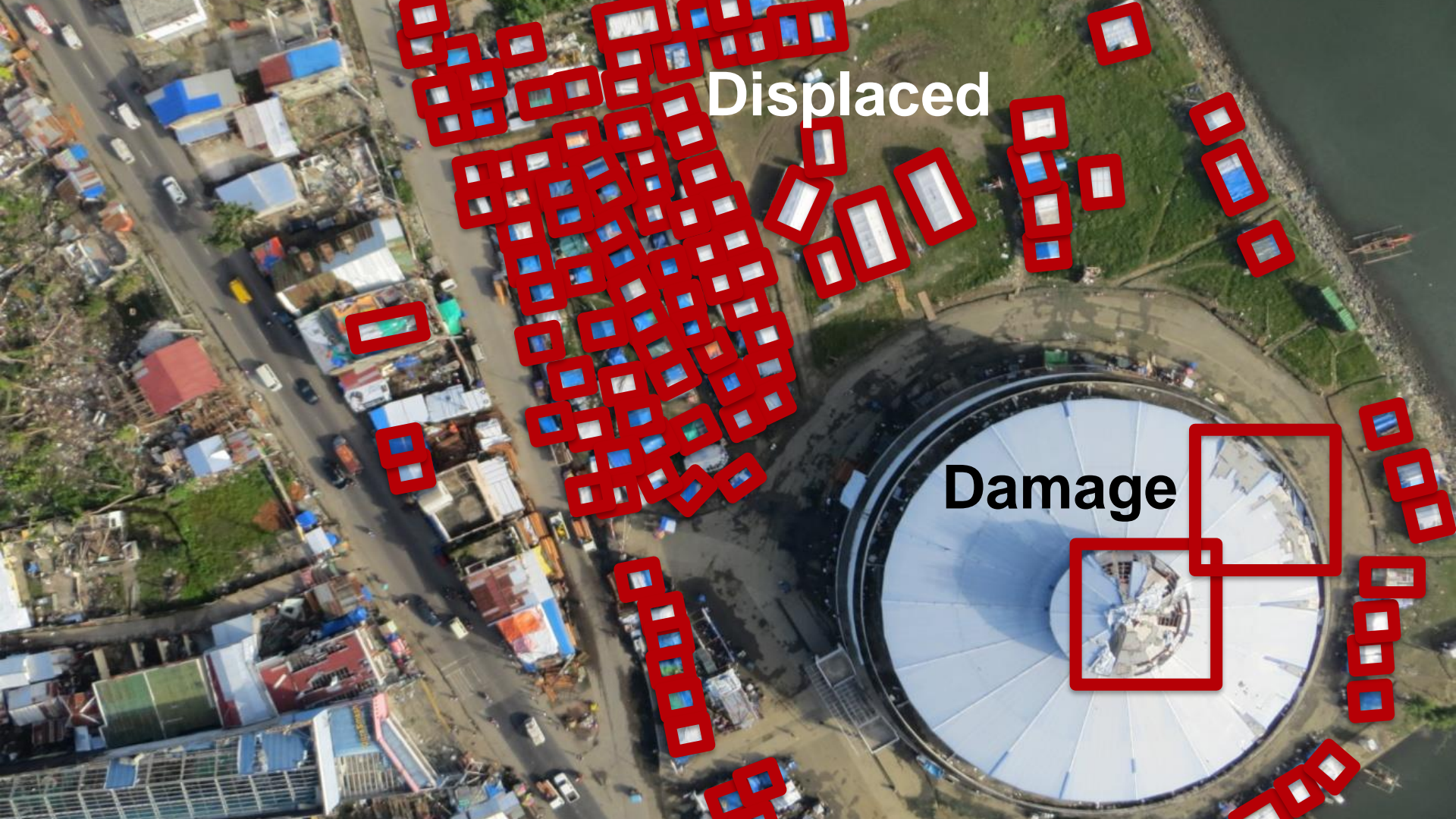
South Pacific





Damage?

