

Informing preparedness planning: Applications of community-based vulnerability and capacity data in the Philippines

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vulnerability and capacity data in the Philippines**

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Abstract

Disasters are not natural, but rather a combination of a natural hazard and its impact on vulnerable people and resources. Therefore, when engaging in disaster risk reduction and coming to an understanding of disaster risk, existing conditions within society should be understood. As one component of disaster risk reduction, preparedness and respective planning efforts require an understanding of disaster risk based on both the vulnerabilities and capacities of community members. However, the strength of vulnerability and capacity data is within its source. Assessments to capture this data, such as the Red Cross and Red Crescent Movement's Vulnerability and Capacity Assessments (VCAs), have been widely implemented across the world, with community members leading the process. Through focusing on VCAs conducted within "barangays", the smallest community level in the Philippines, this research demonstrates how vulnerability and capacity data can be used by local government officials to inform preparedness planning. In presenting the importance of this data, success stories from barangays in the Philippines, as well as the challenges that have been encountered, this research presents ways forward to enhance the use of this data to ultimately strengthen preparedness as a component of disaster risk reduction.

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Abbreviations

BDRRMC	Barangay Disaster Risk Reduction Management Committee
BDRRMP	Barangay Disaster Risk Reduction Management Plan
BLGU	Barangay Local Government Unit
CBDP	Community-based disaster preparedness
DRR	Disaster risk reduction
DRRM	Disaster risk reduction management
FGD	Focus group discussion
IFRC	International Federation of Red Cross and Red Crescent Societies
LGU	Local Government Unit
PNS	Partner National Society
PRC	Philippine Red Cross
VCA	Vulnerability and Capacity Assessment

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1 Introduction

A disaster can be understood as “the result of a natural hazard impacting on vulnerable people” (IFRC, 2006, p. 8). This explanation begs for a recognition of disasters as not purely natural, but a combination of natural factors and additional conditions present in society (Wisner et al., 2003). Thus, in order to manage disasters and the risks they pose, an understanding of conditions such as vulnerability is necessary (Wisner et al., 2003). The need to understand disaster risk has been emphasized within the *Sendai Framework for Disaster Risk Reduction* and its greater emphasis on disaster risk reduction (DRR). As one component of DRR, preparedness has been highlighted, with the framework pushing for the need to strengthen preparedness efforts. However, it is first crucial to understand what we are preparing for. Mirroring Wisner et al.’s (2003) arguments, the Sendai Framework prioritizes the need for an understanding of disaster risk built upon all of its dimensions, including vulnerability and capacity (UNISDR, 2015). Focusing on both vulnerabilities and capacities is necessary, as communities are not only vulnerable, but also capable to undertake preparedness measures. Given so, practitioners are encouraged to strengthen how both vulnerabilities and capacities are assessed (UNISDR, 2015).

The ways in which preparedness efforts are carried out holds importance, with the Sendai Framework demonstrating a need for an all-of-society engagement in such DRR interventions (UNISDR, 2015). The framework stresses the need to be “multi-sectoral, inclusive and accessible in order to be efficient and effective”, while calling on governments to engage stakeholders, including those at risk and regularly affected by disasters (UNISDR, 2015). Thus, community-based disaster preparedness (CBDP) can be seen as a means to achieve such efforts, directly involving community members in preparedness planning. With regards to assessing vulnerabilities and capacities, there are many community-based forms of assessment that can be carried out to assist both governments and community members together in deciphering the root causes of disaster risk. One example is through Vulnerability and Capacity Assessments (VCAs), spearheaded by the International Federation of Red Cross and Red Crescent Societies (IFRC). The VCA is not only a means to investigate the root causes of vulnerability and existing capacities, but also serves to inform planning and programming for preparedness (IFRC, 2012).

This assessment has been widely adopted by Red Cross and Red Crescent National Societies, such as the Philippine Red Cross (PRC) – with communities situated in the third most at-risk country to natural hazards in the world (Bündnis Entwicklung Hilft, 2017). Through focusing on “barangays”, the smallest community level in the Philippines, where VCAs are carried out, this research draws on how Barangay Local Government Units (BLGUs) are using the findings of VCAs to inform preparedness plans and measures. The aim of this research is to explore and present the ways in which vulnerability and capacity data can be used to inform preparedness planning at the community level. This is carried out by exploring the following overarching research question: *How can data regarding the vulnerabilities and capacities of communities be used to inform preparedness planning to better prepare to respond and recover from the impacts of natural hazards?*

In an attempt to foster a deeper understanding of why this data is critical to guiding preparedness, this research focuses on presenting the perceived importance amongst practitioners and BLGU officials of using the data to inform preparedness planning; how vulnerability and capacity impacts the ability of communities to prepare; how the data is currently being used by BLGUs; the visible differences in preparedness levels of community members; identifying the challenges that BLGU officials face in using this data; and finally, providing ways forward to further develop the use of vulnerability and capacity data by local government officials to inform preparedness planning.

This research assumes that a stronger understanding of existing vulnerabilities and capacities can strengthen preparedness planning at the community level; thereby ensuring that the needs and capacities of communities are directly informing preparedness efforts.

2 Background and concepts

This report touches upon several concepts that are central to the research, such as vulnerability, capacity, preparedness planning, CBDP and risk. Given the various definitions and degrees of understanding of each concept, this section provides clarification of this terminology as it is understood for the purpose of this research.

2.1 Vulnerability

Vulnerability can be understood as “the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard” (UNISDR, 2009, p. 30).¹ Its impacts are visible through the characteristics of groups and individuals “and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard” (Wisner et al., 2003, p. 11). Therefore, vulnerability can impact across all dimensions of the spectrum of disaster risk management. As parts of wider systems, the vulnerabilities of individuals contribute to the overall vulnerabilities of their communities.

The influence of vulnerability encompasses physical, social, economic, and environmental factors, amongst others, which determine the level to which human life, livelihoods, property and assets are at risk of disaster impact (UNISDR, 2005; Wisner et al., 2003). For instance, physical vulnerability typically includes the “built environment”, such as buildings and transportation networks; social vulnerability encompasses factors attributed to individuals, society, politics, and culture, including people’s behaviours; economic vulnerability includes the ability of individuals and communities to financially reduce their risk to disasters; and, environmental vulnerability concerns how the natural environment and human interactions with nature contribute to disaster risk (Coppola, 2011).

Vulnerability also “involves varying magnitudes”, referring to those individuals and physical assets at higher risk, or “at the ‘worse’ end of the spectrum” (Wisner et al., 2003, p. 11-12). Traditionally, the literature identifies “vulnerable communities”, including under this label, women, children, female-headed households, the elderly, persons with physical disabilities or mental illnesses, indigenous peoples, and those who are economically disadvantaged,

¹ Within the scope of this research, the report will draw on a broad understanding of “community” as the local populations located within a specific political administrative boundary (Buckle, 1998); in the case of this research, that is the lowest level of community organization, referred to as the “barangay” in the Philippines context.

amongst others (ESCAP & UNISDR, 2012; Morrow, 1999). However, Buckle (1998) highlights the problematic nature behind grouping entire categories of people as being vulnerable, pointing out that “vulnerability...is not homogeneous” (p. 24). Applying such labels creates the false assumption that every person within that group is vulnerable and experiences vulnerability to the same degree simply because of their association with that group. However, even within the same group, “individuals may be exposed to different magnitudes of loss” (Buckle, 1998, p. 23). Drawing false generalizations causes a fixation on seeing groups through their supposed vulnerabilities, rather than recognizing the characteristics and experiences of individuals that may contribute to their reduced exposure to risk (Buckle, 1998). In cases where individuals within one of those groups are vulnerable, this does not provide the space to determine why those vulnerabilities exist (Buckle, 1998).

Those included in the above-mentioned groups are not the only members of society who can be vulnerable. Any individual in a community can be vulnerable in various ways (Buckle, 1998; UNISDR, 2009). As ESCAP & UNISDR (2012) note, “...while they are the hardest hit in a disaster, vulnerability can increase for everyone in a community” (p. viii-viii). Vulnerability also changes over time, and as Wisner et al. (2003) argue, “can be measured in terms of damage to future livelihoods” (p. 12; UNISDR, 2009). As well, vulnerability is related to a particular stressor (i.e. the dimensions of vulnerability mentioned earlier). For instance, regarding natural hazards, an individual could be vulnerable to fire, but not to flood, even though the community is at risk of being impacted by both natural hazards.

2.2 Capacity

Nonetheless, the reality of our interactions with disasters should not only be viewed through a bleak lens, fixating on helpless victims and infrastructure that are vulnerable to impact (Hewitt, 1997 as cited in Wisner et al., 2003). On the other side of vulnerability is capacity, “the resources...to resist the impact of a hazard” (IFRC, 2008b). Capacity is “the combination of all strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals” (UNISDR, 2009); These strengths, attributes and resources are either functional (stakeholder engagement, assessments, budgets, etc.) or technical (addressing specific needs) (CADRI, 2011). Therefore, capacities can span from “infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills and collective attributes such as social relationships, leadership and management” (UNISDR, 2009, p. 5-6).

With the presence of capacities within a community, these resources can support the ability “to resist a hazard’s harmful effects and to recover easily” (Anderson and Woodrow 1998; Eade 1998; IFRC 1999b; Wisner 2003a as cited in Wisner et al., 2003, p. 12). Such supports can be felt across three levels: the enabling environment, organizational level, and individual level (CADRI, 2011). The enabling environment concerns “the broader system within which individuals and organizations function that can either facilitate or hamper their existence or performance” (CADRI, 2011, p. 9). Essentially, this level sets the stage for the ability of capacities to exist and flourish within a society. This encompasses the processes and legislation within the political realm, as well as the societal relations and social norms that shape how we engage with one another (CADRI, 2011). At the organizational level there is a greater inward focus on organizations themselves and how they function and facilitate the space for individuals and their capacities to jointly work together (CADRI, 2011). This includes leadership, how organizations approach engagement, achieve results, manage change, etc. (CADRI, 2011). Finally, the individual level lays its focus on the capacities of human beings themselves, whether individually or in a group, obtained through formal training, experience, networks, etc. (CADRI, 2011).

