VIEWS FROM
THE FRONTLINE REPORT

A case study of Petone,
Lower Hutt, Wellington Region

VIEWS FROM THE FRONTLINE REPORT

New Zealand

A case study of Onerahi, Whangarei, Northland

June 2020

Contents

I. Views from the Frontline - Project Background and Approach

Project background

The Views from the Frontline (VFL) programme was initiated by the Global Network of Civil Society Organisations for Disaster Reduction (GNDR)[1] in 2009 to highlight the views from the most vulnerable and marginalised populations. This programme empowered local actors to monitor progress against targets under the Hyogo Framework for Action (HFA) through quantitative and qualitative surveys. This community consultation process is conducted at regular intervals of two years. Since 2014, GNDR shifted their approach, from closed questions measuring the progress of the HFA targets to more open-ended questions regarding their priority threats, consequences of those threats, the actions needed, and the barriers in reducing risks from the perspectives of local actors. This new approach highlighted everyday disasters, which are small scale, recurrent, and result not only from natural hazards but also social, economic and political threats.

The aim of VFL 2019 was to strengthen the inclusion and collaboration between at-risk people, civil society and governments in the design and implementation of policies and practices to reduce disaster risks and strengthen resilience. Through surveys and consultations with local communities, local civil society organisations and the local government authorities, it collects diverse perspectives around three key themes: risk profile, inclusiveness, and enabling environment (Fig. 1).

Figure 1. Themes of investigation (GNDR 2018)

While local voices from the less wealthy countries were raised in the previous VFL programmes, this is not the case for more affluent countries. Thus, the VFL team, through the University of Auckland, wanted to pilot the VFL programme in New Zealand. This will place a foundation for expanding this

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[1] Global Network of Civil Society Organisations for Disaster Reduction (GNDR) is the largest International Network of organisations committed to working together to improve the lives of people affected by disasters

VFL programme to more affluent countries, and accordingly, increase the chance for the local voices to be heard. As a pilot project, the GNDR approach was adjusted and conducted on a smaller scale in New Zealand.

Process of implementation

The project was implemented in four locations: Onerahi (Whangarei, Northland), Maraenui (Napier, Hawkes Bay), Petone (Lower Hutt, Wellington), and Haast (Westland, West Coast). The project team collaborated with the focal points of the four partners, Civil Defence and Emergency Management (CDEM) groups to carry out the field data collection activities using the VLF standard questionnaires for households, government staff, civil society organisation staff, and community[2] consultation. These questionnaires were adapted to fit with the local contexts and the participants' background. The CDEM groups' support included contacting and inviting participants for interviews and the organisation of group consultation meetings.

In Petone (Fig. 2), the project team carried out household interviews over the phone or online surveys. The online household survey link was then posted on the Facebook group page of Petone community with the support of the partner CDEM Group. The total number of responses received is 48 (Table 1). Furthermore, face-to-face and phone interviews were conducted with 9 representatives of stakeholders (from both government and non-government sectors) operating at different levels, from the local to regional. The group meeting in Petone was not held due to the unavailability of the invited participants. To overcome this challenge, the project team made an online survey with the group consultation questions and asked the head of Petone community board for sending this link to 10 key informants in Petone. Three responses were received.

Activity	Number of participants	Time
Household survey	48 (11 males, 32 females and 5 others)	March – June 2019
Interviews with stakeholders	9 (4 males and 5 females) (5 participants from regional and district councils and CDEM offices and 4 participants from Salvation Army, Red Cross, community board, and Volunteer Hutt)	March – June 2019

Table 1. Numbers of participants and time of the project activities in Onerahi

Given the small number of the participants in this project location, this study had some limitations in capturing the diverse perspectives of the study community. The data from all of the interviews, surveys and consultation were entered to the online database of the Global Network of Civil Society Organisations for Disaster Reduction (GNDR) for analysis. To explore the VFL data of New Zealand, please go to this website: https://vfl.world/explore-vfl-data/.

