

Cross-fertilisation of UN Common Operational Datasets and Crisismapping

October 2010

As defined in the IASC Guidelines Common Operational Datasets (CODs) in Disaster Preparedness and Response draft circulated to the IASC Task Force on Information Management in June 2010,

Common operational datasets are predictable, core sets of data needed to support operations and decision-making for all actors in a humanitarian response. Some of the CODs, such as data on the affected population and damage to infrastructure, will change during the different phases of the response and therefore will need to be frequently updated and maintained. Other CODs, such as rivers and village locations, are likely to remain the same throughout the response. The CODs are proactively identified and maintained prior to an emergency as part of data preparedness measures and made available by the OCHA (or pre-agreed in-country alternate) within 48 hours of a given humanitarian emergency. All CODs must meet minimum criteria for format and attribute information in accordance with national standards.

Seven CODs have been identified in a process that took over two years.

Dataset	Recommended Governance	Mandatory Data Characteristics
Humanitarian Profile (disaggregated by admin level and populated place)	- Guardian: OCHA - Sponsor: OCHA - Source: Government, Assessments, UNHCR	- Internally Displaced ¹ - Non-displaced affected - Host family/resident community affected - Refugee ² - Dead - Injured - Missing

¹ As defined in the UN Guiding Principles on Internal Displacement UN Doc. E/CN.4/1998/53/Add.2

² As defined in Refugee: Article 1, The 1951 Convention Relating to the Status of Refugees

Population Statistics	- Guardian: OCHA - Sponsor: UNDP,OCHA,UNFPA - Source: Government	- Total population by admin level (Individuals) -Total population by admin level (Number of Households) - Age - Sex - Average family size by admin level - Unique identifier
Administrative Boundaries (Geographic) admin level 1 admin level 2 admin level 3 admin level 4	- Guardian: OCHA - Sponsor: UNDP, OCHA - Source: Government	- Unique identifier (P-Code) - Name
Populated Places (Geographic)	- Guardian: OCHA - Sponsor: UNDP, OCHA - Source: Government	- Unique identifier (P-Code) - Names - Size classification - Population statistics - Status if capital of administrative division - Type (Village, spontaneous settlement, collective center, planned settlement)
Transportation Network (Geographic)	- Guardian: OCHA -Sponsor: Logistic Cluster -Source: Government	- Roads (Classified by size) - Railways - Airports/helipads - Seaports
Hydrology (Geographic)	- Guardian: OCHA - Sponsor: UNDP, OCHA - Source: Government	- Rivers (Classified by size) - Water bodies
Hypsography (Geographic)	- Guardian: OCHA - Sponsor: UNOSAT - Source: Remote sensing, Government	-Elevation -Resolution

Three key factors contributed to the ICT4Peace Foundation's expansion of these CODs in June 2010.

1. Crises this year, most notably Haiti in January, demonstrated clearly that actors outside the UN system are today, with their own sophisticated technology platforms and an approach to distributed work called crowdsourcing³, vital first responders producing, disseminating and archiving information before and often despite the UN and governmental actors. Though as yet embryonic, warts and all, this movement now broadly called crismapping affords an opportunity to link up the comparably slow-moving crisis response platforms and processes of the UN and Government's with more responsive, dynamic, intuitive, mobile device friendly, ground-truth centric, locally implemented and owned systems.
2. Challenges within the UN system to respond to crises of this scale. The Head of UN OCHA, Sir John Holmes, in a strongly worded email in February expressed his frustration over the UN's aid effort in Haiti, noting that "only a few clusters have fully dedicated cluster coordinators, information-

³ <http://en.wikipedia.org/wiki/Crowdsourcing>

management focal points and technical support capacity” and adding that the disjointed effort is casting doubts on the UN’s ability to effectively provide relief.

