

Standardization of Geographic Names in Humanitarian Information Management (Towards a Humanitarian Spatial Data Infrastructure)

Suha Ulgen & Craig Williams



Mr. chairman, distinguished delegates and observers, Good morning.

My name is Suha Ulgen. I am the Technical Coordinator for the Field Information Services Unit of the UN's Humanitarian Coordination Office, OCHA. I am also here representing the UN Geographic Information Working Group (UNGIWG) Secretariat.

Craig Williams is OCHA's Regional Information Management Officers in Bangkok. The bulk of what I will share with you this morning is based on Craig's work. I would be remiss if I did not mention his name here.



Part of OCHA's mandate is to promote disaster preparedness and help coordinate the humanitarian response to natural disasters and conflict.

Today I would like to start by discussing a particular geographic name standardization practice the humanitarian community engages in to improve field operations. This is a

practice which involves the establishment and use of “place codes” or “p-codes” for short.



The early days of a humanitarian crisis present responders with an awkward problem.

Just when it's most critical to have accurate information on the needs of affected people, the availability of such information is at its lowest.

In the blink of an eye, conflict and natural disasters can invalidate much of what we know about a region and its communities.

Conflict and natural disasters often result in casualties, displaced communities and destroyed infrastructure, simultaneously creating both a need for accurate information and obstacles to its collection.

The first days of a response can shape the type and scale of assistance for months to come so making the right decisions is critical, yet supporting information often takes weeks or even months to compile.

Two of the initial challenges facing decision makers are how to quickly grasp the overall extent of the disaster in order to define the type and scale of assistance, but also to assess the needs of each individual community, because relief efforts must ultimately be coordinated at that level.

The challenge for information managers is how to provide relevant information: to do so rapidly, to assess communities that may not themselves immediately know the

scope of the impact, to gather this information across the entire affected area, to extract useful knowledge, and to share it quickly with the people who need it.

When we cannot obtain accurate information on the post-disaster situation, when the right assistance does not reach the neediest people in the shortest time, lives can be lost and resources wasted.

In short, information is a very valuable commodity, indeed the very first commodity that must be delivered. I am pleased to be at a meeting of people who probably share this view.



Thanks to advances in technology, it's now possible to get an overview of many disasters almost immediately after they have taken place, and often a warning before they do.

Humanitarian workers can get SMS alerts of earthquakes and floods through GDACS.

Tropical storms in the Pacific can be tracked through the Pacific Disaster Centre.

Erupting volcanoes can be monitored through HEWSweb.

Evolving conflicts can be tracked through Reliefweb.

Our ability to learn in almost real-time about humanitarian disasters is unprecedented, allowing resources to be mobilised and the attention of the world focused on the evolving emergency.



In the hours that follow a natural disaster, satellite imagery is often made available through bodies such as the International Space Charter and UNOSAT.

After the 2004 tsunami, imagery provided a rapid and haunting overview of the destruction.

However as humanitarian agencies deploy to a disaster area there is increasing need for greater levels of detail and understanding.

A satellite image may be enough to estimate the area affected. With analysis it is even possible to estimate damage to individual buildings.

However the challenge is how to transform these data into information and knowledge which can facilitate decision making.

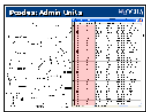
How do we go from understanding the geographic extent, to knowing the names, location and needs of every community affected?

And as supplies and help arrive from numerous organisations and people, how do we track what goes where, and what needs remain?

Ultimately a relief operation's success may depend on how rapidly this information is obtained.

To deliver this information quickly and systematically, from a quick general overview to individual community analysis, requires that an information infrastructure be in place before the disaster.

Perhaps the most important datasets for humanitarian information managers are those that create an environment in which hundreds of different actors can contribute to, and benefit from, an information base built on common standards.



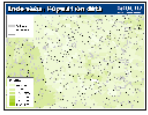
Among these foundation datasets, the most well known in humanitarian circles are called 'P-codes', "place codes."

P-codes refer to geo-coded gazetteers of facilities, settlements and admin units. They provide a comprehensive list of locations as well as providing the list of geographic units for data aggregation.

P-codes are essential because they define the universe in which relief agencies operate, providing a common language for multiple surveys of damage, and recording the location of relief activities.

If we are to make best use of pre-disaster information we must have a link between historical and new data.

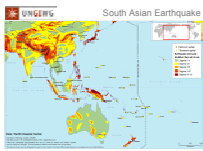
Where they exist, p-codes can be the glue that binds the collective effort and fundamentally improves the quality of information. They are, quite literally, a life-saving resource.



Census data and data on social infrastructure such as health centres, schools, water points, government buildings, bridges and helipads, all linked to p-codes *available at the time of the disaster*, can be used to prioritise needs and plan the delivery of relief supplies, and monitor progress.

When these data do not exist, or they exist but are incomplete, or they are complete but not made available, we can, and often do, generate p-codes and other essential datasets. However a disaster area is the worst possible environment in which to do so.