Despite the presence of vulnerability, when we come to recognize the capacities within a community, this presents greater space for opportunity in challenging the risk posed by natural hazards and our exposure to them. Each community is equipped with capacities to some degree (Wisner et al., 2003). It is the presence of these capacities that counter vulnerabilities and still enable communities “to resist, avoid, adapt to those processes, and to use their abilities for creating security either before a disaster occurs or during its aftermath” (Wisner et al., 2003, p. 14).

2.3 Preparedness planning

2.3.1 Traditional preparedness planning

With regards to efforts in anticipation of a disaster, preparedness planning helps to “eliminate the need for any last-minute actions” (Coppola, 2011, p. 251). This surrounds “the knowledge and capabilities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover...” (UNISDR, 2009, p. 21). Traditionally, preparedness is associated with the presence of a plan, however, preparedness planning involves many additional initiatives. Perry & Lindell (2003) stress that “planning is a never-ending jurisdictional process, while the plan

itself represents a snapshot of that process at a specific point in time” (p. 338). As well, preparedness is not a one-size fits all approach, but rather should instead be “contextually grounded” and specific to each community (Gil-Rivas & Kilmer, 2016, p. 1325). Communities not only experience the greatest impact of disasters, but also provide access to an understanding of the local context (Allen, 2006).

2.3.2 Community-based disaster preparedness (CBDP)

Contributing to reducing vulnerabilities and disaster risk management, CBDP has been recognized for its growing importance (Allen, 2006; Troy et al., 2008). CBDP places community members at the centre of preparedness planning, with “the idea...to involve the local community in its own systems of preparedness” (IFRC, 2006). This bottom-up approach places value on the knowledge and capacities already existing within communities (Allen, 2006). In effect, “CBDP approaches emphasise community self-reliance, raising awareness of vulnerability and the root causes of disasters and developing practical problem-solving skills” (Allen, 2006, p. 82). Thus, this approach enables a community’s hazard, vulnerability and capacity data to be captured, which Perry & Lindell (2003) deem necessary for contextually based preparedness efforts. It is this approach to preparedness planning that is the focus of the research.

2.4 Risk

The concept of risk was numerously mentioned in clarifying vulnerability and capacity. Risk was also frequently noted during the interviews, with respondents drawing attention to the relationship between the three concepts, given the following formula:

$$Risk = \frac{Hazard \times Vulnerability \times Exposure}{Capacity}$$

(UNISDR, 2012)

This formula reflects the common understanding of risk amongst the respondents. That is, that the contributing factors to risk include the presence of a hazard, existing vulnerabilities, as well as the degree of exposure, which can be minimized through the presence of existing capacities. However, it is important to note that this is not the only definition of risk and there are many other ways to define risk. For instance, Coppola (2011) explains risk with reference to scenarios, as “the likelihood of an event occurring multiplied by the consequences of that event, were it to occur” (p. 140). While other scholars draw to more

quantitative definitions of risk (Kaplan & Garrick, 1981). Nonetheless, given that the above-mentioned formula encompasses the predominant understanding of risk within the context of the research, this is the definition of risk that will be utilized.

3 Methodology

The research draws on a case study of the Philippines, informed by the experiences of practitioners operating across the country, while drawing on two focus areas. The methodology encompasses primary data based on interviews and secondary data, including literature regarding vulnerability, capacity, preparedness, disaster risk reduction and the linkages among them.

3.1 Rationale: The Philippines case

During a scoping study conducted in November and December 2017 with six key informants from PRC, the respondents unanimously agreed that VCAs should be used to inform preparedness planning. Previous research on CBDP is also based on experiences in the Philippines (Allen, 2006). This foundation of research is coupled with knowledge and experience conducting VCAs, held by PRC, IFRC and Partner National Societies (PNSs). VCAs are conducted within “barangays”, the lowest level of government, compared to villages within rural settings or districts within towns of urban areas (Allen, 2006). Local government units (LGUs) are mandated by the Philippine Disaster Risk Reduction and Management Act of 2010 (R.A. 10121) to carry out vulnerability and risk assessments (NDRRMC, DBM & DILG, 2013).²³ Therefore, many communities across the country are familiar with assessments including and similar to the VCA.

The Philippines, as the third most at-risk country to natural hazards, located within the notorious Pacific Ring of Fire, regularly responds to disasters (Bündnis Entwicklung Hilft, 2017).⁴ The country is amongst the most seriously disaster-affected countries in Asia Pacific (ESCAP, 2017). Within less than a 10-year span from 2006 to 2013, the country experienced 78 disasters, including 50 tropical storms – such as Typhoon Haiyan, one of the strongest tropical cyclones ever recorded – 24 floods, one major earthquake and one volcanic eruption (ESCAP, 2017). Despite this reality, LGUs and BLGUs remain focused on preparedness efforts, with DRR and climate change adaptation measures integrated within policies, plans and budgets (ESCAP, 2017). Finally, the researcher’s familiarity with CBDP and VCAs within the

² Local government units (LGUs) in the Philippines can include the provincial, municipal, city, or barangay level.

³ For further details regarding R.A. 10121, see Republic of the Philippines (2010).

⁴ The Pacific Ring of Fire is a belt of seismological activity located in the Pacific basin, where “most of the world’s earthquakes, the overwhelming majority of the world’s strongest earthquakes, and approximately 75 percent of the world’s volcanoes occur” (Britannica, 2018).

Philippines, as well as previously established contact with Red Cross actors and BLGUs, enabled an ease of access for data collection.

3.1.1 Focus areas: Urban and rural experiences

Recognizing the influence of urbanization and rural livelihoods to disaster risk vulnerability, a deliberate effort was made to capture experiences within both contexts (UNDP, 2004). Two areas were selected for further exploration, including one urban barangay in a city within Metro Manila and one rural barangay within the province of Aklan in the geographical area of Visayas. The selection process was based on the following criteria:

- The chapter (local PRC office) is experienced in conducting VCA, having conducted at least four;
- At least one VCA has been conducted in the selected barangay; and,
- The VCA(s) conducted in the barangay have been used to inform preparedness planning.

To balance the limited timeframe for data collection with the time required to coordinate with BLGUs, existing relationships between chapters and respective BLGUs in their area were also taken into consideration.

3.2 Data collection

Primary data collection involved 30 qualitative semi-structured interviews conducted in English.⁵ The respondents included practitioners from the local, national, regional (Asia Pacific) and global levels engaged in DRR, preparedness and VCA to capture opinions and experiences across all levels (see Appendix E).⁶ This included Barangay Disaster Risk Reduction Management Committee (BDRRMC) members (including Red Cross 143 representatives), primary and secondary school teachers (involved in a school-based VCA), experts from PRC chapters and national headquarters, PNSs operating in the Philippines, and the IFRC Philippine Country Office, Asia Pacific Regional Office and headquarters in Geneva.⁷ Unable to travel to each of PRC's DRR project areas where VCAs are conducted, it was

⁵ The number of interviewees gradually increased due to unintentional snowball sampling. This method was not actively adopted, however, respondents voluntarily provided recommendations of experts during the interviews.

⁶ One respondent worked with a health-specific assessment similar to the VCA, as part of the Community-Based Health and First Aid approach. This interviewee was included due to unintentional snowball sampling, to gain perspectives from using another assessment other than the VCA.

⁷ The Red Cross 143, is a unique model of organizing local PRC volunteers. This includes 1 leader and a minimum of 43 members who are trained in various areas such as disaster management, health, welfare services, blood donation, first aid, and community organization.

possible for the research to draw from a wider coverage of contexts by including practitioners from PNSs operating across the country.

Semi-structured interviews proved most suitable, as the research draws from the experiences and opinions of the respondents. This method allowed interviewees to expand on their responses, while providing the flexibility to delve deeper through follow-up questions (Bryman, 2016). The interviews comprised of twenty-three individual in-person interviews, four individual Skype interviews, two focus group discussions (FGDs), and one email. The various interview formats were adopted to adapt for the accessibility of the respondents. Skype interviews enabled the participation of regional and global experts, while email was utilized to accommodate one respondent's preference, resulting from their inability to participate in person. FGDs were carried out due to an unexpectedly high number of interviewees in the rural focus area, owing to a strong interest in the research. This included two FGDs: one with eight BDRRMC members and the other including four Red Cross 143 representatives, as well as two elementary school teachers and two high school teachers involved in a school-based VCA. FGDs provided the unexpected benefit of respondents assisting one another in drawing from their memories, supporting or challenging others' comments, strengthening the validity of the responses (Bryman, 2016).

Each respondent was previously informed of the purpose of the research and given the opportunity for clarifications before, during and after the interviews (Bryman, 2016). All interviews were recorded with the informed consent of the respondents (see Appendix D), then transcribed for ease of analysis (Bryman, 2016). The interview questions (see Appendices A, B and C) were not disclosed to the respondents beforehand in order to obtain genuine responses, minimizing the potential for rehearsed input. Of course, in the case of the email interview, this could not be avoided.

3.3 Data analysis

Following manual transcription, the initial review of each interview involved coding using NVivo software (Bryman, 2016). Coding enabled the creation of nodes to assist in pinpointing key words and themes across the interviews (Bryman, 2016). As each interview question was developed to address one of the five objectives of this research, the data was further analyzed based on the responses of all respondents to each interview question. This method of analysis allowed for comparisons to be made amongst the responses, drawing connections accordingly, as well as further verifying the themes identified through the

coding process. Given that this research is largely informed by interviews with practitioners, the results are based on the experiences of the respondents, presented according to the themes that emerged from the data analysis. Based on the results, conclusions have been drawn through the identified overarching themes and key points stressed by the respondents, then further cross-referenced with the literature to support or challenge these results.

3.4 Limitations

During the time of data collection, several response operations were underway, including those for Typhoon Tembin, Tropical Storm Kai-tak and the Mayon volcano eruptions. In addition to the security risk within certain areas of the southern islands of Mindanao, the selection of focus areas was limited to those within the geographical areas of Luzon and Visayas that were without ongoing response operations. The timeframe for data collection, as well as the coordination required to gain access to BLGU officials, limited the original aim of two urban and two rural focus areas to one each. However, an attempt to draw from a greater number of project areas across the Philippines was made through the inclusion of experts from PNSs, in addition to practitioners from PRC and IFRC.

