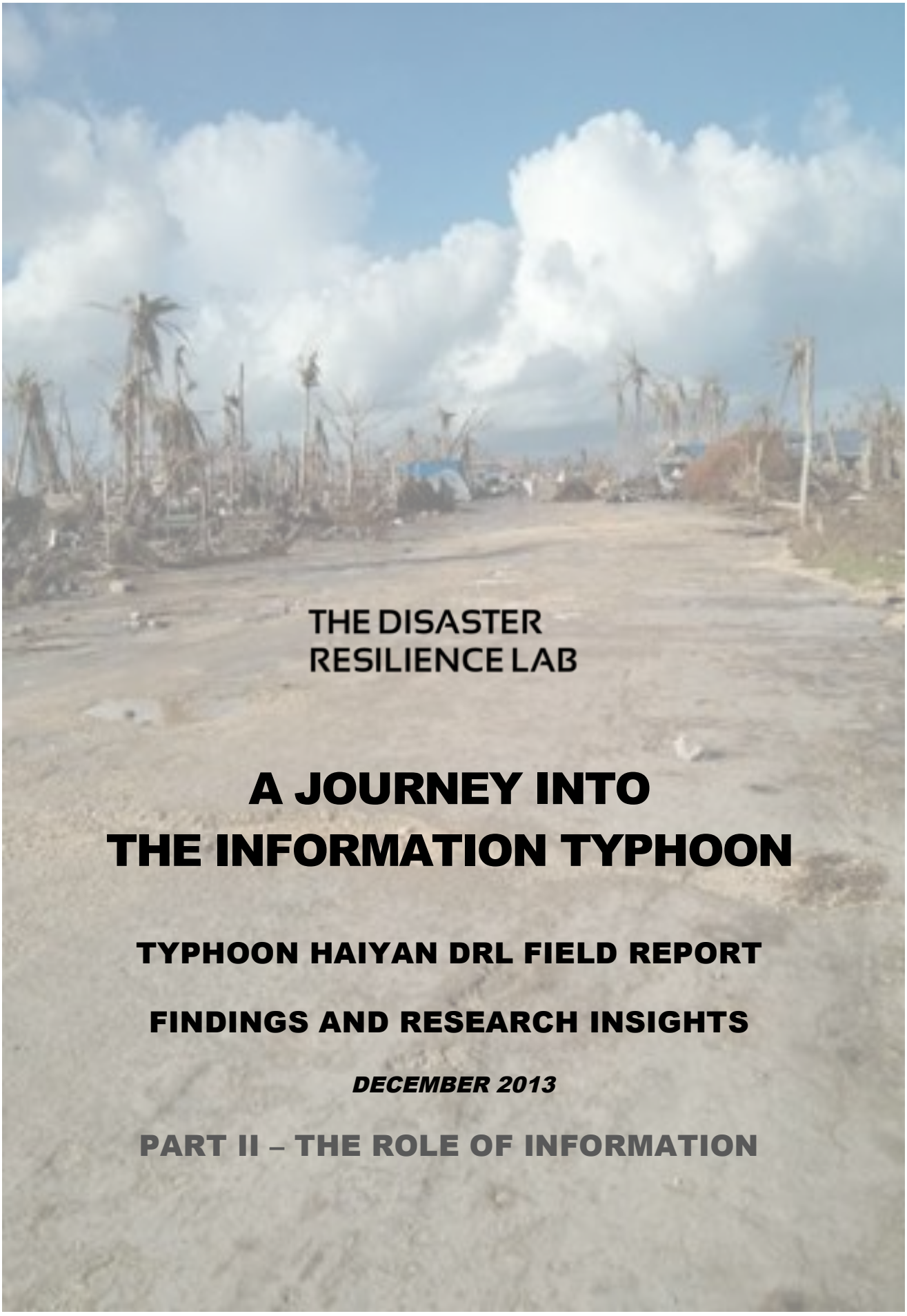

THE DISASTER
RESILIENCE LAB

A JOURNEY INTO THE INFORMATION TYPHOON

TYPHOON HAIYAN DRL FIELD REPORT

FINDINGS AND RESEARCH INSIGHTS

DECEMBER 2013

PART II – THE ROLE OF INFORMATION

The Disaster Resilience Lab Team

Lead: Dr. Bartel Van de Walle, Tilburg University, The Netherlands

Bert Brugghemans, Commander, Fire Services Antwerp, Belgium

Dr. Tina Comes, University of Agder, Norway

Dr. Jennifer Chan, Northwestern University, USA

Kenny Meesters, Tilburg University, The Netherlands

Dr. Marc van den Homberg, Cordaid, The Netherlands

Part II edited by

Dr. Bartel Van de Walle, Tilburg University, The Netherlands

Dr. Tina Comes, University of Agder, Norway

Contact

contact@disasterlab.org

IMPRESSIONS AND INSIGHTS FROM THE FIELD

The DRL field team embarked for the Philippines on December 11, 2013, a bit more than a month after Typhoon Haiyan had made its landfall. During our visit, we conducted 39 interviews, we participated in meetings and conversations, we conducted observations in coordination and meeting centres at government and NGO offices, airports, IHP camps, and we visited a local radio station. This fieldwork was complemented by document reviews and literature analyses that were carried out both during the preparations as well as after our field research. In the following parts, we present our most significant findings.

PART II:

THE ROLE OF INFORMATION

By many interviewees we were told, the role of information has never been so prominent as in the response to Haiyan. In this part of the report, we will try to better understand reasons for this claim – and explore consequences of the ever-growing amount of information.

Chapter 1 will advocate a new role for Information Management (IM), and the trade-offs that need to be made between automation and standardisation vs. a flexible and adaptable approach that addresses specific information needs. Chapter 2 reflects on Information Sharing and Coordination of the different actors, and addresses the challenges of aligning actions and communication of the diverse humanitarian actors, governmental organizations, and the affected organizations.