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[2] 'Community' in this report is defined as a group of people living in the same place or having a particular characteristic in common (GNDR, 2018)
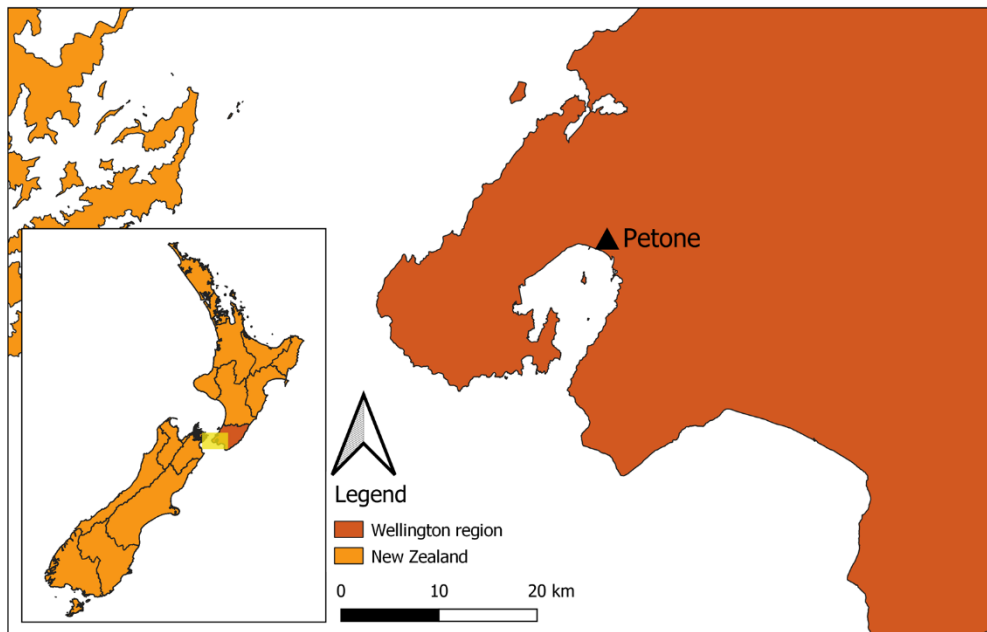
Figure 2. The location map of the study area

II. Results

1. Threats, consequences, actions and barriers

The assessment explored people's perception of the threats that confront them; the consequences of these threats; the actions to address the threats and consequences; and the barriers that hinder the implementation of actions. The threats explored in this study are not limited to environmental ones but include economic, social and political ones. According to the respondents from the participating government organisations (GOs) and civil society organisations (CSOs), natural hazards, including earthquakes, floods, storms and tsunamis, were the major concerns of the people in Lower Hutt (Fig. 3). The other threats raised by the participants are epidemics, fire, isolation, violence, and poverty.
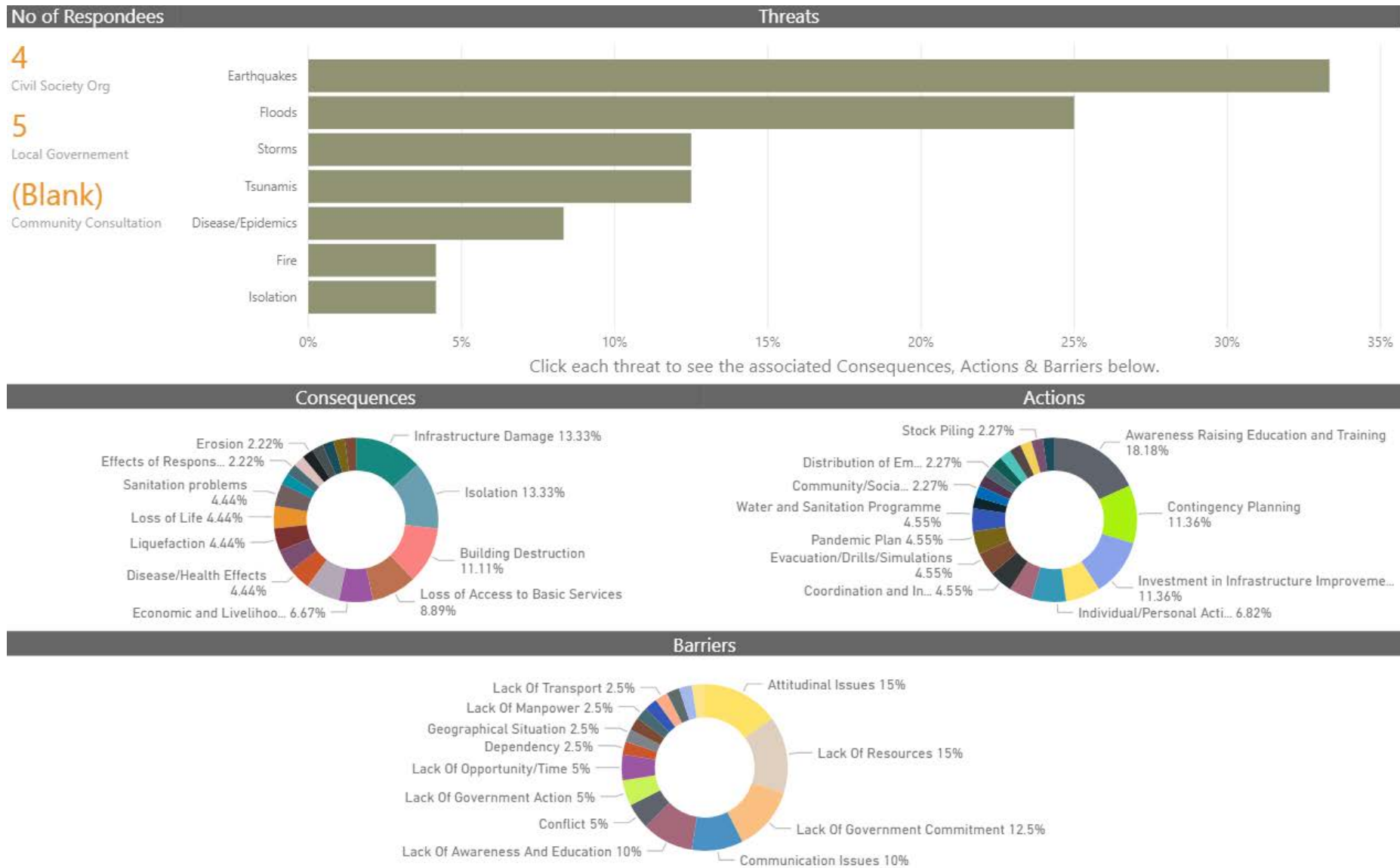
No of Respondees