Unexpected minor language barriers were encountered during the FGDs in the rural focus area. Prior efforts were made to verify the need for a translator. However, although receiving confirmation that conducting the interviews in English would not pose an issue, upon arrival, minor challenges in comprehension were apparent. Given so, a teacher from the community with a strong level of English comprehension assisted with providing simultaneous translations as needed.

Additionally, the original intent was for the methodology to also include a document review of a VCA Report and Barangay Disaster Risk Reduction Management Plan (BDRRMP) from before and after the VCA was conducted. This would have enabled the potential to directly compare changes made to BDRRMPs following the VCA process. However, sufficient documentation to support this analysis was either not available or a BDRRMP was not in place prior to the VCA.

4 Results: Impact of vulnerability and capacity on the ability to prepare

To develop a stronger understanding of the nature of the relationship between vulnerability, capacity and preparedness, the respondents shared how vulnerability and capacity impact the ability of communities to prepare.

4.1 Vulnerability

One respondent noted a direct relation between vulnerability and preparedness. This can be better understood through a recognition of the reality faced by individuals and communities that are vulnerable in some respects. Several respondents remarked such individuals and communities are faced with other priorities, such as meeting basic day-to-day needs, which compete with their ability to focus on preparedness. Within one of the focus areas, community members explained that they felt they had to choose between being prepared and earning an income. One respondent further illustrated this reality,

If the community is weak, poor and living within the poverty line, they really do not have time to actually prepare...because everybody is dealing with their own problems and they do not have time to actually get together as a community and deal with the overall problems that they face. Especially with disaster preparedness...

Therefore, in some cases, due to the daily pressure to uphold one's livelihood, engaging in preparedness efforts can seem beyond reach.

The type and scale of vulnerability also impacts the feasibility of preparedness efforts. This can be due to the previously mentioned dimensions of vulnerability.⁸ For instance, one respondent noted that vulnerability related to one's location can directly impact the motivation or incentive to prepare due to impacts on livelihood. Whereas for individuals who are elderly, single-headed households or individuals with physical disabilities, another respondent commented, "the ability of these people to prepare may be limited and they may need outside support to do that". In effect, one respondent emphasized, "there are some vulnerabilities that are not that easy to address", but there are also those that are "quite controllable". For instance, they explained that financial vulnerability demonstrated

⁸ See Background section for a description of the various dimensions of vulnerability (i.e. physical, social, economic, environmental, etc.).

by a lack of savings or insurance could limit the ability for risk to be transferred, while a lack of awareness of risks could lead to repeated impact. However, such vulnerabilities were identified as those that could be overcome. On the other hand, physical vulnerabilities, such as location in a disaster-prone area due to a lack of choice stemming from poverty and lack of land tenure can challenge relocation to a safer area. Not to mention, as the respondent noted, “sometimes a safe area does not have enough facilities for essential daily living”.

Perhaps it is not only the ability to prepare, but the need to prepare. One respondent made this distinction, drawing attention to the greater need for communities to prepare if they are vulnerable in some respects. Although risks and vulnerabilities may be present, and communities may not be able to reduce those vulnerabilities, “they might be as a community, ready to act”. Therefore, the presence of vulnerabilities does not always diminish a community’s capacities and the impact of those capacities on preparedness.

4.2 Capacity

With regards to capacity, the respondents drew more direct conclusions about a connection to preparedness. While reflecting on an experience from a previous disaster outside of the Philippines, one respondent noted that the capacity of a community and their level of preparedness are linked by “a straight line”, with visible consequences and a causal relationship. Another respondent emphasized, “low capacity, lower levels of know-how, less assets, less resources, reduces their capacity to prepare”. As pointed out by one respondent regarding disasters, “...capacity is always the defining factor that can change the impact”.

Based on experiences with previous disasters, respondents were able to validate the claim that capacities can minimize the impact individuals face during a disaster. Approaching capacity as a multi-dimensional factor contributing to preparedness, one respondent revealed the connection between capacity and the five capitals: natural, social, physical, human, and financial. These capitals, originating from the livelihoods framework, are argued to be what sustainable livelihoods are built upon (DFID, 2001).⁹ The respondent explained that the strong presence of each of these capitals also strengthens the capacity of the community and their ability to engage in preparedness. This argument was confirmed by several respondents who commented on how a combination of capacities enables a

⁹ Sustainable livelihoods refer to “people’s capacity to generate and maintain their means of living, and enhance their own well-being as well as that of future generations. Households have sustainable livelihoods when they can cope with and recover from shocks and economic stress, and can maintain their capabilities and assets without undermining their natural environment” (IFRC, 2010, p. 15).

community to carry out preparedness efforts. Emphasis was placed on the human capital of knowledge and its role in enabling individuals to support other community members to engage in preparedness. Additionally, capacities not only impact preparedness, but also contribute to countering vulnerabilities, helping communities “overcome different vulnerabilities or at least to mitigate those vulnerabilities in order to lessen the risk...”.

4.3 Additional factors at play

Such experiences illustrate that the impact of vulnerability and capacity on the ability of a community to prepare is not simply direct, but also based on additional influencing factors. An overwhelming number of respondents highlighted that knowledge of existing vulnerabilities and capacities contributes to how those vulnerabilities and capacities impact preparedness.

With regards to vulnerability, many respondents pointed out that whether preparedness measures are undertaken is related to people’s sense of their own vulnerability. As witnessed in one of the focus areas and commented on by one respondent, “Unless you are aware and recognize the challenge, you cannot really take action”. In effect, the lack of awareness of one’s situation can limit the potential for change. Whereas a respondent from an FGD remarked regarding seeking assistance based on a previous disaster, “...if you knew that you were vulnerable, at least you could do something”. Therefore, respondents held the common belief that community members must be knowledgeable and aware of their vulnerabilities in order to act and counter those vulnerabilities through capacity-building and preparedness efforts.

As capacities enable communities to take action, respondents commented on knowledge-sharing amongst community members regarding their capacities and the effect this had on being ready to act when a disaster occurs. One respondent further explained,

If ever a community will identify their strengths, what they have, what they can have, it will help them to prepare better. For example, given that, if ever the community has equipment, and they know how to use it and they know where it is, it will be their strength, or one of their capacities that they can use, especially during times of disaster or during their preparedness phase. Because identifying their capacities is also part of preparedness.

Therefore, it is not only the existence of capacities and vulnerabilities that can impact preparedness. If a community is aware and knowledgeable of their situation, informed of how they are vulnerable and their means to prepare to respond when a disaster occurs, this knowledge and awareness will not only influence their ability to prepare, but also how that preparedness can take shape.

5 Results: Importance of vulnerability and capacity data

Knowing the impact of vulnerability and capacity on the ability of communities to prepare, the respondents unanimously agreed that vulnerability and capacity data should be used to inform preparedness planning, providing the following reasoning.

5.1 Context

As one respondent made clear, with “any simple problem-solving model, identify the problem. That’s the first step”. The ways government officials engage in preparedness planning at the community level is no different. Before efforts can begin, one respondent argued, “you need to know what it is you are preparing for, so understanding the scenario”. Through using vulnerability and capacity data to inform preparedness planning, that level of understanding can be achieved. As one respondent commented, “This is important in order to clearly see the real situation in the community”.

Many respondents stressed the equal importance of both types of data in coming to an understanding of the context and gauging the level of preparedness. To further explain, one respondent noted, “Obviously you want to minimize the vulnerabilities, so reduce them where you can...But at the same time, you want to build on existing capacities”. To do so, an awareness of the vulnerabilities and capacities within the community is necessary. Through gathering this information, one respondent commented, “you can now at least weigh down if the community is part of the most vulnerable or they can already cope, or they have the capacities to dominate those vulnerabilities in order to have change”. The need for this data was strongly emphasized, as one respondent argued, “...the logic is clear. Because if we do not have that data or information...we cannot plan ahead for the preparedness for the coming disaster...”. Whereas, several respondents argued that the data can help to identify what can and cannot be done, as well as present resources and those that need to be obtained. In effect, one respondent pointed out that this helps to clarify existing gaps in capacity, “Then based on the gaps, you prepare yourself and develop contingency planning”.

The high importance of being aware of the context during response operations was also stressed. As one respondent explained,

Unless you understand a community, what its vulnerabilities and capacities are, then you cannot design a response. Everything is tailor-made to a community, it is all

based on who they are. Unless you understand that, then the response will not have the impact that you want.

Ultimately, this information provides a baseline of the existing level of preparedness already present in the community and can help to better frame preparedness planning moving forward.

5.2 Basis for preparedness planning

Vulnerability and capacity data also provides a basis for preparedness planning efforts. As one respondent stated, “If you want to plan ahead, you need to know where all these things that you want to do in the plan are coming from”. Therefore, this information helps local governments justify proposed actions, demonstrating that they are relevant to the community.

5.2.1 Evidence-based preparedness planning

Many respondents voiced the need for preparedness plans to be based on evidence. For instance, stressing the necessity for plans to be based on data, “because the data will quantify. It is physical data, physical evidence”, while noting a continuous emphasis on evidence-based information. One respondent also added the “need to work on recognized needs, recognized factors that put people at a higher risk”. The value in doing so has already been witnessed at the community level. A government official in one of the focus areas explained that this data helps to clarify the real needs and risks present in the community. They continued to share how prior to the VCA and the collection of vulnerability and capacity data,

...we used to guess. But in the data, it is not guessing. It is the reality that the people need...When you are assisting one scenario and events, you need data. And that data came from the people who are to be recipients, or maybe a victim, they belong to the community. It is important and needed.

In effect, vulnerability and capacity data that comes from the community members themselves supports local government planning of relevant preparedness measures.

5.2.2 Prioritizing

The relevance of preparedness planning efforts coincides with the ability to prioritize actions. As one respondent remarked, the data will allow communities to identify their strengths and weaknesses, enabling them to prioritize their actions and make use of existing resources to support their efforts. Prioritization is necessary to make the best use of available time and resources. As the respondent noted, “This will prevent creating a plan which is unrealistic and unattainable”. In addition, a respondent from one of the focus areas shared that this data helps familiarize BLGU officials with which areas of their community are most vulnerable. Several of the respondents agreed that vulnerability and capacity data can lead local government officials to recognize the priorities of their community that they should focus on through preparedness planning.