The needs of affected communities can only be addressed if they are identified, assessed, translated into concrete requests, and communicated to those who can best provide aid. Therefore, the last chapter of this part is dedicated to needs assessment, and aims at giving an overview about the diverse perspectives in this field.

FIGURE 1: INFORMATION MANAGEMENT OFFICE IN GUIUAN

1. INFORMATION MANAGEMENT

> *"Information is aid* […] *It is a facilitator to make aid happen in a more organized and faster way. In addition: information is a right. People have the right to know what happened. Why is that specific aid coming? Why them, why not others?"*
>
> Interview NGO staff member, Guiuan

Information management (IM) is increasingly seen as a key activity in humanitarian response, and as an enabler of more effective and efficient operations. In particular in the response to Typhoon Haiyan, IM was ever-present with a considerable deployment of information management officers (IMOs) who worked to collect data and convert it into information products.

One of the most important challenges for IMOs is to create products that are **useful in dynamic and uncertain contexts within a very short time.** Under conditions of severe time pressure, it makes sense to (re-)use standardised products and formats that have been developed for other disasters. Common Operational Datasets (CODs), including population data, geographic data, structural data (i.e. key important infrastructures such as roads or ports), and so-called "3W" or "4W" maps showing who does what where (and when) are well known examples of standardized products that are frequently used by OCHA.

The advantage of standardisation it is known beforehand which information will be needed as input, and how it needs to be formatted or visualised. Moreover, users are assumed to be familiar with common categories of products. Overall, it is widely assumend that standardisation, if possible even automation, result in more efficient IM processes. Referring to a set of 'standard' products that can be updated on a regular basis and, when shared openly, can create a transparent information flow, the very process of IM should become more reliable. Indeed, the aim of OCHA's IM was in many cases related to setting up and maintaining such a regular and reliable IM cycle to facilitate communication with the clusters, and to enable better planning of information-related activities and operational response activities.