Displaced?



Displaced

Damage





Nepal: Earthquake

April 25, 2015

Community
Disaster
Management
Committee
9 Ward, Kirtipur















WHITE

- PUBLIC BUILDINGS
- SCHOOLS
- CDMC + RESCUE HOUSE
- TEMPLES

GREEN

- HEALTH INFRASTRUCTURE
- CLINIC
- PHARMACY

RED

- DISASTER PRONE
- DEBRIS
- DESTROYED HOUSE

YELLOW

- TEMP. SHEETERS

BLUE

- WATER RESOURCES
- POND
- DRINKING WATER

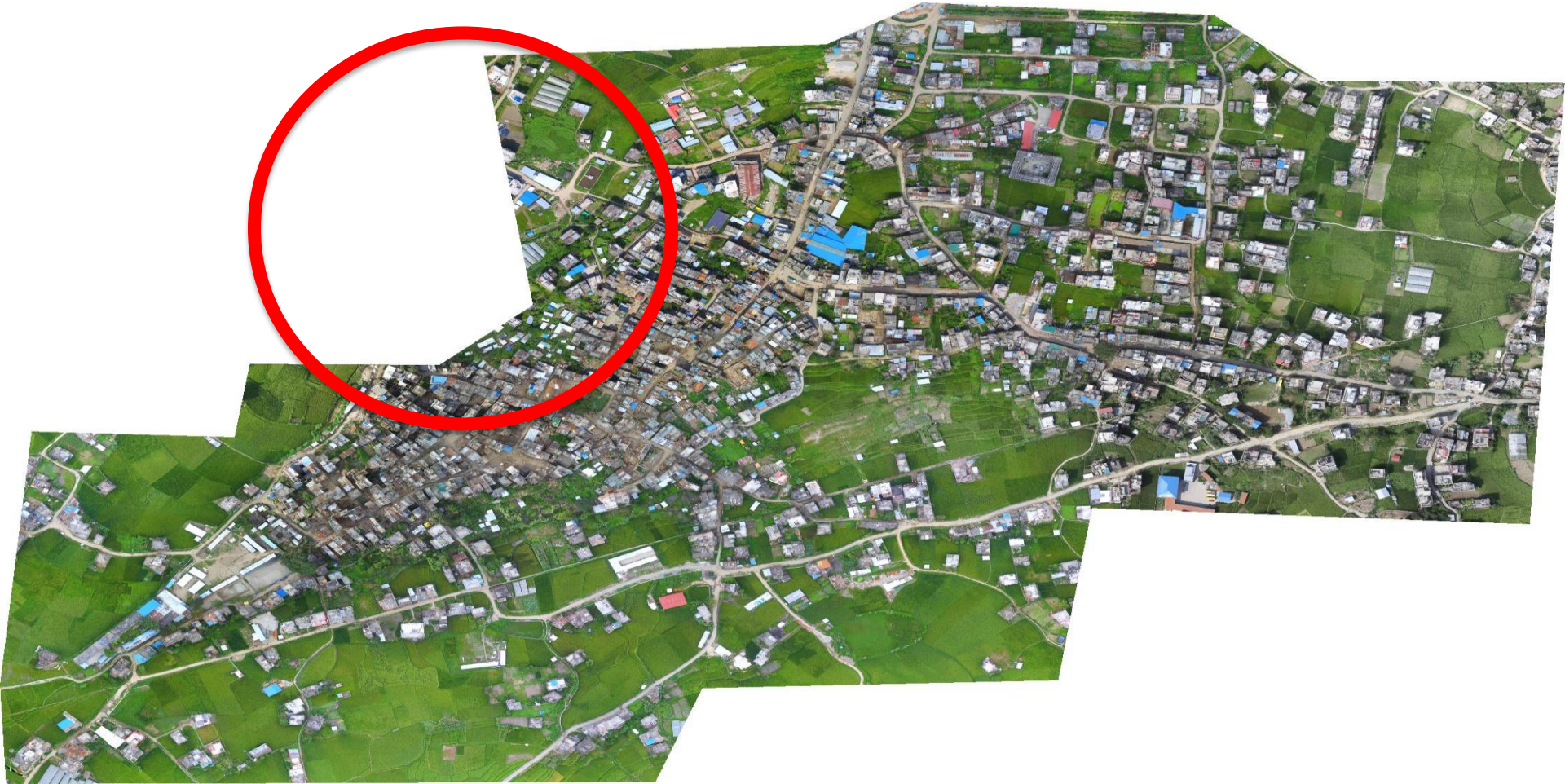
ORANGE

- OPEN SPACE









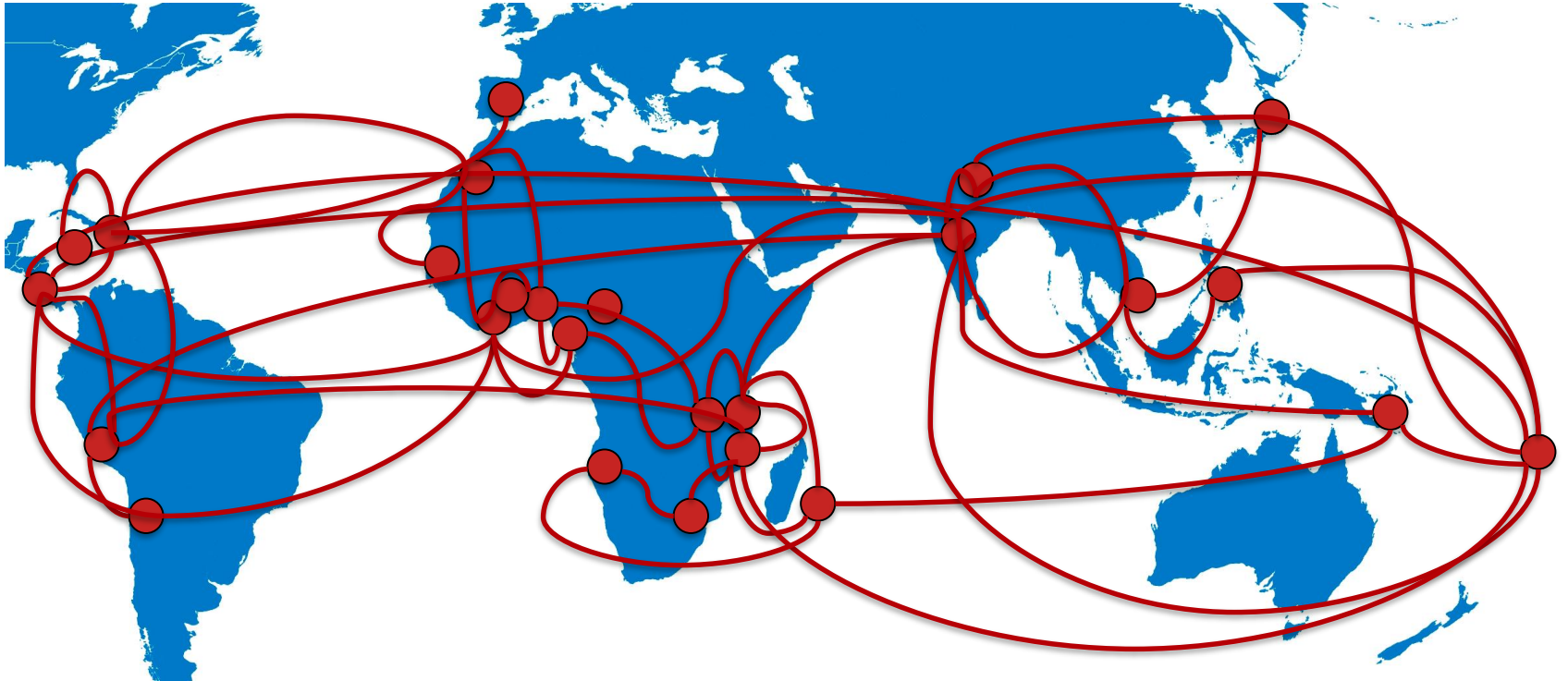




Nepal
Flying Labs



We support a global community spanning the aid, health, development and environmental sectors to openly share learnings, inform ethical standards, convene stakeholders and champion localization.





The Power of Local