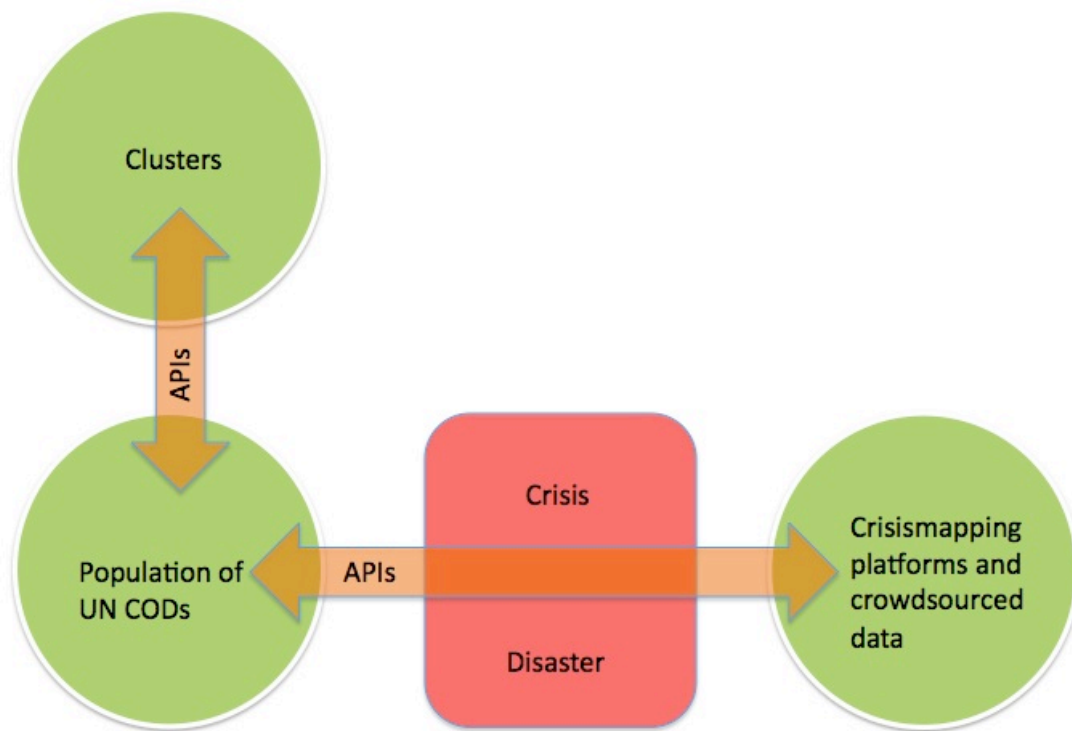
3. The creation and curation of the ICT4Peace Foundation’s Crisis Information Management (CiM) wikis⁴ for Haiti, Kyrgyzstan, the Gulf Oil Spill, the Chilean earthquake and the Pakistan floods engaged with hundreds of data sources for each wiki, both within the UN system and outside it. Sources like local news and social media and mainstream media on the web in particular stood out as vital resources, along with examples such as the development of the PFIF standard by Google to aid the cataloguing of missing persons and information generated by, disseminated via and archived on the platforms developed by Ushahidi, Sahana, CrisisCommons, OpenStreetMaps and InSTEDD in particular.
4. Importantly, the Foundation’s CiM wikis demonstrated that even for COD datasets, key information after a sudden-onset crisis often came from sources outside the UN and official Governments channels – for example with mapping and GIS information, health infrastructure related information, ground conditions and ad hoc IDP camp locations. The wikis also flagged a central issue with some key COD datasets – that even though there was agreement about what needed to be shared before a crisis, actual information population showed great variance.

Based on the Foundation’s experience, an expanded framework, connecting the IASC CODs to external resources and sources was distributed to CiMAG members in June 2010.

In addition to this, at the retreat of CiMAG on 5 October 2010 at IBM Palisades in New York, the ICT4Peace Foundation underscored the point made in the IASC draft document on CODs that *“some of the CODs, such as data on the affected population and damage to infrastructure, will change during the different phases of the response and therefore will need to be frequently updated and maintained.”* Even without an expansion of the existing CODs, the Foundation’s submission was that **crisismapping could and should feed into the updating of UN datasets after a crisis occurs, complementing timely efforts by UN agencies and the cluster leads to update this information.**

One useful metaphor for this exercise came from The International Network of Crisis Mappers (CM*Net) conference in Boston, held from 1 – 3 October. Following the keynote address at this conference by Dr. Soon-hong Choi, the UN CITO, many crisismappers called for an ‘API’ between the UN system and crisismapping community, an idea more than just a technical bridge seen as a way to cross-translate and cross-populate information especially after a sudden onset disaster or crisis. We proposed that the ‘API’s envisioned under the CiM strategy for information sharing and interoperability *within* the UN system – on a purely technical level and with slight modifications – could be leveraged for this purpose.

⁴ <http://wiki.ict4peace.org/>



A rough map of data sources for such an API would be, for the datasets that will need to be updated the most after a crisis:

COD dataset	Possible technical APIs to bridge data	Crisismapping data sources
Humanitarian Profile (disaggregated by admin level and populated place)	OpenGeoSpatial ⁵ , Simplegeo ⁶ , OpenGeo ⁷	DesInventar ⁸ , Relief and Information Systems for Earthquakes Pakistan ⁹ , Ushahidi instance, CrisisCommons ¹⁰ , Google PFIF ¹¹ , Global Voices Online ¹² , HaitiVoices ¹³ , Google Resource Finder

⁵ <http://www.opengeospatial.org/>

⁶ <http://simplegeo.com/>

⁷ <http://opengeo.org/>

⁸ <http://www.desinventar.net/>

⁹ <http://en.wikipedia.org/wiki/RISE-PAK>

¹⁰ http://wiki.crisiscommons.org/wiki/Main_Page

¹¹ <http://haiticrisis.appspot.com/developers>

¹² <http://globalvoicesonline.org/specialcoverage/haiti-earthquake-2010/>

¹³ <http://www.haitivoices.com/>

Populated Places (Geographic)	<i>ibid</i>	OpenStreetMap, GeoCommons ¹⁴ , FrontlineSMS ¹⁵ , Grassroots mapping ¹⁶ , Ushahidi instance, Google ¹⁷
Transportation Network (Geographic)	<i>ibid</i>	OpenStreetMap, Sahana instance, CDAC/Internews based community feedback ¹⁸

It is also possible to look at the post-crisis population of the hydrology and hypsography CODs with data from Google and other providers of information, not strictly falling into the crismapping community, but increasingly tailoring their output to meet key demands of actors and platforms outside the UN system (e.g. Google Resource Finder for Pakistan¹⁹).