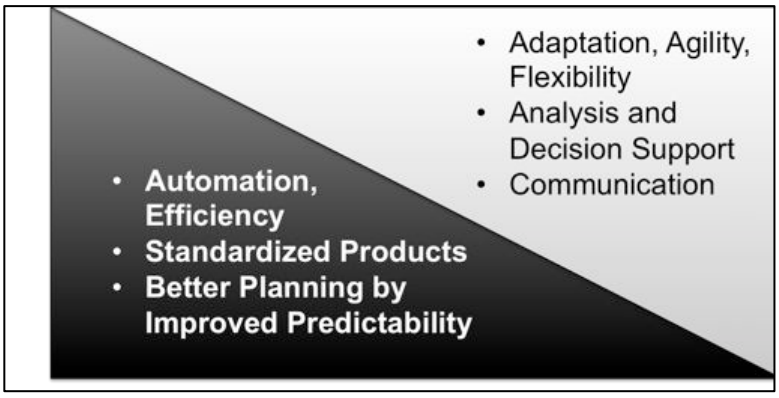

FIGURE 11: INFORMATION MANAGEMENT TRADE-OFFS

While standardization provides a structure, it also comes at a cost as it reduces flexibility, which may be a necessary factor in the acute phases of humanitarian information management. A typical behaviour in cases where information is missing or can't be formatted into the standardized format is that new information collection efforts are initiated to fill this 'gap'. For example, we have observed that several organizations repeated (and duplicated) assessment efforts to fit standardized formats despite the fact that this information may have already be (partially) available at a local level. But

since it was owned by other authorities or organizations, or available in unfamiliar formats and thus harder to understand or interpret, it was not used.

Not surprisingly, we observed that IMOs struggled to keep pace with the information requests stemming from a plethora of different policy- and decision-makers to satisfy aid organizations, donors, governments, and the military, from international to local levels. The multitude of actors, the divergence of needs, the variety of information sources, the fluctuating temporal and geographical scales, bandwidth constraints and a virtually unlimited variety of information that is openly shared with the whole world, create a frantic pattern of constant requests, surveys, questionnaires, reports and maps pushed from headquarters to the field and back.

The duplication of information collection efforts and the resulting redundancy of information products were clearly adding to the complexity of the humanitarian response. As a consequence, one UN Disaster Assessment and Coordination (UNDAC) team member who was deployed to one of the worst hit areas expressed the confusion and irritation among responders bluntly and succinctly:

"This is the Information Disaster."

What can be changed? The following are our suggestions to the various ways forward.

- The role of information management needs to shift: instead of collecting and producing information products, **processing, analysing and filtering and communicating** should become core functions. Information management officers need to be trained for this new role and perspective to target decision-makers' needs and answer specific problems within and across clusters and organizations.
- I**nformation management must acknowledge that operational decisions need to be made in near real-time, based on uncertain and lacking information about the impact of the disaster**. Instead of seeking **optimality** by collecting more and more information, IMOs should strive for **satisficing decision makers** by collecting decision-relevant information until an agreed upon "*good enough for action*" threshold is met. A decision-centric approach should prevent that essential goals are not reached because resources are wasted on collecting ever more information. A distinction between the operational and strategic function of information is core to tailor products for the given purpose – and to create better information for either.

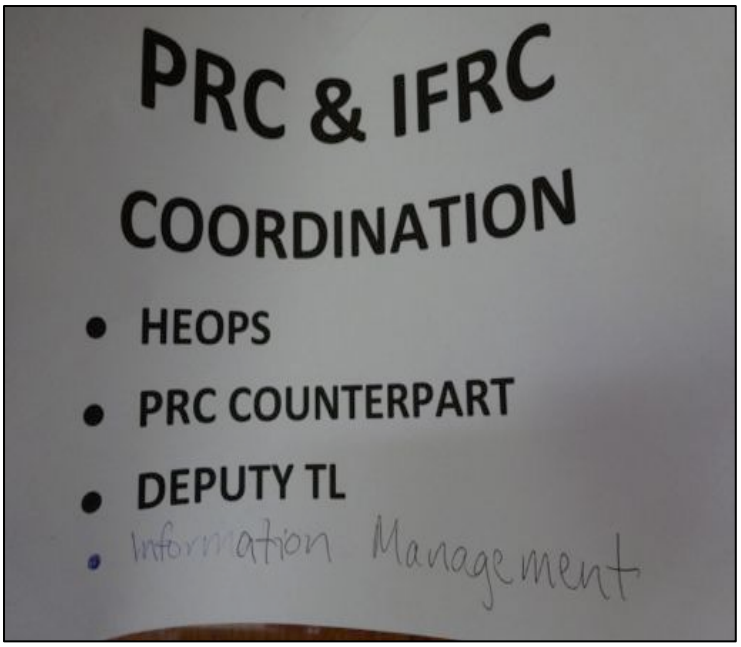

FIGURE 2: IM IS A CORE FUNCTION?