5.2.3 Enables actions to be taken

With this level of understanding, local government officials can then begin to take action. One respondent noted, “If you have both the capacity data and the vulnerability data you know where your weaknesses are and what your capacities are, and you can make those vulnerabilities switch to become a capacity”. This information can directly feed into and support processes for creating preparedness plans. As experienced within one of the focus areas, “...without that data we cannot do. We cannot make any preparedness plans. So we base our preparedness plans from the data that we gather”. While officials from the other focus area spoke to their ability to disseminate information and “inform the community to prepare if the hazard is coming”. One respondent drew a connection to the contribution of the data to strengthening the BLGU’s capacity to plan. As a respondent working within community-based health approaches explained, the historical information on epidemics and the risk of epidemics during and following a disaster enables anticipatory actions such as training and information dissemination, as well as the procurement of necessary materials. Thus, further emphasizing that the power of vulnerability and capacity data rests in how it can be transformed into concrete action.

5.3 Importance of community-based data

However, it is not only access to vulnerability and capacity data that deems it important; a crucial aspect of the importance of the data stems from its source. Across all interviews, there was a strong belief that the data must come from community members. As pointed

out by a BLGU official, "...it is their reality. These are the residents, the people of this community. We cannot figure it out without asking them". As they continued to explain,

It is just like asking hungry people, you are going to give clothes, but in reality, they are hungry. Then you give clothes. They do not need clothes. They eat the clothes? Then you ask first, 'What is your need, what do you want?' 'We are hungry.' We give food rather than clothes. Maybe clothes are the second, but the priority is to ease the problem of the community.

By directly engaging with and involving community members within the data collection and analysis process, local government officials were able to discover the real concerns and strongest needs of the people within their community.

As an added benefit, one respondent pointed out, "it also helps the people to be seen", as evidence that there are vulnerabilities being faced by certain members of a community in certain areas of that community. This also allows people "to speak for themselves and decide for themselves", for what and how they will prepare. The difference noted by respondents between preparedness plans solely created by BLGU officials versus when the data is informed by the community, was ownership. As a result of engaging community members during data collection and analysis, preparedness plans are not only made by the local government officials holding the pen. This sense of ownership amongst individuals over their community's preparedness plans results, as one respondent remarked, "because they made it".

Some respondents noted that this community-based data could be combined with secondary data, such as topographical analyses, meteorological data, engineering infrastructure analyses, etc. As such respondents emphasized, this combination of data can help to further support and validate the data coming from the community members. This pairing of data can then help to influence higher levels of government or donors who provide funding for preparedness activities.

6 Results: How the data is being used to inform preparedness planning

The respondents confirmed that VCA data is being used to inform preparedness planning.¹⁰ As one respondent explained, the data is applied across various preparedness interventions, enabling BLGU officials to determine and prepare for, the “what to do”, before, during and after a disaster.

6.1 Preparedness Plans

In confirming that this data supports BLGU officials in writing preparedness plans, the respondents commented that the data is used as the basis for BDRRMPs and contingency plans. One respondent made the effort to draw a distinction between previous BDRRMPs and those written once a VCA had been conducted, emphasizing that this resulted, “because it was a process”, referencing the entire VCA process. The respondent noted that prior to the VCA, “I would not say that they had any type of vulnerability risk assessment...”. Rather, they explained that the BDRRMPs were previously based on the understanding of those BLGU officials of the situation within their community, without basis in some sort of analysis. However, with the use of VCA data to inform BDRRMPs and contingency plans, this information is now coming from a broader group of community members.

6.2 Additional impacts on preparedness planning

Beyond these plans, the use of vulnerability and capacity data has demonstrated additional widespread benefits across numerous preparedness planning measures.

6.2.1 Budget and access to funding

To carry out the efforts outlined within the BDRRMPs or contingency plans, this requires funding. As a respondent from a PRC chapter observed, BLGU officials use the data as a basis for their budget, made possible after identifying capacities. This enables BLGU officials to “not double whatever they need”, as they explained,

...in the VCA we already identified that we do have existing equipment...Previously they did not have such an idea, so they will purchase again, because they do not have inventory, they do not have information. That is why, instead of buying the same

¹⁰ Only one respondent at the national level was unable to provide a response as they indicated the VCAs for their respective projects are yet to be rolled out.

things again, they buy other things. In the VCA we already identified the number of trained volunteers. So instead of them having trainings again, they will save much, because they will train for another type of training, instead of having training for the same volunteers.

In effect, able to more accurately identify capacities, the respondent noted, “their minimal budget could go much farther”.

Given the limited budgets of barangays for DRR, this can result in the need for external funding. As one respondent commented of their project areas, “there are a few barangays...that use the data and the VCA Action Plan to get some investors in the community for getting some extra funds for small-scale mitigation projects”. As they emphasized, “it does not seem like something extremely big, but it is...it is a big step for them”. Such additional funding was used for measures such as lighting streets and early warning systems, amongst others. In the aftermath of a disaster, barangays can access “calamity funds” for relief and rehabilitation of communities affected by a disaster (Republic of the Philippines Department of Budget and Management, n.d.). These funds are only accessible with a Barangay Action Plan, where as one respondent noted, “they have to identify the hazards in their community. Their capacity and their vulnerabilities”.¹¹

Therefore, vulnerability and capacity data make preparedness efforts possible, by allowing BLGUs to not only make better use of their budgets, but access additional funding.

6.2.2 Mapping

During the VCA process, one of the tools used to identify the hazards, vulnerabilities and capacities is a spot map, with layers indicating each of the above-mentioned. One of the respondents commented that an outcome of the VCA was that most barangays now had spot maps. Such maps help the community members and BLGU officials to identify the location and number of households, critical infrastructure and other assets present in the community that could be utilized during response operations. As a BLGU official in one of the focus areas explained, “If the hazard is coming, just open the record and look for the hazard

¹¹ The Barangay Action Plan outlines the specific actions that a barangay will take for disaster risk management efforts, including details of the required resources, funding, and personnel responsible for ensuring such actions.

map...because there is a map of vulnerability and capacity. Look for the vulnerable if the hazard is coming and assign people to go there...”.

6.2.3 Information dissemination

Within both focus areas, respondents commented on the ability to disseminate information to community members based on VCA data. For instance, in one of the focus areas, this data not only enabled them to determine fire risk within their community, but also which specific houses are made of light materials and thus, are more vulnerable to fire risk. The data obtained through the VCA also demonstrated the need for additional means of disseminating information to the public. As one BLGU official explained their intent to install sound systems throughout their barangay, they noted this need was identified during the VCA, when community members were directly asked about their greatest problem during a disaster. While in the other focus area, several respondents spoke to the use of barangay assemblies as an opportunity to share information with community members regarding their vulnerabilities and capacities.¹² One BLGU official explained, “people know already where are the places which are considered to be vulnerable, the places considered to be the capacity, the places to go in case of emergency...That is because of the VCA”.

6.2.4 Program development

Within urban areas, the concern to maintain one’s livelihood was noted by several respondents. As a BLGU official clarified, “...most of the people there are informal settlers, less education, poverty struck area. So, their primary concern is livelihood, rather than to be disaster ready”. In effect, the information from the VCA has helped the barangay to create a program for these community members that is related to their BDRRMP. They shared, “We formulate a program for them, addressing the two major problems in their area, livelihood and disaster preparedness”. The respondent explained that while the community members are working, they are simultaneously trained on how to be prepared in the event of a disaster. Such programs also provide opportunities for community members to have access to sustainable livelihoods, addressing the need to provide for their families while enhancing the potential for early recovery in the event of future disasters (IFRC, 2010, p. 1).

¹² A barangay assembly is a gathering of community members by the BLGU officials to share information to residents regarding developments in their community, while providing an opportunity to discuss concerns.

6.2.5 Beyond the barangay

The potential application of this information for preparedness planning can also extend beyond the local community. As one BLGU official shared, they also provided the municipal government with their findings. They explained the importance of sharing this data in noting, “We are one component part of the city, so whenever there is a disaster, they are also affected”. This speaks to the reality that the barangay is part of a much larger system, encompassing the different actors and assets within the city in which it is situated. Having provided this information to the municipal government, the barangay official noted that the city was grateful for the barangay assisting them, through “guiding us in what to do”.

7 Results: Visible differences in the level of preparedness

The respondents also shared the visible differences witnessed in the level of preparedness amongst community members once a VCA had been conducted, noting the following tangible and wider reaching changes.¹³

7.1 Existence of a preparedness plan

As one respondent confidently remarked, “...if you compare a community that has done VCA and a community that has not done VCA, you can see the difference. They know what they are facing, but they also have a plan”. Within one of the focus areas, respondents indicated that previously, the barangay did not have its own BDRRMP. Instead, they relied on the DRR efforts of the city within which their barangay is situated. As a barangay official noted when asked why there was a sudden change to have a BDRRMP, they stated that this occurred “Because of the VCA”.

7.2 Focused and structured preparedness plans

In communities where BDRRMPs were already in place, a respondent from one of the focus areas stated that some previous plans were “almost copy-paste, the same vulnerabilities in the same barangay...”. However, due to the community-based approach to data collection, the respondent witnessed that plans are “more localized”. Another respondent equated this visible difference to the process having guided BLGU officials “on investigating the risk that they are facing, their vulnerability and their capacity”, which could then be used to plan activities. This greater focus within the plans was also witnessed by one respondent, “...comparing the previous to the current with VCA reference, it is better and more specific and more prioritized activities”. With a realistic recognition of the available resources within the community, the respondent witnessed plans that were aimed to address one particular issue the community repeatedly faced.

A second respondent from the national level witnessed differences within the structure of BDRRMPs. Reflecting on the quality of the plans prior to the VCA, they noted, “...previously their BDRRMP is just a two-page wish list of what to procure”. However, following the VCA, the respondent pointed out that the BDRRMPs were more comprehensive. As they explained, “...they are more aware of when and where and why they are going to procure

¹³ Although asked whether visible differences in the level of preparedness of community members was witnessed once VCA data had been used to update existing preparedness plans, not all of the respondents clearly indicated whether the changes were witnessed as a direct result of updates made to existing plans.

those equipment”. The respondent emphasized that this heightened awareness enabled BLGUs to recommend activities, while providing justifications. This has allowed for distinguishing roles and responsibilities, while also “making people more proactive”. In effect, enabling a more systematic approach to preparedness.