4
Civil Society Org

5
Local Governement

(Blank)
Community Consultation

Threats

Earthquakes
Floods
Storms
Tsunamis
Disease/Epidemics
Fire
Isolation

Click each threat to see the associated Consequences, Actions & Barriers below.

Consequences

Infrastructure Damage 13.33%
Isolation 13.33%
Building Destruction 11.11%
Loss of Access to Basic Services 8.89%
Economic and Livelihoo... 6.67%
Disease/Health Effects 4.44%
Liquefaction 4.44%
Loss of Life 4.44%
Sanitation problems 4.44%
Effects of Respons... 2.22%
Erosion 2.22%

Actions

Stock Piling 2.27%
Distribution of Em... 2.27%
Community/Socia... 2.27%
Water and Sanitation Programme 4.55%
Pandemic Plan 4.55%
Evacuation/Drills/Simulations 4.55%
Coordination and In... 4.55%
Awareness Raising Education and Training 18.18%
Contingency Planning 11.36%
Investment in Infrastructure Improveme... 11.36%
Individual/Personal Acti... 6.82%

Barriers

Lack Of Transport 2.5%
Lack Of Manpower 2.5%
Geographical Situation 2.5%
Dependency 2.5%
Lack Of Opportunity/Time 5%
Lack Of Government Action 5%
Conflict 5%
Lack Of Awareness And Education 10%
Attitudinal Issues 15%
Lack Of Resources 15%
Lack Of Government Commitment 12.5%
Communication Issues 10%

Figure 3. Threats, consequences, actions and barriers in Lower Hutt

Earthquakes

Earthquakes are one of the most concerning hazards in Lower Hutt. The significant impacts of this hazard on this area, reported by the GO and CSO participants, are isolation (22%), infrastructure damage (17%), building destruction (13%) and loss of access to basic services (e.g. telecommunications, transport, energy, and water) (13%) (Fig. 4). The participants explained that earthquakes destroy the local infrastructure and accordingly lead to disruptions in providing lifeline services (e.g. water, power, transport, and communication) to people as well as in local people's daily activities. In addition, the destruction of road networks would place many communities in isolation for months, depending on the severity of the earthquake.

In Petone, a GO participant noted that there are several old buildings and basic services (e.g. water and power) in need of an upgrade. Thus, the impacts on this infrastructure may be huge. Various participants described the Greater Wellington region as having 'seven islands' as each subregion would be unreachable if the only main road is cut off. For the Hutt Valley, using boats to get resources in and out of the area would be the feasible choice. However, this will be hard if the wharves are damaged. The local government planned to set up a medical triage system which prioritises tending to people with life-threatening issues first. Few participants also raised their concerns about secondary hazards following an earthquake such as liquefaction and fires. In addition to physical impacts in times of earthquakes, few participants noted that mental health issues are foreseeable as people may have to deal with huge losses and hardships after an earthquake. Other impacts that the participants raised are economic and livelihood loss, loss of life, and loss of assets.