2. INFORMATION SHARING AND COORDINATION

Effective information sharing and coordination aim at empowering the responding organizations and affected communities to respond to and recover from the impact of the disaster in a well-orchestrated manner.

Sharing information is a prerequisite for coordination, since it enables decision-makers across organizations or hierarchical levels to access information without collecting it, ideally resulting in more efficient operations. What information is needed, by whom, and when is, however, remains hard to predict given the diversity of actors. Information flows and coordination mechanisms hence should support the plethora of decisions that need to be made, by balancing requests that can be expected (standardised flows) with sufficient flexibility to enable answering new questions as they arise.

Despite the potential of new technologies, establishing connections to the areas most severely hit remained an issue in the aftermath of Haiyan. Particularly in the early phases, sharing information relied upon feasible communication lines. Our site observations and interviews support the known fact that early information sharing greatly relies on **direct bilateral exchange**, either in person or via radios and satellite phones. But even when connectivity became better, people reported to rely on their social networks rather than on products provided online.

Low-technology or no-technology tools such as contact information lists, paper surveys, questionnaires, printed maps and whiteboards with updated information were frequently seen in both higher resources settings (e.g., at Headquarters in Manila) and more austere settings (e.g., in Guiuan). Collaborative technology-based communication platforms such as Skype chat rooms and Dropbox shared folders were enabling staff to share information among larger user groups.

Information and access to information remain a source of power and influence:

> '*We know: information becomes very important; social factors play a role. Who do you know? And so on. So information gets biased.'*
>
> *Interview NGO staff member, Guiuan*

Truly sharing information needs to go beyond making data available publicly. A better understanding is needed of the constraints and requirements of those who depend on the information. The population in Guiuan, for instance, includes many fishermen who come from different regions; not all of them have access to the traditionally strong social networks in the Philippines. The impressive Internews project Radyo Bakdaw aimed at bypassing those constraints by engaging in a conversation with the local population and providing information that could be accessed by using a simple hand-held radio.

From information sharing to coordination. The plethora of organizational actors, their internal procedures and the UN-based coordination mechanisms, does not only affect operations, but is also impacts strategic planning and advocacy decisions. During our field research, we were able to reflect on the various coordination mechanisms at different inter- and intra-organizational levels. Experiencing the immediate and surrounding environment, with which groups shared information, communicated and coordinated between headquarters and the field level, has provided us with insights into the potential facilitators and barriers to information sharing.

INTER CLUSTER COORDINATION MEETING, MANILA

INTER CLUSTER COORDINATION, GUIUAN

FIGURE 3: TWO INTERCLUSTER COORDINATION MEETINGS

Within the **clusters,** we observed that coordination was challenging as the meetings had a very '*open'* character; many participants were able to voice their views. Usually, many organizations are present at these meetings. For example, no less than 56 different organizations were participating in the shelter cluster meeting that we attended in Manila on December 17, approximately 5 weeks after the disaster. In addition to the large number of participants, cross-sectorial issues create additional

challenges. For example, schools were discussed in both the shelter (as temporarily housing) and the education cluster. Finally, the high staff turnover in both coordinating (OCHA) staff and meeting participants causes repetitions, and makes continued individual or organizational learning difficult.

FIGURE 4 OPERATIONAL COORDINATION - OSOCC IN TACLOBAN

Connecting local to global. The Philippines is a country prone to many potential natural disasters, including earthquakes, storms, and flooding. Preparedness levels in the country are relatively high, for instance the country's investment in disaster risk reduction programs is ten times higher than the contribution of the international community (Kellett et al. 2014). In case of the response to Typhoon Haiyan, the established national structures of disaster risk reduction and response needed to be aligned with the international coordination structures. According to one of our interviewees, an obstacle to coordination is a lack of adequate understanding of the local context by members of the international organizations:

> *People parachuted into the UN thru the political system have no understanding of the organization on the ground.*
>
> *UN staff member*