"It's not about the robots." This is our mantra. In all of our work, only the smallest part is about flying robots. Our focus is on the value and impact emerging technologies create when applied to solve local social challenges. And to do so, we rely on our most precious asset: local expertise — the highly diverse and strongly passionate people who make up our growing network of Flying Labs.

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[Zambia](#)





Drones for Good: Mapping for the Kenyan Red Cross with Altohelix

Posted By: Miriam McNabb on: October 03, 2019



image courtesy Altohelix

Bringing drone technology to the global communities who may benefit most is difficult. Challenges range from regulatory hurdles, communication issues, extreme weather, to community acceptance: but aerial imagery and mapping can provide stunning benefits to remote populations.

At the Pix4D User Conference in Denver this week Hyun-June Choi, CEO of Canada's Altohelix, took us inside their mission working with the Kenyan Red Cross.



Perú
FlyingLabs



UAV DEL Perú
Aviones no tripulados

We Robotics

Perú FlyingLabs

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Tanzania
Flying Labs



AI-Mapped Buildings in Tanzania

Data from Commission for Lands, Revolutionary Govt of Zanzibar & WeRobotics
(source, CC BY 4.0)

■ Completed ■ Unfinished ■ Foundation







Côte d'Ivoire
Flying Labs







Susan Slattery

@susiemaggie

This morning a team from **@FijiRedCross** flew to Kadavu to respond in the wake of **#TCKeni**. They were joined by the South Pacific Flying Labs who will pilot the using **#drones** in **#humanitarian** response. **#UAVs** **@WeRobotics**



2019
Women
TO WATCH IN UAS



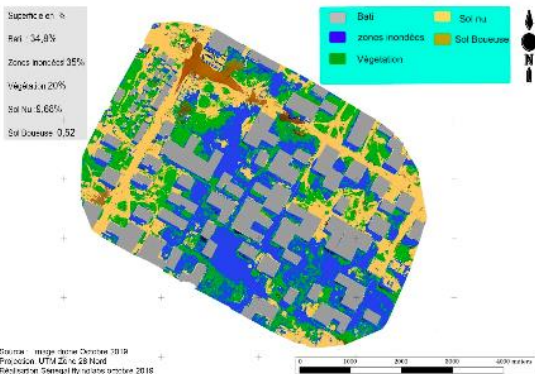
Flood mapping using drone data in Keur Massar



Aerial view of the flooded area (Keur Massar)