The participants proposed a range of actions for reducing the risk of earthquakes (Fig. 4). The top priority actions suggested are having emergency plans (25%), raising people's risk awareness (12%), and implementing water and sanitation programmes for affected communities (12%). Given the high risk of earthquakes in Wellington, the CDEM group had a separate response plan for earthquakes. At the community level, the CDEM group has been supporting local communities and businesses to develop community response plans and business continuity plans. Some participants suggested that local organisations should also have an emergency plan, which provides support to their communities where possible. Another action suggested is that local people should be provided with information of how to respond to disasters within their community (e.g. where to go and what to do) and encourage them to have a plan for their own family. Given the possible scenario of the aftermaths of an earthquake such as no water and sewage system for a long time, few participants emphasised having a plan and arrangements for water and sanitation issues in place.

Some participants considered promoting community self-management and coordination between government and non-government actors as important DRR actions. In terms of community self-management, the CDEM group has been promoting community response planning and building community emergency hubs - places for the community members to coordinate and help themselves during and after a disaster. In the community response planning, community members organise a meeting to discuss hazards, resources, capacities, and make the plans of how they reduce the identified risk (e.g. community help in an evacuation, neighbourhood support, the operation of the hub). Given some contributions of local CSOs to reducing disaster risk (e.g. in raising people's risk awareness, enhancing community connection, or supporting recovery processes), few participants raised a need to strengthen the collaboration between the government and non-government organisations. Others actions suggested are a distribution of emergency equipment and survival kits to affected people, investment in infrastructure (e.g. upgrading or retrofitting reservoir and pipes, building, and key councils assets for response), monitoring the regulations (e.g. giving consents to investment projects that may raise threats or risks for local communities), and programmes for poverty reduction. Considering the possibility of long isolation after an earthquake, few participants

recommended stockpiling not only for the local government (e.g. response equipment in place) but also for local people (e.g. having enough food, water and other essential items for up to 7 days).

The top barriers that hindered the implementation of DRR actions are local people's attitude toward disasters (31%) and lack of resources (mainly funding) (31%) (Fig. 4). Many participants believed that people's attitude (such as "it'll be alright", and thus not considering disaster preparedness seriously) and reliance on the CDEM group (e.g. thinking that the CDEM group will come and save them) greatly prevented people from taking preparedness actions for themselves and their family. This attitude was also associated with the denial of the possible risk (e.g. believing the CDEM group is making things up or trying to scare people). A GO participant commented that, for local residents who experienced or heard of a disaster before, because their memories are fading over time, they may become less proactive in getting prepared for disasters.

In addition, few participants noted that a lot of low-income people are living in Petone. Many of them live in social housing and rely heavily on social services and public transport. These families, especially the homeless, may not have sufficient resources to take preparedness actions (e.g. reserving food and water for 7 days) as well as to recover from a disaster. Another barrier was that the local government has limitations on resources (e.g. to replace or reinforce the old infrastructure). Some participants also reported conflicts in funding allocation in the local government, whether investing more funds to resolve everyday problems (e.g. homelessness, education, health care) of their residents or to prepare for hazards that may not happen in the future. Indeed, this is also the case for under-resourced people. Lack of resources often makes them choose to invest their resources in dealing with their daily living problems rather than with rare and uncertain risks.