The Philippines Disaster Risk Reduction and Management Act of 2010 shaped the national response. The DRRM Act assigns the role of coordination and oversight to the National Disaster Risk Reduction and Management Council (NDRRMC). This council comprises governmental bodies at different levels, CSOs, and the private sector. Another relevant player was DRRNet, a conglomerate of 300 NGOs, CSOs, community groups and people's organizations. The Department of Social Welfare and Development (DSWD), as a part of National Disaster Risk Reduction and Management Council (NDRRMC), acted as the main liaison to the Philippines government. Both national and international authorities appear to be highly aware of needs and baseline population based information. Many interviewees described these strengths, and in particular one interviewee said it was "*of extraordinary quality as compared to other disasters*".

FIGURE 20: VIEW OVER TACLOBAN

The province of Cebu implemented the UN cluster approach for their disaster risk reduction program already in 2008, but made several adaptations in the following years (Pellini et al. 2013). In the city of Cebu, the response taskforce *Paglig-on* ("fortify") that was operationalized after the typhoon followed this "provincial" cluster structure. Interestingly, we observed that the OCHA office in Cebu adapted to this by taking on a more advisory role, by clarifying leadership roles in clusters and by co-locating in government buildings allowing for easier interaction and coordination.

NGOs often follow their own internal coordination structures. For example, the Caritas Filipino Foundation CBCP-NASSA received support from some Caritas International member organizations such as Cordaid or Caritas Germany. These member organizations held their own coordination meetings amongst themselves. Additionally they leveraged the very well organized Catholic church network to reach out to local communities. For example, they connected to dioceses and parishes to conduct surveys among the affected population. In addition, they also worked via the UN cluster system by seconding a representative from each supporting Caritas organization to attend cluster meetings, but this obviously implied an additional coordination effort.

FIGURE 5: LOCAL INFORMATION SHARING MECHANISMS - A BARANGAY IN GUIUAN

Coordination by pursuing a common goal? The **aims** and **time scales** of all the different actors vary to a great extent. Some organizations active in the response have a development-focused presence in the region, and were able to make use of their long-standing relations with local organizations or authorities. Other actors such as the military, UNDAC, or the Emergency Telecom Communications, however, act on a much shorter time scale. As one of our interviewees stated:

> *UNDAC leaves after 3 weeks; three is a limited transfer to the people who stay longer. They know they leave within 3 weeks, so very different planning horizon.*
>
> UNDAC staff member

Effective coordination requires alignment of the aims between actors, across the different time horizons of their respective activities. Owing to the high staff turnover, the project-driven organizational planning, and the high dependence on donors, aims are, however, volatile and can shift during the response phase. A specific player in this context is the military.

Civil-military coordination played a notable role in the post Haiyan context. As for NGOs or other organizations, there is not *a single* military actor, but different military deployments from different countries, each of which pursues its own aims. What they have in common is that they conduct relatively isolated operations with a clear focus and target, using clear command and control structures within their organization. Impressions from interviews we conducted seem to suggest that engaging with the local populations or the humanitarian actors is less of a priority.

> *There was a huge military effort, but very little info exchange, mostly Mil to Mil support. We had problems to find out what was going on where.*
>
> UNDAC staff member

The intra-organizational coordination was found to be particularly difficult for all organizations between the people in **the field and headquarters**, due to geographical distance, the experiential difference in context, bandwidth constraints at the field level particularly in the early phases, and different information needs. HQ are responsible and in many ways dependent upon field staff for their goals (advocacy, funding PR, strategy), yet field staff often have competing obligations and responsibilities.

FIGURE 6: FULL TRANSPARENCY? LOW TECH ENVIRONMENTS; PICTURE BY K. MEESTERS

These gaps also played out in the information management and information flows. For example, one of our interviewees indicated that some NGOs preferred to put their scarce time in managing their own more granular data rather than to provide data to the headquarters in Manila. Conversely, data from local actors in the field that did not meet the imposed data standards often could not easily be included in the reporting mechanisms used by UN OCHA.