Senegal Flying Labs team planning the automatic flight

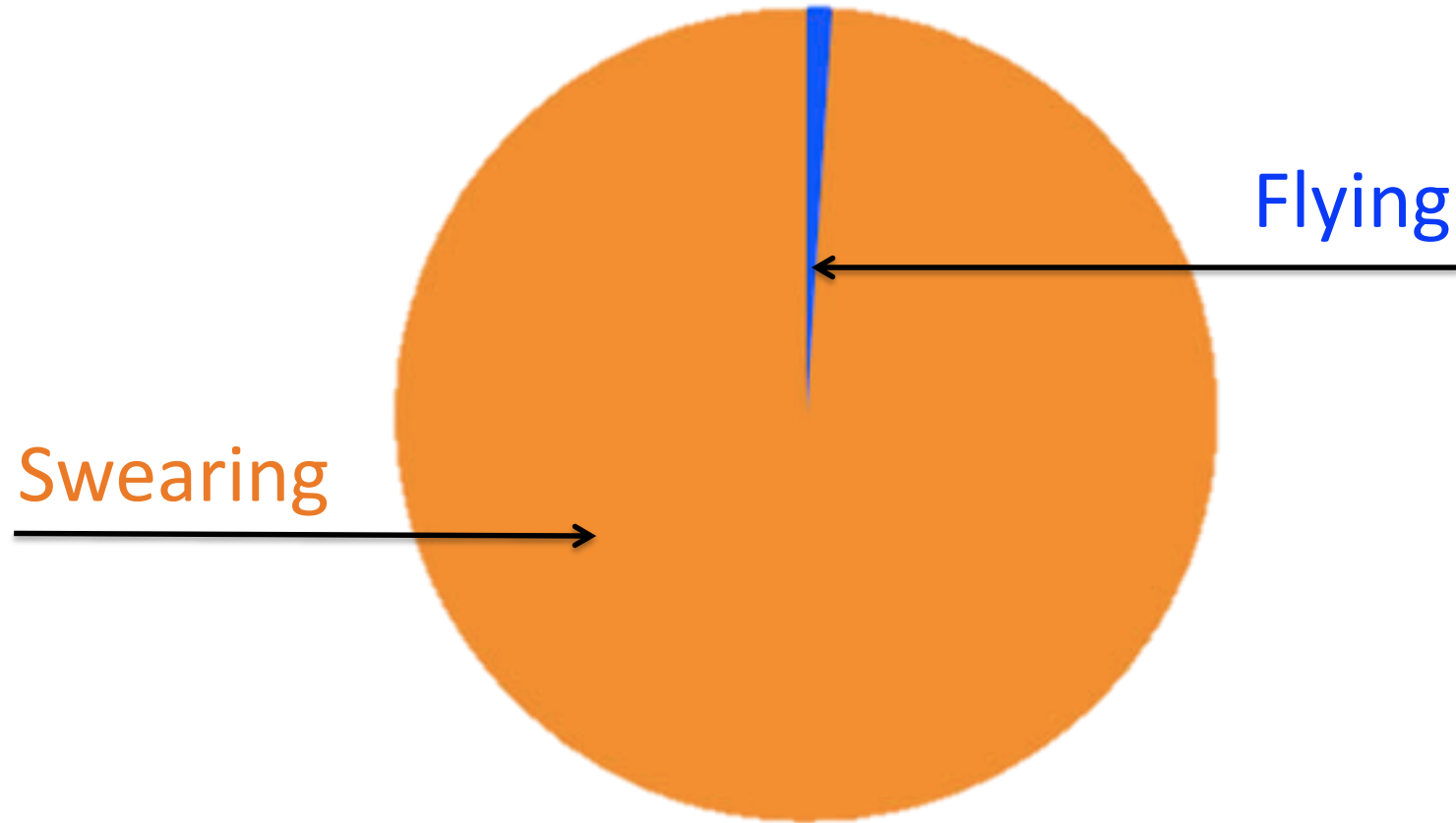


Map of land use classes

OVERVIEW	
Flying Labs	Senegal Flying Labs
Geographic area	Keur Massar, Dakar (Senegal)
Date	October - November 2019
Sector program	AidRobotics