Key challenges

Key challenges to the establishment a technical API include the harmonisation of data gathering to UN defined standards, the process and yardsticks through which crowdsourced information is vetted and verified, the points of entry into the CODs which have to be mandated by the UN and IASC and the points of contact amongst the crismapping community in charge of liaising with the UN.

The 'API' also needs to be more than just a technical bridge. The constituent members and cultures of the crismapping community, the UN system and Government are fundamentally different, requiring those within the UN to reach out to the crismapping community as partners in progress and reciprocally, those in the crismapping community to be more patient than they generally are with bureaucracy, to acknowledge more fully the indispensable role of the UN in humanitarian response and relief work and to realise that without verifiable information, the mere population of maps and platforms does not meaningfully help concerted aid and relief efforts.

Once a working relationship between key persons and platforms in both communities and a suitable process of verification or taxonomy for crowdsourced information is established, crismapping can also help in prevention, risk reduction and long-term recovery processes of the UN.

Champions of greater and importantly, more meaningful collaboration and learning – be they individual or organisational - need to be identified and empowered in the UN system and crismapping community. This will be difficult to sustain without institutional support, which in turn will be anchored to perceptions of reciprocal gain on account of this collaboration and minimising risk. On this last point, the management of expectations will be important, since existing institutional investments into IT and Information Management (IM)

¹⁴ <http://www.geocommons.com/>

¹⁵ <http://www.frontlinesms.com/>

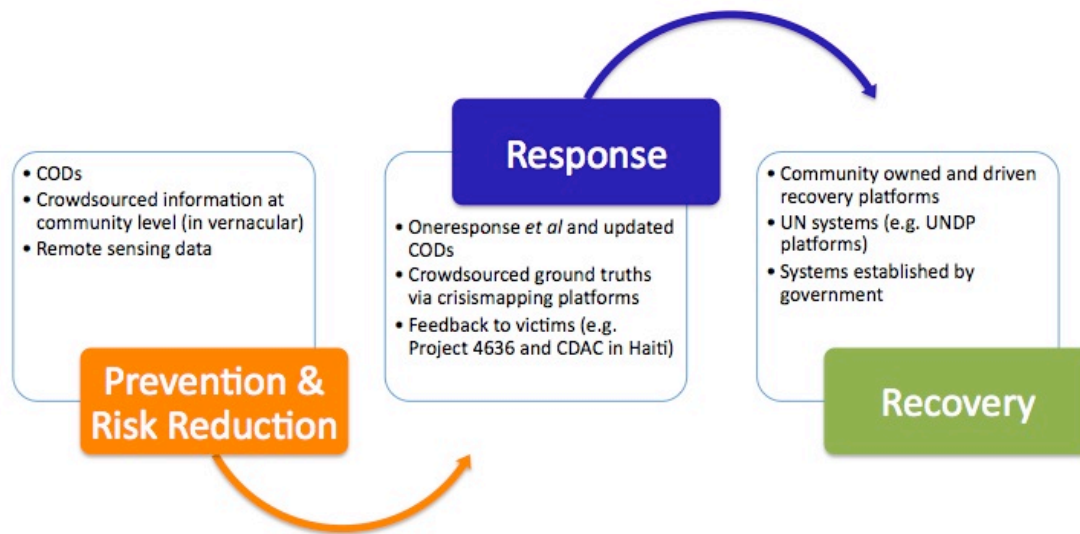
¹⁶ <http://grassrootsmapping.org/>

¹⁷ <http://www.google.com/relief/haitiearthquake/imagery.html>

¹⁸ <http://crisescomm.ning.com/>

¹⁹ <http://pakistan.resource-finder.appspot.com/?lang=en>

training and platforms, plus the very identity of the UN system may be perceived to be at risk through the introduction of or interface with new crismapping systems.



Under the UN CiM strategy, a key UN driver of this information exchange needs to be identified, which by design can engage more easily and robustly with the crismapping community and its key actors, and by virtue of its location within the UN system, also act as a catalyst to appropriately populate key UN platforms, including the CODs, with crowdsourced information.

As noted in the diagram above, if existing IASC CODs are better populated from within the UN clusters as well as from sources outside the system in a manner that does not risk the UN's data integrity and standards, it stands to benefit not just the UN but also the crismapping community as well as Government's who can use this information and platforms for disaster risk reduction and prevention, better crisis response and more robust, sustainable, long-term recovery.

SH/DS, October 2010