7.3 Trainings

Another example of how a more systematic approach to preparedness has been adopted is through trainings – the need for which, derived from the VCA. In sharing their plans to carry out trainings for fire risk, a barangay official from one of the focus areas explained, “Starting is the formulation of a team, then training the team, then a simulation...we will teach the people how to respond. Then we will make a comment and conclude if it is ready or not. That is our system”. A respondent from national headquarters also indicated that visible differences could be seen through sessions in communities, “to make them understand what they have to do in times of earthquake and typhoons”.

7.4 Evacuations

Changes were also witnessed within the behaviour of community members regarding evacuations. Previously, one respondent noted difficulties in getting people to evacuate before a typhoon, however the new-found awareness of their location in a flood prone area and possible impact pushed them to evacuate. Another respondent from one of the focus areas drew from their experience with a typhoon during the previous month. They shared,

In fact, it showed in Typhoon Agaton. Before, they did not have any evacuation plans, no volunteers to inform them or to remind them there’s already flood, typhoon and everything. But during Typhoon Agaton, the barangay, our volunteers also, informed the community members. Aside from informing the community members, they have already pre-evacuated those persons who are near the river.

The data had been used to update their population statistics for infants, children, senior citizens and persons with disabilities. As was explained by the respondent, families were able to escape the rising water levels, evacuating to concrete houses more resistant to impact.

7.5 Timeliness of the response

Evidence of more timely response actions was witnessed in both focus areas. One respondent commented, "...since we have community-based volunteers with equipment, now they are already on the scene within a few minutes". The need for such volunteers and equipment was revealed during the VCA. While a respondent from the other focus area shared similar experiences. Commenting on the speed of their response, their barangay was able to respond first, before the city's response team. They confidently emphasized that their barangay "is really a disaster-ready barangay".

7.6 Awareness

Several respondents spoke to the ability of the VCA to result in a greater awareness amongst community members. As one respondent remarked, "The level of understanding of the reality, of the needs, of the vulnerabilities of the community is increased". They equated the VCA to a discovery process, "they discover things that they had not thought about before". For instance, there was a shared view that communities can recognize root causes of disasters they are experiencing and what they can do. As one respondent commented, "Once they [the community] know about their own diagnostic, they want to do something". For instance, in the urban focus area, when the community became aware that fires were caused by wire tapping onto the main electrical line because they lacked an electric metre, the community members contacted the utility company to have one installed.

As one respondent observed of community members, "...they do not just rely on the support from the local municipal government, but if they can do something with their capacity, as a household, I think they are doing it...". Once aware of the underlying causes to why they are experiencing disasters, community members can be agents of their own preparedness.

7.7 The process behind the data

Although not explicitly asked to comment on the VCA process, many respondents linked increased awareness and other visible differences to how this process is carried out. As one respondent clarified, "...it is not whether you do a VCA or not, it is how you do a VCA and whether you follow up on it". The need for ownership was emphasized by another respondent, noting the need for the process to be well implemented to foster ownership amongst community members. The respondent stressed the need to "come back to communities, because that's where we work", drawing a linkage between community ownership and sustainability. The respondent explained,

The Red Cross was founded on the idea about helping individuals and using communities as the mechanism for that. Dunante went to the little villages around Solferino and got people from the little villages. He did not go to Rome, he did not go to Turin, he went to the little villages and said come and help me, and individuals did that. And then they used the resources and the capacity of those individuals. The halls, the schools, the churches, that's where they took the wounded soldiers and cared for them.

As several respondents discussed, differences in the level of preparedness amongst community members can be witnessed if those community members are engaged in the development of their local preparedness plans. One respondent noted, "If they have been, preferably not only engaged and consulted, but truly engaged and preferably in the driver seats of this process, then you will see a greater impact". In effect, there is evidence that the vulnerability and capacity data resulting from the VCA has produced tangible contributions to heightened preparedness – the key to this being how the process to obtaining this data was undertaken.

8 Results: Challenges

Despite the applicability of the data and visible differences it has triggered, many respondents drew from their experiences to share the challenges they encountered with using vulnerability and capacity data to inform preparedness planning.

8.1 Challenges with using the data

8.1.1 Local government officials' trust in the data

Before local government officials can use the data, they need to accept it is a true representation of their community. Several respondents noted BLGU officials question the validity of the data, thinking the wrong information was captured. Evidently, the data was questioned because officials were unaware of the VCA participants. As one respondent clarified, "Since they are not involved in the VCA...they are not aware". They continued to explain that a lack of awareness of the VCA process caused BLGU officials to question how the data was collected.

Another respondent drew attention to how "...sometimes the people who did the VCA are not the same people sitting on the decision-making table...". In effect, their lack of involvement in capturing and analyzing the data will pose a challenge to convince them to accept this data. However, one respondent shared that once the data had been presented to BLGU officials, clarifying those involved in the process, "they are convinced that that data assessment is very useful to the barangay". The importance of involving BLGU officials during the VCA was emphasized given that they determine whether the data will inform their BDRRMPs. The respondent explained that the involvement of officials would allow them to hear the community share their experiences and know why conclusions were drawn. Therefore, "...it should be together, the community and the barangay officials as well".

Drawing on experiences from outside the Philippines, respondents noted challenges posed by perceptions of the qualitative nature of the data. As one respondent remarked, "...one of the things that sometimes happens is that people can...trivialize local data and it is not taken as seriously as it should be". However, the potential to quantify the data is a challenge, as one respondent questioned, "How do you quantify knowledge? Social support you are getting from your neighbours? How do you quantify marginalization?". The respondent shared that this challenge stems from the attempt to "convince politicians in an objective way", to for instance, prioritize certain interventions or areas over others.

8.1.2 Timely availability of the data

In order to be utilized, the data must be available in a timely manner. As several respondents spoke to the deadlines by which BLGU officials must produce certain materials, one respondent noted, "...sometimes our VCA activities do not coincide with the local planning calendar of the community". This results in missed opportunities for the community to carry out activities addressing existing needs to reduce their vulnerabilities and strengthen their capacities before the next disaster. As another respondent commented, "...what usually happens is we were not able to beat their timeline...at times they just make the plans, even without supporting documents". Noting that the barangay is not able to wait until the VCA is completed before, for instance, they submit their budget.

8.1.3 Maintaining up-to-date data

It is also important to ensure that the data used for preparedness planning is relevant. As one respondent argued, "...if you have the VCA but you still use a VCA data from ten years ago...you cannot identify the gaps that you already have". However, several respondents identified that the need for up-to-date information is challenged by the sustainability of the VCA process (and others like it). Reflecting on past experiences, one respondent shared they had not seen barangays continue the process of conducting a VCA. However, they remarked, "I think VCA is something that is alive, the context of the community keeps changing and they need to keep revising the status of their capacities and vulnerabilities". When asked why they believed the VCA was not being repeated, the respondent noted the potential that BLGU officials did not know how to conduct a VCA. Although the assessment had been conducted in their community, it was facilitated by an external organization, thereby making it difficult for officials to continue without being well-familiarized on how to conduct the assessment. While another respondent from one of the focus areas noted the lack of funding or manpower for the barangay to carry out the assessment. Nonetheless, one respondent stressed the need to continuously revisit the data, "The VCA [Report] should be a working document, should be a live document. So then that's the profile of your community...".

8.2 Challenges with the VCA process

Although not explicitly asked to reflect on challenges related to the VCA process, many respondents shared issues they experienced while gathering and analyzing the data. These challenges ranged from the ability to gather a representative group for the assessment, the

time of day that the VCA is conducted, the length of the process, and repetitiveness of data collection resulting in “burn out” amongst community members. However, multiple respondents emphasized challenges posed by the quality of the data analysis.

Several respondents noted data analysis as the main challenge with the VCA process, with one respondent commenting that this part of the process is “often weak”. Without a strong analysis, this could affect planning, as one respondent cautioned, “in a sense that it will not capture the right situation of the community, and thus will lead to incomplete or even wrong planning”. The final output of the VCA (the VCA Report) used to inform the BDRRMP and other preparedness planning efforts, also demonstrates the need for the data analysis to be better articulated within such outputs. One respondent shared their observations that, “...it is just a description of the tools, but there’s no analysis”.¹⁴ They explained that the analysis goes one step farther, to draw connections between the data analysis tools and how they work together to “better inform what is the real situation on the ground”. The necessity to strengthen and enhance the presentation of the data analysis was captured by one respondent,

A good assessment is the key to have a good plan, and then a good impact, a good result. The better it is, the more prepared they will be, the less they will suffer, the less they will lose, and I think exponentially, they will be able to grow.

In effect, the respondents demonstrated that strengthening the data analysis portion of the VCA process and clearly articulating its outcomes within the VCA Report will enhance the ability of the data to inform preparedness planning.

¹⁴ During a review of several VCA Reports from the focus areas, a description of the tools, rather than an analysis was also recognized.

9 Results: How the data should be used to inform preparedness planning

Moving beyond the noted challenges, the respondents suggested ways forward in the use of the data to inform preparedness planning.

9.1 Basis for preparedness planning

Although the respondents previously shared their inputs on the importance of using the data as a basis for preparedness planning, several respondents continued to stress this point. They commented on the ways that the data can be used to inform contingency planning, preparedness activities, identification of preparedness assets, equipment and preparedness-focused infrastructure actions; noting both core preparedness efforts, as well as interventions that can have a more long-term impact. As one respondent emphasized,

All this information comes from the VCA, it is the basis for everything you are defining. Everything you are doing, it needs to be based on the needs of the community and their capacities, their assets, their capacities available to do something about it and that is what the VCA is producing.

Another respondent drew connections between using this data as the basis of preparedness planning to more needs-based investments in preparedness. Thus, resulting in investments that are “...based on an actual analysis”.

9.1.1 Risk-informed planning

In effect, these uses of the data contribute to risk-informed planning. As one respondent noted, “I think the argument is very simple. Preparedness planning needs to be risk-informed and the VCA is a tool to do that”. In making this claim, they drew connections to the priorities of the Hyogo and Sendai frameworks and their emphasis on risk-informed planning (UNISDR, 2005; UNISDR, 2015). Another respondent spoke to risk-informed preparedness efforts that this data can help to guide, such as early warning early action and forecast-based financing (German Red Cross, 2017; IFRC, 2008a). Commenting that through influencing such measures, this can help to strengthen preparedness at the community level.