Other barriers from local people's perspective are people's lack of risk awareness and preparedness, and from the government standpoint, are lack of government commitment, manpower, and time. Few participants recognised that the population in Petone is quite transient. Therefore, newcomers or short-term residents may not know the local risks well. Some people who experienced a disaster in other places may feel over-confident, thinking that they survived through the disasters and therefore believing that they can make it again if such disasters happen again. It is noted, however, that as they live in different contexts, their knowledge of the previous disasters may not help. As a lot of people who do not speak English, have a low literacy level and limited access to the internet are living in Petone, some participants acknowledged that providing risk knowledge to those groups of people is a big challenge. A GO participant noted that while the local government recommends people to reserve water and food for up to 7 days, the rate of people following this recommendation remains low (only 22%). Yet, he believed that recent efforts of the CDEM group in risk communication (e.g. earthquake planning guides distributed to every residential property) can make people more aware and more prepared for earthquakes. A GO participant also noted that interest in the work of CDEM and disaster preparedness activities would increase if an even was to happen in another part of the country (e.g. Christchurch 2011 Earthquake) but this attention would quickly die down again.
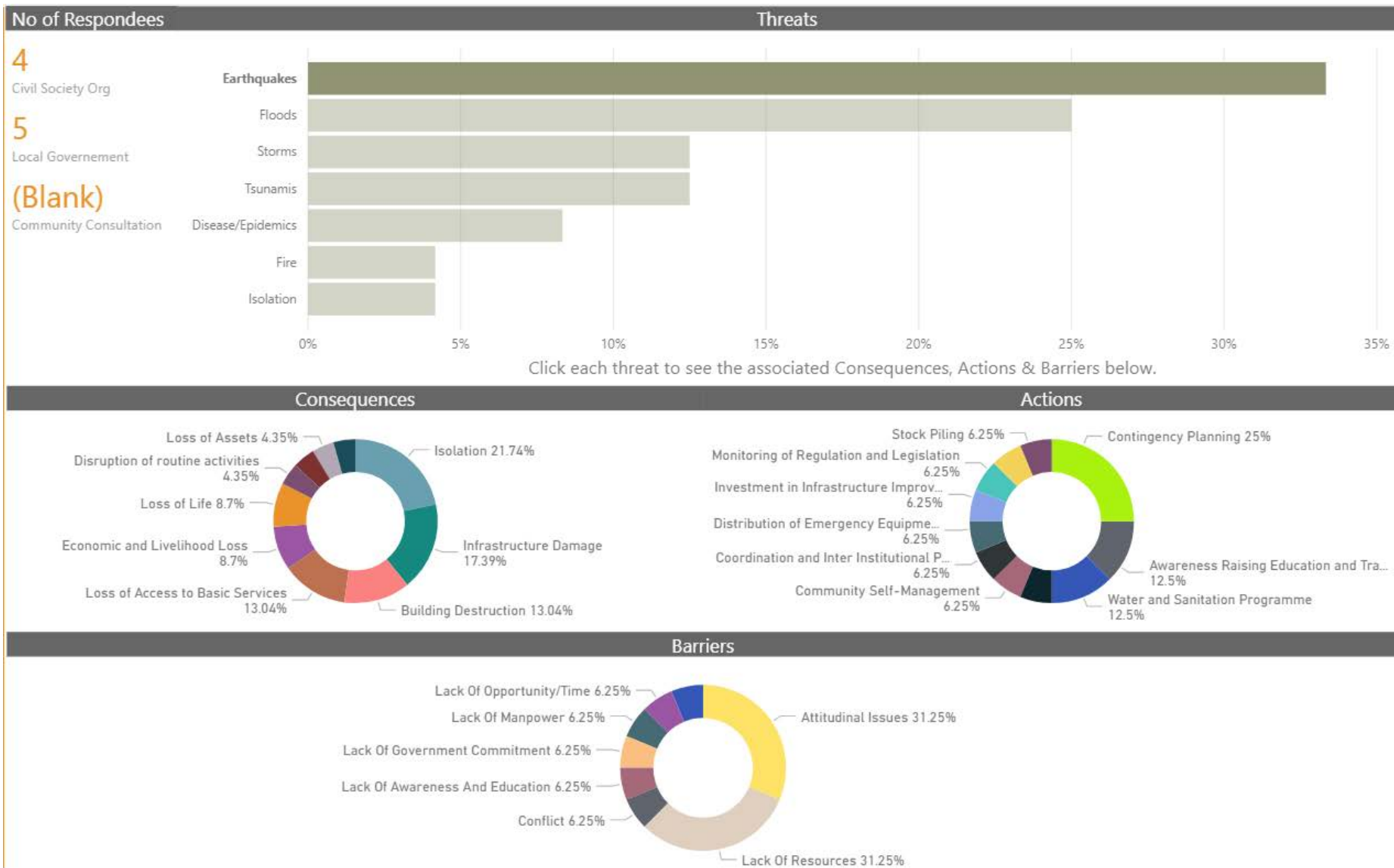
Figure 4. Threats, consequences, actions and barriers for floods in Lower Hutt

Floods

Floods are the second most pressing hazard for Lower Hutt, especially for those who live alongside the Hutt River. The top three impacts of floods, according to the GO and CSO participants, are isolation (25%), building damage (17%), and loss of assets (17%) (Fig. 5). A participant commented that the transport network would be shut down and limit people's mobility, and accordingly limit their access to basic services such as health care in times of floods. Other impacts reported are health effects (e.g. occurrence of diseases), displacement of families in the flooded areas, economic loss (not only for households but also for local business), environmental effects (e.g. erosions and water contamination), and long recovery time (that may have a big influence on the daily life and business activities of local people).

For reducing the potential impacts of floods listed above, the three top priority actions the participants suggested are raising risk awareness for local people (29%), enhancing the infrastructure (21%) and improving early warning systems (EWS) (14%) (Fig. 5). A CSO participant stated that though people's risk awareness has increased recently, it is not enough to bring about changes in their behaviour or practice (e.g. reserving food and water). Few GO participants commented that the Lower Hutt government invested a lot of money on improving the EWS (e.g. forecasting capability and response procedures) and building resilient mitigation infrastructure (e.g. stop banks and local drainage systems). Thanks to the recent development of mobile warning systems, the CDEM group is capable of sending mobile warnings to residents in a specific area. Few participants also believed that improving the community self-management (e.g. community connection by getting to know neighbours and community response planning processes), community empowerment (e.g. letting communities decide the timeframes, trigger level, what they want to do in flood response planning), improving individual and household disaster preparedness, and zoning practice (for land use planning), can contribute to reducing the flood risk.