Relief agencies face pressure to address urgent humanitarian needs. In such an environment, where every need is paramount, spending days or weeks to build datasets and p-codes may seem to some a life-threatening misuse of resources.

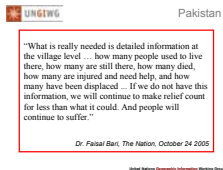


On October 8th 2005, a 7.6 magnitude earthquake struck northern **Pakistan**, killing over 70,000 people.

The UN deployed a Humanitarian Information Centre which immediately began establishing key baseline information on the impact of the disaster.

Some of the early questions were: which villages are affected; what's their population; how many people were killed, injured and made homeless; what's the status of infrastructure? What are the priority needs for materials and services?

Where are the most at-risk communities?



Although the need for information in Pakistan was immediately obvious, the method for collecting it was not.

As with many countries, Pakistan has a complex system for dividing the country administratively.

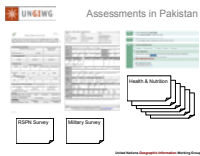
Villages can be defined one way for revenue collection, another for the census and a third for political administration.

The army, which played a central role in the delivery of humanitarian aid, divided the country into grids and sectors and reported their work accordingly.

Complicating matters further were differing administrative structures in the two most affected provinces.

For none of these structures was a comprehensive list of p-codes available.

Yet without such a list, it was not possible to organise a systematic assessment of impact and needs, or to establish a unified system for coordinating assistance.



In the absence of a unified list of settlements, and with no corresponding baseline data on population and social infrastructure, multiple assessments were undertaken to fill the gap.

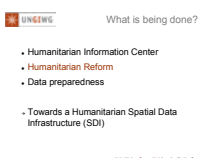
Although the survey results were often shared, it was not easy or sometimes possible to integrate them.

Variations in the spelling of place names and the use of various administrative groupings lead to multiple surveys undertaken in some villages while others went undocumented.

Five months after the earthquake it was still not possible to get an overall picture of the impact at community level, or indeed to be sure that every community had been visited.

There is no doubt that these difficulties had a direct and negative effect on defining needs, identifying priorities, tracking assistance and monitoring impact.

This is one example, but unfortunately similar problems have been the norm and not the exception.

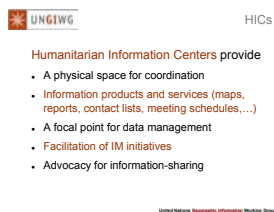


So what's being done?

I've argued the case that critical data cannot wait until the disaster itself, it must be prepared beforehand.

Data must be pre-positioned, mechanisms for information management must be put in place, and plans for the collection, use, exchange and management of information defined.

We in the emergency relief community must recognise the inherent value of information and, as with food, shelter and medicine, be ready to deliver it immediately when the need arises.



In major relief operations, information management is increasingly being coordinated by Humanitarian Information Centres, or ‘HICs’.

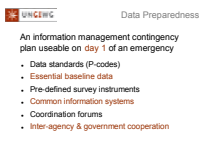
The functions of a HIC vary among operations, however the most common services they provide include information products such as maps, reports, contact lists, and meeting schedules; data management including establishing p-codes and baseline datasets; and common information initiatives such as rapid assessments and ‘who does what where’ surveys.



A process currently underway called the Humanitarian Reform Agenda aims to improve how international relief efforts are managed whereby certain agencies have assumed responsibility for aspects of relief operations called ‘clusters’:

Recently the Inter-Agency Standing Committee – a high-level grouping of major UN agencies and international organisations – endorsed a proposal to formalise information management responsibility into the terms of reference of cluster lead agencies.

This will help address existing institutional weaknesses, requiring cluster lead agencies to deploy staff with expertise in information management to manage data within the cluster itself, and also to coordinate with the HIC.



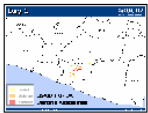
A third initiative is called Data Preparedness, which calls for essential data standards, datasets, survey instruments, data sharing protocols, information systems and coordination forums to be defined and established as part of contingency planning and disaster preparation.

The objective is that on day one of an emergency, humanitarian responders can take immediate advantage of existing data services, initiate common assessments and freely share information.

A **recent** relief operation can demonstrate how some of these initiatives work in practice.



On May 27th 2006, a 6.3 magnitude earthquake struck the island of Java in Indonesia.



An initial assessment using satellite imagery suggested a fairly limited area of impact, but although no HIC was deployed, OCHA sent two information managers to assist the coordination structure put in place by the UN.

As in Pakistan, the same questions were being asked in the immediate aftermath of the disaster. How many villages; how many people; how many houses; what are the needs?

As in Pakistan, the government lead the response, but in Indonesia the government was also able to contribute essential data standards and datasets that played a critical role in the first days and weeks after the earthquake. The Southeast Asia tsunami has taught the Indonesian government the importance of data preparedness.