9.1.2 Household preparedness

One respondent indicated that the potential for the usage of this data is not only found at the wider level of community preparedness, but extends to the household level. They

emphasized the diversity of vulnerabilities and capacities across households, stating, “But even within the community there is variety, and from household to household there is difference”. Although one area in a community may experience the same vulnerabilities and be equipped with the same capacities, the situation within each household may be very diverse. Applying this data to household preparedness, the respondent noted, “That can help the household to address its own key gaps, key vulnerabilities and try to address those vulnerabilities, and take critical actions to reduce the risks”.

9.2 Accessibility to community members

Therefore, the data must be made available to all community members, with one respondent noting, “It should be used as an entry point to inform the community members”. After all, as they remarked, “Every human being, I think, has the right to be informed...”. They continued to note that this information can then be used to trigger action amongst community members, overcoming their view of themselves as “just a victim of circumstances”, unaware of what to do. Through informing people of their risks and vulnerabilities, this can help them to “...understand that they are not victims of circumstances, but that they could take measures in addressing their own vulnerability...”. For instance, one respondent shared they had witnessed some of the tools, such as maps, timelines and seasonal calendars, had been printed out and displayed in public community centres. The respondent emphasized how presenting the data in such an accessible, visible way can catch people’s attention, triggering discussions and raising their awareness of when and where they could be affected. An unforeseen benefit witnessed by another respondent is that community members begin to see that they are not alone and start organizing preparedness actions together. Ultimately, as one respondent stated, “...it comes back to how we started and the fact that we started to make people risk aware, explain it to them, about VCA, that you have vulnerabilities, but you also have capacities...”.

9.3 Data-sharing and collaboration

The potential for this information to be shared extends beyond local government officials and immediate beneficiaries. As one respondent pointed out, the information also needs to be shared with other actors in the area. This can include non-governmental organizations, municipal or also provincial governments. Based on their experience, the respondent noted that sharing this information is necessary, as such actors will create their own DRR plans or

contingency plans. This also includes the need for collaboration with neighbouring communities. Another respondent explained,

...the interesting thing about vulnerabilities is that at the community level it might be one thing, but you have to think of the bigger scale. Maybe your community is only part of the river stream at one point, but if you had a better connection with the communities upstream, you could do all of this river management preparedness work, which would reduce vulnerabilities downstream.

This demonstrates the need to improve the capacity to connect with neighbouring communities. A community is one part of a greater system, as the respondent noted, "...if you do not have the conversations with the communities upstream, whatever you do, if they are doing bad practices up there, you will get flooded at the bottom". Therefore, through sharing vulnerability and capacity data between communities, this can contribute to wider, more sustainable efforts for preparedness.

9.4 Wider utilization of the data

However, one respondent pointed out the purpose of preparedness planning. As they clarified, "It is just there to make sure that people are organized, that they have the resources to respond timely and effectively when they are hit by a disaster". In drawing this distinction, the respondent remarked, "preparedness does not really address the underlying factors and vulnerabilities". Nonetheless, although this can be said for preparedness, the respondent highlighted that the applicability of vulnerability and capacity data (in reference to the VCA), extends beyond preparedness interventions.

This belief was shared by a number of respondents. They recognized the possibility for this data to support measures across the entire disaster risk reduction management (DRRM) cycle and across sectors, including livelihoods and health, amongst others, pushing for stronger efforts to use the data for holistic solutions. Once again, many respondents stressed that such holistic solutions and DRRM approaches should be "deeply informed by community, by local knowledge, local understanding, focusing on building community ownership and engagement". As it is through community members and locally-sourced information that we gain access to most of the answers needed for holistic and sustainable solutions.

Therefore, as demonstrated by the respondents, this data offers numerous possibilities of ways forward to expand its influence, not only for preparedness. Although people may be better prepared to respond, they will still be affected by disasters. Thus, several respondents emphasized the need for vulnerability and capacity data to be applied more broadly to DRR, to not only better prepare to respond, but to pair this with efforts geared toward reducing current and future risks.

10 Discussion

The results of this research provide greater insight into how vulnerability and capacity data is used to inform preparedness planning. This is met with witnessed visible differences in the levels of preparedness within communities. The importance of using this data has been highlighted, emphasizing the need for evidence-based preparedness planning, an understanding and awareness of the context, as well as having the data come from community members themselves. Attention has also been placed on the process through which this data arises. However, it is evident that both the community-based process behind the data and the ability of local government officials to use the data for their planning efforts are met with challenges. Nonetheless, the respondents offered potential ways forward to strengthen the use of vulnerability and capacity data to inform preparedness planning.

Drawing connections with existing literature, the experiences of the practitioners will be further discussed. As previously indicated, the literature continues to emphasize the role of vulnerability in transforming natural hazards into disasters (Ashraf & Azad, 2015; Cannon, 2002, 2008; Dijkhorst & Vonhof, 2005; McEntire, 2011; Neumayer & Plumper, 2007; Twigg, 2014). Thus, indicating the need to be aware of the link between both natural and social factors to better understand disasters and take action based on existing capacities (Wisner et al., 2003).

10.1 Evidence-based preparedness planning

We cannot prepare if we do not know what we are preparing for or our current abilities that will enable us to prepare. As was noted during the interviews, local government officials cannot undertake preparedness planning without an understanding of the real situation in their community. Buckle (1998) shares this argument, insisting that in order to be effective in planning efforts there is a need for “a clear understanding of the phenomena with which they [disaster risk management practitioners] have to deal” (p. 21). During their research on CBDP in the Philippines, Allen (2006) also recognized this need for familiarity of the context, stressing that “successful implementation of CBDP requires an understanding of the communities involved” (p. 84). Developing an understanding of the context requires a deeper look into the many factors that contribute to the make-up of a community. As Buckle (1998) argues, “it is about understanding the relationships of environmental, political, social and economic forces that influence and shape the frequency, nature and location of

emergencies” (p. 21). Without this holistic understanding, this will prevent effective preparedness efforts from being developed (Buckle, 1998).

Several respondents stressed that before determining the specific measures required to prepare, the problems within the community need to be identified, as it is crucial to know what is necessary to prepare for. This aligns with what Perry & Lindell (2003) have outlined as the first of several guidelines of preparedness planning, “that it should be based upon accurate knowledge of the threat and of likely human responses” (p. 340). In order to gain a sense of how communities will respond, it is first necessary to be aware of the various means available to community members that can enable their response, such as the five capitals previously mentioned. IFRC (2016) takes this one step further in pushing for being equipped with data that highlights the underlying causes of the threats facing communities. Therefore, several of the respondents have argued that there is a need to work based off of the identified needs specific to each community. After all, in order for preparedness planning efforts to be effective, they must be tailored to the precise context and particular needs of the community, otherwise they will not be relevant. The importance of this has been showcased by Gil-Rvas & Kilmer (2016), who note the need for context-specific interventions, “An approach that proves effective in one community will not necessarily fit well in another context” (p. 1325). Essentially, there is no blueprint for preparedness. Buckle (1998) also stresses the need for preparedness planning efforts to be “designed to meet a particular need”, as well as noting the importance of targeted measures that are both precise and practical. The respondents noted that this prioritization of preparedness activities is an improvement from previously guessing the needs of the community. Not to mention, that this precision can result in relevant preparedness measures that make efficient use of limited existing resources.

10.2 Widespread applications of the data

Barangays in the Philippines have already been able to use vulnerability and capacity data resulting from VCAs to inform their BDRRMPs and contingency plans. Using this data as a basis for preparedness plans, many respondents pointed out that there have been visible differences between plans that have and have not been informed with data from a VCA. However, preparedness planning encompasses much more than writing plans, with several scholars noting the need to move beyond solely focusing on a plan (McConnell & Drennan, 2006; Quarantelli, 1977; Perry & Lindell, 2003). This sentiment was shared amongst the

respondents, who provided examples of additional widespread planning efforts they witnessed, such as using the data to inform budgets and access funding, create hazard, vulnerability and capacity maps, disseminate information, as well as develop programs aimed at sustainable livelihoods. These examples demonstrate that there are many ways that vulnerability and capacity data can be used to inform preparedness planning beyond influencing preparedness plans or contingency plans. After all, as noted within the Sendai Framework, “Effective disaster risk management contributes to sustainable development” (UNISDR, 2015, p. 9). In effect, CBDP interventions can be as diverse as ordinary preparedness planning efforts, with the added benefit of being contextually grounded, evidence-based and stemming from the lived experiences of community members.

10.3 The process behind the data

The impact of the data not only stems from the data itself. Rather, many respondents spoke to the importance of the process behind the data in contributing to visible differences in the level of preparedness witnessed within communities. With much of the literature focusing on the need to move beyond plans, Perry & Lindell (2003) argue that a focus on preparedness plans “tends to draw attention away from the process of planning itself and the original objective of achieving community emergency preparedness” (p. 336). These sentiments were highlighted by the respondents, remarking that the importance of the data derives from its source – the community members, and their engagement and ownership of the VCA process. As Kangabam et al. (2012) also point out, with community members as victims of disasters, “They have the best knowledge about their local surroundings” (p. 1634). Therefore, in order for vulnerability and capacity data to be used to inform preparedness planning, the way that this data is gathered is also highly important. As one respondent noted with regards to the VCA process, “It is not whether you do a VCA, but how you do a VCA”. The added-value of community-based data stems from the data coming from a process that the community members themselves are engaged in, hopefully owning, and sharing their experiences. If this data is collected without the involvement of community members, then it will not hold the same effects. Thus, in order to ensure that vulnerability and capacity data is most beneficial to strengthening preparedness planning, attention must also be paid to the process it derives from, which should ultimately be rooted in community-based disaster preparedness.

10.4 The need for up-to-date data

However, even if this data is available, its value is largely held within its relevance. That being said, there is a need for maintaining up-to-date data, as many of the respondents noted. In effect, both the product of the VCA (the VCA Report) and the preparedness plans of barangays, should be seen as live documents. Perry & Lindell (2003) draw attention to the need to recognize preparedness plans as living documents, to be updated as communities experience changes in risk and the ability to manage risk. As there are ongoing changes witnessed within vulnerability, capacities, staffing, as well as equipment, the data should be updated along with these changes (Perry & Lindell, 2003). The importance of being able to identify gaps present within existing capacities was also noted by several respondents, pointing out that this requires an awareness of the current status of capacities.