Our findings further show a **decreasing complexity and rigidity of coordination structures from the headquarters to the more remote field sites**. We observed that headquarter level coordination was heavy, political and outward-oriented, a perspective shared by several of our interviewees. In contrast, our observations and interviews supported the view that coordination in Tacloban and Guiuan was more light-weight, no non-sense and inward focused. In line with these findings, we also observed that information management at the headquarters seemed to be targeted in large part towards international advocacy and policy shaping of the international humanitarian community, while information management in the field focused on very concrete response actions.

While effective information sharing and coordination should ensure that all actors are working with the same or complementary information and baseline data and that information must be as **relevant, accurate** and **timely** as possible, our findings and the complexity of this response have shown that challenges remain and the need for a solution is as urgent as ever before. How to best enable and facilitate information sharing to address the specific needs of decision-makers remains unclear, yet it clearly is not (merely) a technological issue. Often, clear communication lines are lacking; the purpose of data collections or requests remains unclear; operational decision-making is not prioritised; organizational or individual aims remain hidden. All of these issues hamper efficient coordination and the alignment of information and operation.

3. NEEDS ASSESSMENTS

The needs of affected communities can only be addressed if they are identified, assessed, translated into concrete requests, and communicated to those who can best provide aid. Understanding the needs of affected communities as, or even before, they emerge is a prerequisite for a shared understanding of the situation, the identification of priorities, and coordination of activities between all involved actors and organizations.

Understanding needs typically starts from assessing the damages compared to the situation before the disaster. From these immediate damages, links can be drawn to the subsequent direct needs of communities for evacuation, shelter, food, water or medical care, Additional needs and demands arise from an information and coordination perspective as well as in the transition from immediate response to recovery. All these assessments are a means to keep track of the on-going response, and adapt it where it does not reflect what is required. While we have explored the need for assessments from a decision-makers' perspective, our fieldwork did neither directly address nor explore in depth the nuances of field assessments and data collection, which can come in all shapes and sizes such as community, NGO, government or UN assessments.

3.1 Early Warning and Predictions

Haiyan started as tropical depression, which was detected by the Japanese Meteorological Agency (JMA) on November 3, 2013. Soon after, the JMA re-classified the depression as storm, and on Novem-

ber 5 as Typhoon Haiyan. Early warning systems in South Eastern Asia, predicting that typhoon Haiyan would severely harm the provinces of Leyte and Eastern Samar, lead to the issuing of early warnings by PAGASA (Philippines Atmospheric Geophysical and Astronomical Services Administration) and JTWC (Joint Typhoon Warning Centre) two days before Haiyan's landfall.

Although the impact could not be precisely predicted, massive damage was expected. In the transition phase from early warning to response, the Department of Social Welfare and Development (DSWD) engaged with local municipalities to evacuate families in particularly exposed areas, identified adequate evacuation centres or reinforced the roofs of buildings (DSWD, 2013)[1]. The military was activated, volunteers were deployed; transportation systems and trucks pre-positioned and food packages and medical aid kits were packed (NDRRMC Sit Rep No. 4)[2]. The ASEAN states sent an AHA team to Manila to prepare for the response, and several NGOs that were already active in the country such as ICRC, or small and agile organizations responding to a disaster such as Humedica, prepared to respond before the Typhoon made landfall.

Dispatching and deploying decisions need to be made very quickly, typically based on forecasts and preliminary assessments as well as professional experience and context-based knowledge. Decisions in this phase are therefore typically are necessarily based on uncertain, incomplete, conflicting and biased information that cannot be verified and shared until after the disaster.

The Digital Humanitarian Network (DHN) was activated by UN-OCHA on November 7. Members of the DHN network and the larger V&TC community mobilized. MapAction, Humanitarian Open Street Map, GIS Corps, ESRI Disaster response Program, Translators and Statistics without Borders, Info4Disaster and many others activated their networks, working remotely or sending volunteers into the disaster struck area.

FIGURE 7: WE NEED FOOD. S.O.S. FROM TACLOBAN

[1] http://www.gov.ph/2013/11/06/dswd-preps-for-possible-impact-of-storm/
[2] http://reliefweb.int/report/philippines/ndrrmc-update-sitrep-no4-re-preparedness-measures-effects-tropical-depression

FIGURE 8: IMPACT OF HAIYAN IN TACLOBAN

3.2 Information for Assessing Humanitarian Needs

False information on needs with false information on output leads to false information leads to wrong response.