In relation to the suggested DRR actions for reducing the flood risk, the participants revealed a range of barriers that hinder the implementation of the actions (Fig. 5). The most significant barriers are communication issues (14%), lack of government action (14%), lack of government commitment (14%), and lack of resources (14%). A GO participant noted that the CDEM group made efforts to simplify (e.g. making the messages understandable and actionable) and communicate the forecasts and warnings to local people and stakeholders via a variety of channels such as TV, radio, and social media. She, however, acknowledged that reaching everyone is a big challenge, especially for people whose language is not English and who are under-resourced. For people with disabilities, the CDEM group tried to engage the carers or organisations, who have contracts with their clients with disabilities, in risk communication. Local groups such as volunteers are mobilised in disseminating the messages (via emails and Facebook). Another GO participant found it easier to have feedbacks from online platforms than physical meetings. Few participants claimed that the lack of resources may prevent the local government from taking actions (e.g. reaching a wider community in risk communication and investing in flood mitigation infrastructure).

Other important barriers revealed from local people's side are attitudinal issues, lack of awareness, and lack of preparedness. It was reported that many people lost their trust in the information provided by the local government (e.g. the previous forecasts or warnings mismatched what really happened). Some participants also doubted the willingness of local people to participate in local resilience-building processes despite the opportunities open to them. These factors thereby often limited local people's preparedness.
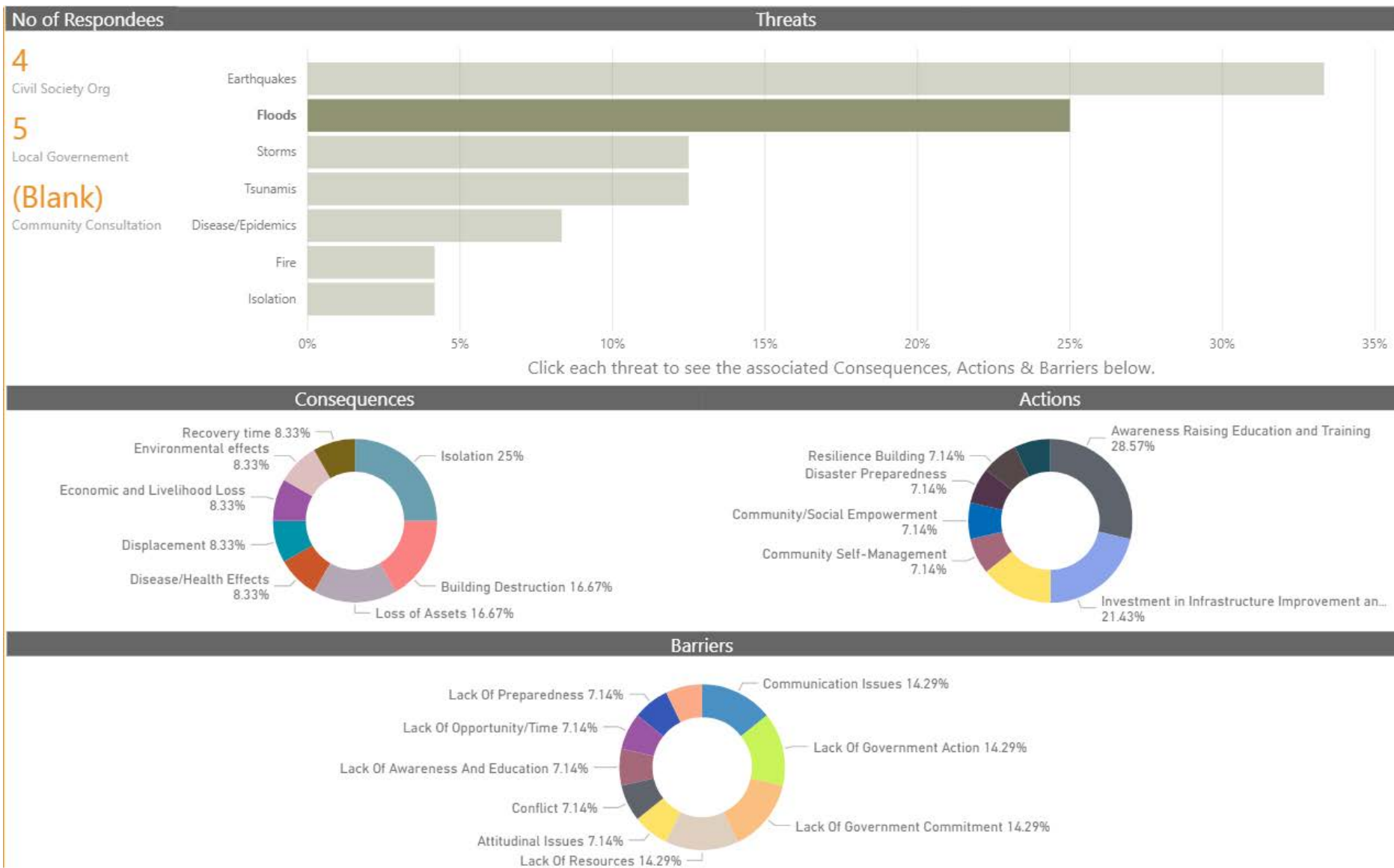
Figure 5. Threats, consequences, actions and barriers for floods in Lower Hutt