Therefore, preparedness planning and the act of drafting preparedness plans should not be seen as a one-off event or a “finished product”, but a “continuous process” (Alexander, 2002; Dynes et al., 1981). However, several respondents emphasized that regularly updating the data is a challenge to put into practice. Without receiving direct training on how to conduct the VCA and with an external organization facilitating the process, BLGU officials were unable to carry out the assessment. Other contributing factors to this challenge were noted to include a lack of funding or manpower at the barangay level. Nonetheless, updating this data is necessary to maintain and also strengthen preparedness efforts (Buckle et al., 2000; Perry & Lindell, 2003). Thus, the literature suggests the need for regular, systematic reviews of preparedness plans and planning efforts (Alexander, 2005; Perry & Lindell, 2003).

10.5 Trusting the data

Although much of the literature does not address the challenge of trust in the data by local government officials, this was revealed by several respondents. Local government officials are the decision-makers determining how to use vulnerability and capacity data and how to prepare. Most notably, they can also decide whether this information is used at all. Allen (2006) also recognized this challenge during their research in the Philippines, drawing on case studies emphasizing the role of politics in challenging CBDP. As they witnessed, some BLGU officials questioned the validity of the data depending on who was involved during the assessment, due to an assumed lack of neutrality (Allen, 2006). Simply put, if local government officials do not trust the data, they will not use it. Thereby preventing community-based data from informing preparedness plans and other planning efforts.

Although, as several respondents noted, once BLGU officials were made aware that other barangay officials were involved in the process and that the data had been presented to them, or that they were able to verify the information for themselves, they then approved the usage of the data. Therefore, this highlights the need for local government officials to be present during the assessment process to garner their trust and support, thereby limiting hurdles to community-based preparedness planning.

10.6 Sharing the data

In moving forward beyond the challenges to using this data, it is not only local government officials who should have an understanding of the vulnerabilities and capacities pertaining to their community. The wider community members, beyond those who have participated in the VCA process, should also be made aware of their vulnerabilities and capacities and have access to this data. As was noted by one respondent, access to this data can trigger actions amongst community members. This can help to transform their sense of being a helpless victim into a recognition of their potential as an agent of their own preparedness and the preparedness of their community.

As Alexander (2002) points out with regards to preparedness plans, this data should be shared with those who “most need to know about it: those who will participate directly as emergency workers and those likely to be otherwise affected, either directly or indirectly, when it is put into operation” (p. 128). In an effort to make this data more accessible to the public, the respondents explained that some of the VCA tools (maps, timelines, seasonal calendars, etc.) were printed and publicly displayed. In essence, relying on one means of disseminating this information (i.e. through a preparedness plan) is not a sufficient approach to sharing this data with the community (Alexander, 2002). If we are engaging in CDBP, then the entire process must be centred around the community, including providing this information directly to community members so they can take their own actions to prepare.

As mentioned above, Alexander (2002) also argues that the data should be shared with emergency workers. This touches upon the need for this data to be provided to actors engaging in response operations, as was also noted by one of the respondents. The respondent emphasized that understanding the vulnerabilities and capacities within communities would enable response actors to offer better support for the specific context through a well-designed response. The literature emphasizes the appropriateness of response operations and basing those efforts upon correct and complete information (Perry

& Lindell, 2003). As Troy et al. (2008) stress, “In any crisis, the ability to retrieve accurate information quickly is critical to assessing and responding to the situation” (p. 149). In effect, for response actors to tailor their efforts to the given community, access to this data is essential. Doing so will enable a more appropriate response, and the potential for more long-term thinking to be applied to response operations, continuing into recovery. For instance, the respondent noted typical interventions undertaken during response operations (shelter, WASH, etc.), but that this may differ from the core issues and needs present within the community. Therefore, without an understanding of the context that includes an awareness of existing vulnerabilities and capacities, there is the potential for response operations to ignore, or even worse, exacerbate existing vulnerabilities within the community. Rather, response and recovery efforts should be aimed to “build back better” (UNISDR, 2015).

10.7 Scaling up beyond the local level

The potential for sharing this data and the awareness and understanding that it brings for preparedness planning extends beyond the local level. Not only is this possible, but there is a need to spread awareness-raising beyond the local community (Allen, 2006). Several respondents noted the importance of data-sharing to municipal and provincial levels, as well as neighbouring communities and other organizations operating within the same community. This calls for broader thinking of how communities are impacted by disasters and the actions that can be taken beyond their community to reduce that impact. Going back to a systems-based approach, recognizing that the barangay or village is part of a much larger system, this includes larger communities and other actors at higher levels whose actions can impact how communities function locally. Through sharing this data beyond the local level, this can also assist communities in garnering support for preparedness planning efforts that are beyond their means, whether financial or otherwise (van Aalst et al., 2008). For instance, van Aalst et al. (2008), provide the example of the need for structural changes to the quality and construction of buildings to reduce the risk of being impacted by hazards such as earthquakes. As well, through sharing this data with other organizations operating in the same community, this can help to ease the burden of overlapping efforts.

Thus, it is important to recognize that improving access to the data that is informing preparedness planning should extend beyond the local community. This data should be

shared widely in an attempt to further enhance local efforts through harnessing additional support. At the same time, this can enable gaps in capacity to be filled through working together with actors outside of the community who have the means to share their knowledge and resources and assist in strengthening existing capacities. Having said this, potential challenges associated with aggregating this data to higher administrative levels should not go unnoticed. This can range from varying forms of presenting the data and difficulty in drawing comparisons of risks across communities, to safeguarding sensitive information, amongst others (Månsson, 2018; Månsson et al., 2015).

10.8 Applicability beyond the Philippines

Although this research has been carried out through focusing on a case study of the Philippines and the experiences of BLGUs, the findings and their relevance extend to other countries engaging in CDBP and those yet to engage in such a form of preparedness planning. Recognizing this requires an acceptance of the reality that the practice of analyzing vulnerabilities and capacities is relevant within countries across the globe (Cannon, 1994). Rather, such analyses are not only able to find use within countries, such as the Philippines, that are traditionally referred to as “vulnerable”, “developing” or encompassing the “third world” – while hesitating to draw such distinctions in labels and categorizations. As Cannon (1994) remarks with a specific focus on economic factors, individuals who find themselves in vulnerable situations to natural hazards also exist in “industrialized countries” and are not absent from such countries that fall under this label.

Of course, there are distinctions to be made across the globe regarding the severity of vulnerability, the capacity of local governments to efficiently undertake preparedness planning, as well as varying levels of capacities of communities within the same country. Nonetheless, Cannon (1994) argues that this does not “prevent the application of the same sort of analysis to discover who and which groups are vulnerable even in the wealthiest parts of the world” (p. 27). Nor does it take away from, as one respondent noted, that every human being has the right to be informed. Ultimately, communities cannot be blanketed as being entirely vulnerable, as this disregards the changing circumstances they find themselves within, as well as that vulnerability is related to a scenario or a specific type of natural hazard. Across the world, there are communities with capacities and capable individuals, despite existing vulnerabilities and vulnerable conditions. In these cases, the awareness and

use of vulnerability and capacity data can strengthen their community-based preparedness planning efforts.

11 Recommendations

It is evident that vulnerability and capacity data is necessary and highly useful to producing well-informed, context-specific preparedness planning efforts. Nonetheless, there are apparent challenges to the use and wider application of this data. The following recommendations serve to strengthen the ability of local government officials to inform preparedness planning with vulnerability and capacity data, not only in the short-term, but to render the usage of the data to be sustainable.

11.1 Reflecting data analysis within reporting

When provided to local government officials, the data should be clear and straight forward so that it can be used. However, respondents witnessed a weak articulation of the data analysis within VCA Reports, often representing a description of the tools used, rather than a deeper analysis of risks, vulnerabilities and capacities. Therefore, local staff and other actors involved in the report writing process need better support to equip them with the knowledge and skills to simplify the results of the data analysis and put these it into writing. In doing so, this will ease the ability of local government officials to identify the root causes of vulnerability within their communities, as well as any gaps within capacities that need to be filled to address present challenges.

11.2 Timely availability of the data

In some cases, the timing of the availability of the data limited it from being used to inform preparedness planning. Several respondents pointed out that the VCA could not be completed within the timeframe of local government planning processes and budgeting, resulting in planning efforts made without supporting documentation. Practitioners facilitating such assessments should be familiarized with the planning schedules of the local government. These actors should work together to align their schedules and develop a realistic timeline for assessments to be conducted. Solutions proposed by community members can then be transformed into tangible actions put in place by their local government to strengthen preparedness.

11.3 Fostering trust in the data

Once clearly presented to local government officials in a timely manner, the data must be accepted before it can inform preparedness planning. In some cases, officials question the validity of the data, largely because they were not involved in the assessment. There are

valid reasons for assessment processes, such as the VCA, to solely involve community members, separate of officials. This can create a more open space for the honest sharing of experiences and proposed solutions; the value of this is not being disputed. However, local government officials are also part of the community, with benefits to involving them in this process. As well, the VCA process needs to be sensitized to local governments (IFRC, 2007). Ultimately, these are the decision-makers who will be holding the pen, writing preparedness plans and approving preparedness efforts. Therefore, the facilitators of such assessments should advocate for including local government officials within the process. This is easier said than done in highly politicized contexts, however, it has been noted that “this led to a more effective VCA, with real cooperation and understanding” (IFRC, 2007, p. 41).

11.4 Enhancing the sustainability of data usage

The data is meant to be up-to-date, capturing changing vulnerabilities and capacities, and the assessment process should continue beyond the lifespan of an organization’s project. Therefore, maintaining both the data and the process should be sustainable. Ideally, this process should be carried out by local government officials to avoid dependency on external actors. However, realistically, due to their expertise and neutrality, there may be a need for outside support. Nonetheless, local government officials should be trained on how to conduct such assessments and be provided with necessary materials to do so. This will allow the assessment process to continue over time, ensuring up-to-date data.