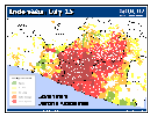
Java had a well developed GIS reflecting the administrative structure of the affected provinces as well as a coded gazetteer of every settlement.

The gazetteer was linked to baseline data on housing and population.



Using this foundation, the government was able to organise a comprehensive village-level survey in which standardised data on deaths, injuries and infrastructure damage were collected for over 1,200 communities in more than a dozen districts.

This survey was initiated and completed within 15 days of the earthquake.



The results showed a significant difference between the initial analysis and the true extent of the damage.



These data were made available to cluster lead agencies.

The shelter cluster, headed by the International Federation of the Red Cross, had its own information management capacity and was able to use the survey data to calculate, village-by-village, quantities of shelter materials needed.

The shelter cluster assigned sub-districts to individual organisations who in turn took on responsibility for prioritising needs, ensuring coverage and reporting on progress.

In short, less than three weeks after the earthquake, there was sufficient information to plan – community by community – a systematic and comprehensive response.

As an information manager, a key advantage in Indonesia was the availability of ‘p-code’ data standards.

The existence of the p-codes and their availability to the UN was possible because of data preparedness by the government, and transparency in sharing these important data.

Without all of these factors, we could not have made use of historical data on population, housing and social infrastructure.

We could not have integrated survey data and released a community-by-community assessment of damage.

Without these, we could not have done the analysis that was used to direct and monitor shelter assistance.

- Promote cooperation
- Enable common surveys
- Facilitate information exchange
- Provide accountability
- Inform decision makers
- Systematise analysis of needs and gaps
- Attract donors
- Strengthen coordination
- Create institutional knowledge

The experiences in Pakistan and Indonesia serve as examples of how information can improve the quality and timeliness of relief assistance.

They show that information can promote cooperation and coordination, enable shared information gathering, allow data exchange among agencies, provide accountability through indicators, assist policy-making, systematise monitoring, attract donor support, strengthen cluster leadership and create institutional knowledge.

To create an environment in which this is possible however requires preparation.

Just as a contingency plan may call for the pre-positioning of food stocks, shelter items and medical supplies, similar plans must be made for data standards, survey instruments and baseline data.

In information management, as in many fields, an ounce of preparedness is worth a pound of response.

- Development and availability of p-codes and essential baseline data
- Data Preparedness integrated into disaster planning
- Cooperation between information managers and relief workers in disasters

What are some areas where I think many of us in this room can cooperate?

Firstly, I hope I have conveyed the value of p-codes and baseline datasets in coordinating a relief operation.

Although consistent global datasets exist, maintaining up-to-date data at the community-level can only be reliably done by national bodies.

I hope we will see growing cooperation between the custodians of these essential data and the humanitarian and development communities that rely on them in a disaster.

Secondly, data preparedness – and by that I mean planning for the information management component of a disaster response – needs to be better integrated into the entire disaster management cycle.

It is important that technicians work closely with decision makers and operational planners, to raise awareness not only of what technology can offer, but what resources, commitment and political will it requires.

Finally, I hope we will be able to do a better job of integrating information management and technology into disaster preparedness and response, and increasingly move towards the use of information management in disaster prevention and risk reduction.

To promote more effective and efficient use of spatial data & information for UN business purposes, supporting the overall Mission of the UN and achievement of UN Millennium Development Goals (MDGs)

United Nations Geographic Information Working Group

Responding to the need by many UN agencies to mainstream effective geospatial information management, in 2006 the UN Geographic Information Working Group adopted the UN Spatial Data Infrastructure initiative.

UNSDI seeks to promote more effective and efficient use of spatial data and information for UN business purposes, supporting the overall Mission of the UN and the achievement of UN Millennium Development Goals.

National Statistical Offices and National Mapping Agencies are encouraged to develop their own National Spatial Data Infrastructures (NSDI) to interoperate with UNSDI to realize long-term, multi-faceted benefits not only in disaster management and humanitarian relief but also in sectors such as development, environment, peace, security and many others.

United Nations Geographic Information Working Group

In 2007 OCHA and the UN High Commissioner for Refugees (UNHCR) have taken on the responsibility to lead UNGIWG for 2 years.

Consequently, at least for the next couple of years UNSDI implementations are likely to have a pronounced humanitarian flavor.

National Statistical Offices and National Mapping Agencies are encouraged to develop their own National Spatial Data Infrastructures (NSDI) to interoperate with UNSDI to realize long-term, multi-faceted benefits not only in disaster management and humanitarian relief but also in sectors such as development, environment, peace, security and many others.

United Nations Geographic Information Working Group

To those of you who already work in the areas I have described, I offer my thanks for your continuing efforts.

To those who have not yet engaged with OCHA or perhaps the emergency relief community, or those who have not begun their National SDI projects, I hope this presentation provides some food for thought and that we can also find common ground on which to cooperate.



Thank you!

Suha Oigen
oigen@lingwig.org
LINGWIG Secretariat
www.lingwig.org

Thank you.