From the government side, the participants listed barriers such as conflicts in long-term investment priorities, lack of time, and lack of transport. For instance, few participants raised their concern of having limited time for the local government to communicate the warning on some rapid-onset hazards such as flash floods and earthquakes, and for local people to respond to such hazards. Lack of transport was raised as a big challenge mainly for recovery activities. A participant also reported that the local government may face challenges in making decisions on investment priorities, either for reducing future risk (e.g. dealing with the old stop banks) or for increasing economic gain (e.g. road construction).

Tsunamis

The participants claimed that the impacts of tsunamis are similar to earthquakes. Petone is considered at the greatest risk if a tsunami happens. The most significant consequences of tsunamis are isolation (25%), building destruction (17%) and loss of assets (17%) (Fig. 6). A GO participant believed that the entire area of Petone would be gone in the worst scenario of a tsunami. Many people living near the waterfront and hundreds of people living in boats in the Petone wharf are very likely to lose their lives. Many families would lose their houses and have nowhere to live. Thousands of businesses would be destroyed. The people in Petone would be trapped and relief support would be delayed for a long time due to the damage of road networks. The water would be contaminated, and health problems would arise. Other hazards such as flooding, liquefaction, and fires (fuel tanks in red zones), are also expected to happen in the aftermath of a tsunami. Few participants raised their concerns regarding psycho-social effects such as being scared and not knowing what to do. In a smaller-scale event, the impacts could include debris washup, erosion, damage of business in the waterfront.

Considering the impacts of tsunamis, the top priority DRR action the participants suggested is raising risk awareness (37%) (Fig. 6). The CDEM highly recommended people to act immediately if they feel the shaking long and strong ('long or strong, get gone'). A few GO participants emphasised that people should know tsunami zones and evacuation routes no matter where they stay (e.g. cafe, supermarkets, workplace). However, a GO participant noted that people tend to delay the evacuation for many reasons (e.g. calling friends to check, packing up things). She also noticed that many people in Petone started thinking of moving out of the red zones. Some businesses started planning for the worst scenario (e.g. insurance and having back up stores in other places). The trend of moving out of the risk zone may cause an economic loss for Petone in the future.