Interview UNICEF staff, Manila

The day after Haiyan had hit the Philippines, the Government welcomed the offer of international assistance, and on November 11, a National State of Calamity was declared[3]. Food, water, sanitation and hygiene, shelter, medicine, debris clearing and logistics were identified as immediate priorities. The Government also requested the international community's support in establishing logistics hubs to support the sustainable delivery of aid. The first reports and field observations suggested that the most immediate threats to human life were (in rough order of urgency): lack of safe drinking water; lack of shelter; trauma injuries; other acute medical conditions (including contagious diseases); disruption of treatment for severe acute malnutrition and for severe chronic disease; insufficient food; lack of sanitation and personal hygiene items; lack of household items and supplies (like fuel), especially for preparing food (UN OCHA Situation Report No. 6, 12 November).

[3] Proclamation No. 682, s 2013. Available online: http://www.gov.ph/2013/11/11/proclamation-no-682-s-2013/

After the Typhoon made landfall, various needs assessments emerged. While traditional assessment had been developed and processed put in place for standardized collection and processing, other communities brought forth newer forms of needs assessment using non-traditional information streams. For example, in the initial hours of the typhoon's landfall on November 8th, intermittent reports that came in via Twitter, radio, or satellite phone provided a glimpse of the impact of the storm. The dispersed and highly fragmented nature of the typhoon's impact in terms of geographical scale and information available made it difficult to assess the needs and to coordinate the response. Analysing over 3,000 geocoded expressions of need from non-traditional information streams (mainly Twitter) were processed in the first two days by the SBTF, combined with satellite images and reports from the field. The integration of these data into the standard response systems however proved a challenge:

> *It is not in regular MIRA framework. It doesn't fit any statistical models - not sure how to deal with it and incorporate it, translate to response*.
>
> Interview UN OCHA staff, Manila

While the international community was invited to provide help according to the priority needs, first attempts were described by UNICEF staff to start from a gap analysis aiming at supporting and complementing the response activities of the Philippines' government. The identification of what gaps to fill was however a challenge:

> *The UN perspective is supporting government gaps. But without knowing the gaps this is a difficult job.*
>
> Interview UNICEF staff, Manila

To track the success of the response and avoid over- or under-supply of aid, it is crucial to establish communication about the reported, assessed or perceived needs. Yet good book-keeping of the aid that is to be delivered is not sufficient:

> *We count jerry cans, nails, plastic sheets - commodities - as equating to solving problems.*
>
> Interview UNICEF staff, Manila

To understand the impact of Typhoon Haiyan more than 40 agencies conducted a Multi-cluster Initial Rapid Assessment (**MIRA**) in 9 provinces covering 92 municipalities and 283 barangays. The high granularity of the reported needs was, however, a problem for the decentralised cluster system:

> *The level of detail required was such that IMOs had difficulties to provide the data. So more fell on the OCHA team which created more pressure*
>
> Interview UNDAC staff, Manila

3.3. Early Identification of Risk Drivers

The initial disaster response is highly dynamic, and the perspective on how to best respond is subject to constant change as new information reveals the actual situation. As such, any response decision is fraught with risk: new information may show unexpected problems or hint at emerging ones. As such, we argue that the notion of **risks** needs to be re-interpreted during the response phase.

Instead of focusing on natural hazards, or aftershocks, attention and monitoring should shift to emerging social, political or technical risks that need to be detected and understood as they emerge. This includes monitoring the impact of the response, identify trends and patterns, and respond adequately. Filtering and processing information should not only focus on what can be predicted in a reliable way, but also enable the revision of response strategies whenever necessary. The process should systematically identify and reveal information that has the most significant potential implications for the response – on an individual, organizational and regional level. In the words of a UN OCHA staff member in Tacloban:

> *I only look at issues, not at numbers.*
>
> UN OCHA staff, Tacloba

A more elaborate reflection from the field and discipline on the notion of risk and risk drivers is available in a recent publication on the understanding of risk accelerators by two of the DRL team members [pdf preprint; published in LNCS].

FIGURE 9: ARRIVAL HALL TACLOBAN AIRPORT - WHAT DO YOU NEED TO KNOW?