SCOPE	
Stakeholders (clients)	Senegalese Red Cross Society
Challenge	Lack of up-to-date spatial information of Keur Massar in Dakar made it difficult for emergency response teams to plan their interventions. With difficult or no direct access to the affected areas, it was challenging to assess the extent of damages and number of houses touched by the flood.
Scope	The scope of the project included mapping the flooded areas of Keur Massar with centimeter-level precision. An ultimate goal was to find a method to assess the extent of damages in a timely manner and produce data, which could be used as a proof necessary to obtain emergency funding from the International Committee of the Red Cross.
Outcome	<p>The methodological approach is divided into four parts:</p> <ol style="list-style-type: none"> 1) Community engagement + volunteers briefing 2) Site visit 3) Flight mission planning 4) Drone data acquisition 5) Data processing and analysis <p>The data analysis provided useful directions for the Red Cross teams and facilitated the intervention in the affected areas. It allowed for a rapid damage assessment through a pixel based land cover analysis, rapid analysis of damaged infrastructure and visualisation of accessible roads. The use of supervised classification led to gaining time during prioritization of interventions.</p> <p>The community engagement included informing the inhabitants about the scope of the project, its objectives and flight area to build awareness and ensure safety. It was crucial to also brief the volunteers on the further use of the aerial data.</p>
Next steps	Building the capacity of the Senegalese Red Cross Society to allow them to integrate drone (aerial) data into their workflow and superpose it with ground data collected by volunteers to add a higher level of detail and a better visual context.

DATA ACQUISITION	
Size of area	3 ha (0.03 km ²)
Drone	DJI Phantom 4
Sensor(s)	RGB camera
Flight plan software	Pix4D Capture
Flight height	60 m above ground level
GSD (Accuracy)	2.63 cm/pix
Number of images acquired	112



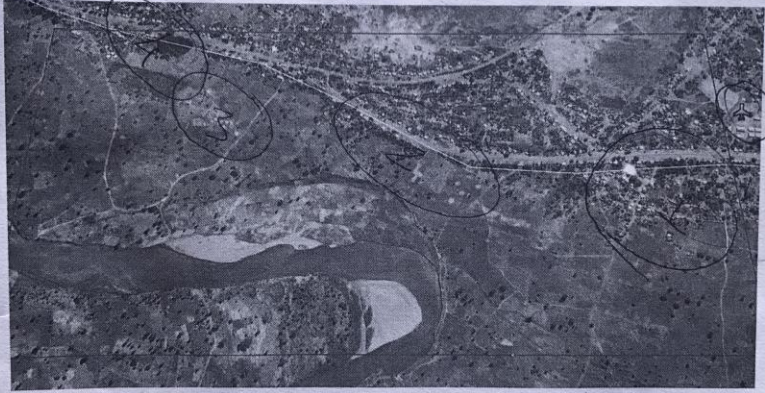
**Humanitarian Drone Missions:
Where does the time go?**

Humanitarian Drone Coordination Simulation: Malawi Floods

Context

Heavy rains have resulted in widespread flooding. Initial reports suggest significant damage to homes and infrastructure and affected populations in rural areas in need of immediate assistance. However, responders are unable to utilize satellite imagery due to the extensive cloud cover over the region. UAV Assessment Teams need to deploy as soon as possible to help disaster responders rescue survivors and identify damage to both infrastructure and crops.

The Area of Interest (AOI) is designated by the red line. Pilots should avoid crossing this boundary.



Features to be identified are represented by 1x1 meter colored panels. UAV Assessment Teams will need to locate the following:

- 4 "Survivor" markers represented by **Yellow panels** #1 Priority
 - 4 "Flood Zones" represented by **Blue panels**
 - 4 "Key Infrastructure Damage" represented by **Red panels** } #2 Priority
 - 4 "Significant Crop Damage" represented by **Green panels** #3 Identify high ground!
- Upon commencement of the simulation exercise at the takeoff/landing zone, UAV Assessment Teams will have 20 minutes to get their drones in the air. Safety is always the first priority. Local authorities and civil aviation officials have identified a Takeoff/Landing Zone for UAVs, designated by the **aircraft icon** (see map below).

Humanitarian Drone Simulations



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Peru

Myanmar





Mozambique



DR



Myanmar



Peru



Malawi





**Pilots
(Peru)**



**Analysts
(Myanmar)**



**Authorities
(Malawi)**





The Power of Local

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