11.5 Data sharing and scaling up

In order to harness the full potential of vulnerability and capacity data, it should be shared beyond the local community. Sharing this data with neighbouring communities and higher levels of government can trigger additional support for preparedness planning efforts. As the community and additional actors exist within and are connected by a broader system, providing this data can result in actions that contribute to DRR for the community. This data is also beneficial to response operations, to tailor interventions to the specific needs of affected communities, while avoiding a duplication of efforts by other actors and those previously carried out within the community during past disasters. As well, sharing the data can enhance the potential for response measures to contribute to more long-term development outcomes. Therefore, greater efforts should be made to scale up vulnerability and capacity data so that it is accessible to actors beyond the local community.

12 Areas for further research

As mentioned by the respondents, the potential for this data extends beyond preparedness. Vulnerability and capacity data has the potential to impact more widely across the entire DRRM cycle, contributing to DRR. Although the focus of this research is on the use of vulnerability and capacity data to inform preparedness planning, it is understood that this data is not only suitable for preparedness. There is the potential for vulnerability and capacity data to inform and trigger mitigation measures and preventative actions as well. Ultimately, the purpose of DRRM is not only to equip communities to better prepare for an impending disaster. If sustainable changes are to be made, there must be a wider focus on DRR. The ability of vulnerability and capacity data to inform DRR interventions is thus recommended as an area for further research.

13 Conclusions

Ultimately, there are many ways that vulnerability and capacity data can be used to inform preparedness planning. For instance, the use of this data to inform preparedness plans has resulted in more focused and structured plans. The data also supports local government officials in creating their budgets, accessing additional funding, mapping hazards, vulnerabilities and capacities, disseminating information to community members and program development, such as sustainable livelihoods programming. Extending beyond the local government, this data is also useful to other actors within the community, including response actors, and can be scaled up to higher levels of government.

The use of this data has already witnessed success as a contributing factor to strengthening preparedness. However, this has been met with several challenges, including: a weak articulation of the data analysis within reporting; misalignment between the availability of the data and the timelines of local government planning; local government officials questioning the validity of the data; and, the need for up-to-date data. Therefore, in moving forward, it is recommended to: reflect data analysis within reporting; provide the data to local government officials in a timely manner; foster trust in the data amongst local government officials; share the data to other relevant actors and higher levels of government; and, make the data accessible to community members. These actions can further enhance the ways in which vulnerability and capacity data can be used to inform preparedness planning.

As it has been argued, preparedness planning is a process. During each stage, community members must be involved. The ongoing nature of this process is a result of the ever-changing situation within communities, including the vulnerabilities and capacities of community members. In effect, local government officials need timely context-specific data to produce relevant preparedness plans and measures. A key means to achieving this relevance is informing preparedness planning based on data that originates directly from the community. After all, community members are the most well-versed in the reality of their own context. Not to mention, people deserve to be agents of their own preparedness. Community members cannot be treated as helpless victims, or this will leave them unable to take their preparedness into their own hands. Therefore, we need to recognize that community members have capacities, they have knowledge and insights and the lived experiences that can inform preparedness efforts. Enabling community members to have a

voice and play an active role alongside their governments in preparedness planning can lead local government officials to ensure that more sustainable preparedness measures are taken, with wider contributions to overall DRR.

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15 Appendices

Appendix A: Interview guide for practitioners, Red Cross 143 and teachers

The following Interview Guide was utilized during the interviews with practitioners from the Philippine Red Cross and IFRC, as well as the RC143 representatives and teachers from the focus areas.



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Stefanie Eleanor Di Domenico
Msc Candidate Disaster Risk Management and Climate Change Adaptation

Degree Project

Interview Guide

The Degree Project serves as the final demonstration of the application of the knowledge acquired during the *Master's of Science in Disaster Risk Management and Climate Change Adaptation* programme.

Unit of analysis: The application of Vulnerability and Capacity Assessments (VCAs) in the Philippines.

Focus: The focus of the interviews will be ***to explore how data regarding the vulnerability and capacity of communities can be used to inform preparedness planning to better prepare to respond and recover from the impacts of natural hazards.***

Usage of data: The resulting information from the following semi-structured interview questions will be used to inform the Degree Project.

Prior to the interview questions, there will be an opportunity for the interviewee to ask any questions that they may have concerning the research.

Interview questions

The following semi-structured questions will be asked to the interviewees. Additional follow-up questions beyond those listed below may also be posed to the interviewees, building on the responses provided.

- How does vulnerability within a community impact that community's ability to prepare for a natural hazard?
- How does the capacity of a community impact their ability to prepare for a natural hazard?
- Do you think it is important to use vulnerability and capacity data to inform preparedness planning?
 - Why do you think it is important to use this data to inform preparedness planning?
- Is the data resulting from VCAs currently being used to inform preparedness planning?
 - How is the data being used?
- Are there any challenges to using vulnerability and capacity data to inform preparedness planning?
 - What are the challenges?
 - How do you think this should be done?
- Are there visible differences in the level of preparedness to respond and recover of communities after a VCA has been conducted and changes were made to the local government's preparedness plan or contingency plans?

Opportunity for the interviewee to ask any questions that they may have concerning the research.

Appendix B: Interview guide for barangay officials

The following Interview Guide was utilized during the interviews with members of the BDRRMC within the focus areas.



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Stefanie Eleanor Di Domenico
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Degree Project

Interview Guide: Barangay Officials

The Degree Project serves as the final demonstration of the application of the knowledge acquired during the *Master's of Science in Disaster Risk Management and Climate Change Adaptation* programme.

Unit of analysis: The application of Vulnerability and Capacity Assessments (VCAs) in the Philippines.

Focus: The focus of the interviews will be ***to explore how data regarding the vulnerability and capacity of communities can be used to inform preparedness planning to better prepare to respond and recover from the impacts of natural hazards.***

Usage of data: The resulting information from the following semi-structured interview questions will be used to inform the Degree Project.

Prior to the interview questions, there will be an opportunity for the interviewee to ask any questions that they may have concerning the research.

Interview questions

The following semi-structured questions will be asked to the interviewees. Additional follow-up questions beyond those listed below may also be posed to the interviewees, building on the responses provided.

- How does vulnerability within a community impact that community's ability to prepare for a natural hazard?
- How does the capacity of a community impact their ability to prepare for a natural hazard?
- Do you think it is important to use vulnerability and capacity data to inform preparedness planning?
 - Why do you think it is important to use this data to inform preparedness planning?
- Does your office have access to the data resulting from VCAs conducted in your Barangay?
 - How is this data provided to your office?
- Is the data resulting from VCAs currently being used to inform preparedness planning?
Probing: Other methods of assessment where vulnerability and capacity data is collected.
 - How is the data being used?
- Are there any challenges to using vulnerability and capacity data to inform preparedness planning?
 - What are the challenges?
 - How do you think vulnerability and capacity data should be used to better support preparedness planning in your Barangay?
- Are there visible differences in the level of preparedness to respond and recover of communities after a VCA has been conducted and changes were made to the BDRRMP based on the VCA?
- Could you provide a copy of a BDRRM Plan from before a VCA was conducted and a copy from after a VCA was conducted?

Opportunity for the interviewee to ask any questions that they may have concerning the research.

Appendix C: Interview guide for Community-based Health and First Aid practitioner

The following Interview Guide was utilized during the interview with the practitioner working within the Community-Based Health and First Aid (CBHFA) approach.



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Stefanie Eleanor Di Domenico
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Degree Project

Interview Guide: Community-Based Health and First Aid Practitioner

The Degree Project serves as the final demonstration of the application of the knowledge acquired during the *Master's of Science in Disaster Risk Management and Climate Change Adaptation* programme.

Unit of analysis: The application of Vulnerability and Capacity Assessments (VCAs) in the Philippines.

Focus: The focus of the interviews will be ***to explore how data regarding the vulnerability and capacity of communities can be used to inform preparedness planning to better prepare to respond and recover from the impacts of natural hazards.***

Usage of data: The resulting information from the following semi-structured interview questions will be used to inform the Degree Project.

Prior to the interview questions, there will be an opportunity for the interviewee to ask any questions that they may have concerning the research.

Interview questions

The following semi-structured questions will be asked to the interviewees. Additional follow-up questions beyond those listed below may also be posed to the interviewees, building on the responses provided.

- How does vulnerability within a community impact that community's ability to prepare for a natural hazard?
- How does the capacity of a community impact their ability to prepare for a natural hazard?
- Do you think it is important to use vulnerability and capacity data to inform preparedness planning?
 - Why do you think it is important to use this data to inform preparedness planning?
- Aside from the VCA, the health projects use the CBHFA. Could you explain what is involved in this assessment?
 - Does the CBHFA collect data on the vulnerability and capacity of communities?
- Is the data resulting from CBHFAs currently being used to inform preparedness planning?
 - How is the data being used?
- Are there any challenges to using vulnerability and capacity data to inform preparedness planning?
 - What are the challenges?
 - How do you think this should be done?
- Are there visible differences in the level of preparedness to respond and recover of communities after a CBHFA has been conducted and changes were made to the local government's BDRRMP or contingency plans?

Opportunity for the interviewee to ask any questions that they may have concerning the research.

Appendix D: Informed consent form



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Stefanie Eleanor Di Domenico
Msc Candidate, Disaster Risk Management and Climate Change Adaptation

Degree Project
Informed Consent Form

Thank you for your interest and willingness to participate in this research contributing to explore **how data regarding the vulnerability and capacity of communities can be used to inform preparedness planning to better prepare to respond and recover from the impacts of natural hazards**. The Degree Project serves as the final demonstration of the application of the knowledge acquired during the *Master's of Science in Disaster Risk Management and Climate Change Adaptation* programme at Lund University, Sweden.

Participating in this research involves attending an interview and providing responses to the presented interview questions. The semi-structured interview is expected to take approximately 30 minutes. During the interview, the responses will be recorded, with your consent. The information will then be transcribed and analyzed to inform the final report of the Degree Project. With your permission, your position will be included in the final report of the Degree Project.

If you have any questions, please feel free to contact me directly. You can withdraw from the interview at any time.

Stefanie Eleanor Di Domenico
Msc. Candidate, Disaster Risk Management and Climate Change Adaptation
Lund University
st5806di-s@student.lu.se

I, _____ (First Name and Last Name) hereby voluntarily agree to participate in the interview and research for the purpose of the Degree Project.

Please select the following statements which you agree to:

- I agree to have the interview recorded.
- I agree to the use of my position title in the final report.

Signature: _____ Date: _____

Appendix E: Breakdown of respondents