Some participants also suggested the improvement of EWS (25%) and evacuation drills (12%) as important DRR actions (Fig. 6). It was believed that improving the capability of tsunami forecast can give people more time to respond. In terms of evacuation, the CDEM group is working on the evacuation plan. The group made blue lines that let people know where is safe. Given the great number of people and the short time they may have for evacuation, the CDEM group is researching the vertical evacuation. Also, many participants agreed that there is a need to increase individual preparedness that means people need to have a plan and prepare essential items (e.g. food and water) and be ready to evacuate in times of emergency.
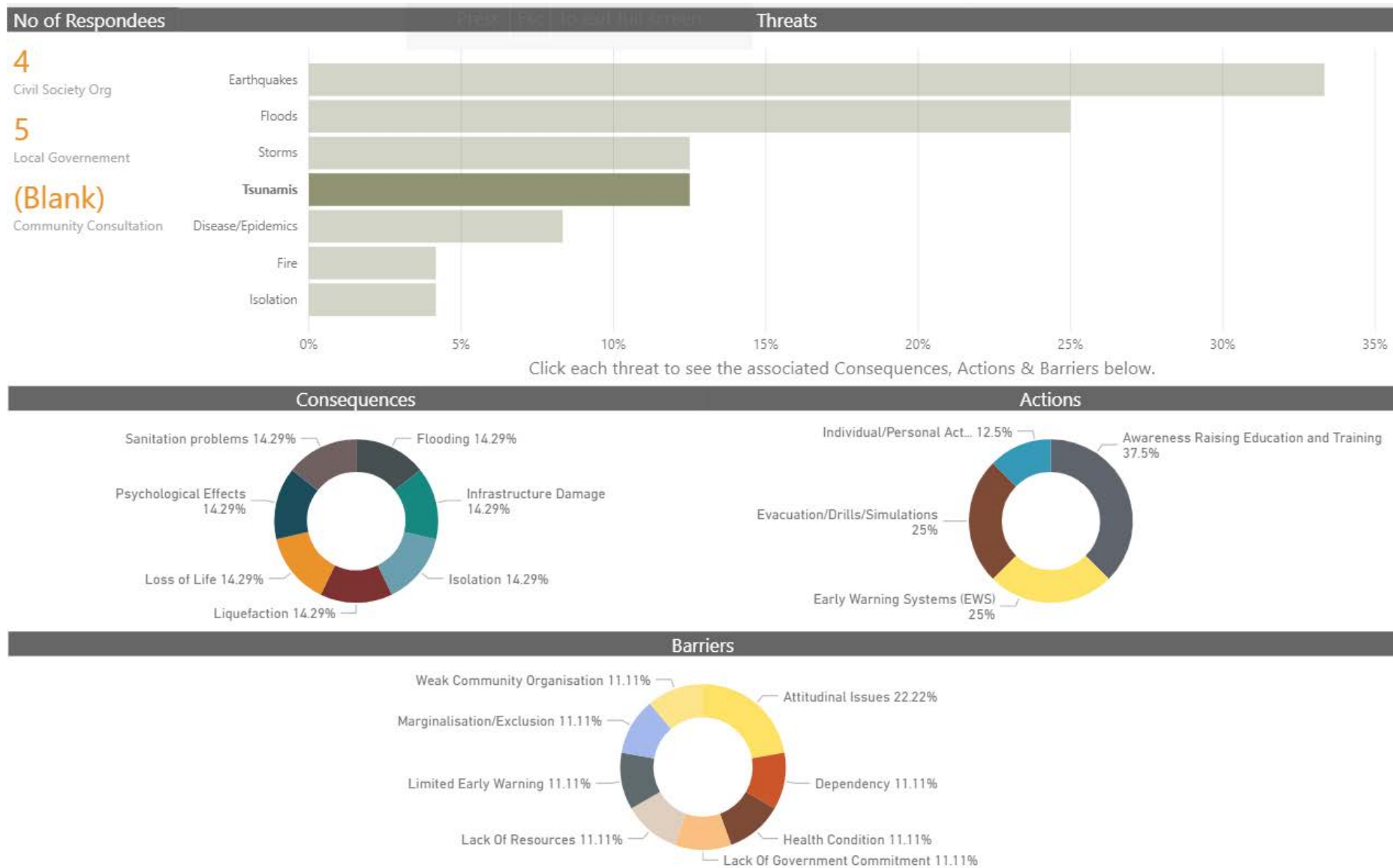
Figure 6. Threats, consequences, actions and barriers for tsunamis in Lower Hutt

The interviews revealed a range of barriers that prevent people from taking DRR actions (Fig. 6). One of the most significant barriers is people's attitudes (22%). People see risk as too high for this area and then lose hope in survival in the event of a disaster. Few participants commented that some people are dependent on someone telling them what to do or think that the CDEM group will come to help them (11%). Some GO participants noted some limitations of the existing EWS (11%). For instance, due to the very short lead time for the forecast (around 10 minutes), the CDEM group will not have time to analyse and alert people. Furthermore, mobile alerts and tsunami sirens rely on someone to turn it on and power. Thus, the CDEM group tries to empower people to take actions when they spot disaster signals. The 'Long or Strong: Get Gone' campaign was launched to encourage self-evacuation without relying on an alert system. A participant also noted that health conditions such as disabilities or chronic illness can prevent people from evacuating.

The other barriers reported by the participants are lack of government commitment (e.g. the local government may think it is not worth investing money to build up a strong community connection), lack of resources (for reinforcing the infrastructure or responding to disasters), marginalisation (e.g. lack of community engagement), weak community organisation.

Storms

The participants believed that the impacts of storms are not as significant as other hazards such as earthquakes or tsunamis. They consider that the most important impact of storms is infrastructure damage (43%) (Fig. 7). Some participants were concerned about building destruction (14%). A participant, however, believed that the current building structure in Wellington, in general, is good to cope with strong winds or storms. As storms often come with heavy rain, a participant also raised the concern of falling rocks or landslips that can affect transportation. Other impacts reported by the participants are isolation and loss of access to basic services (e.g. communication and power).

Some participants suggested DRR actions such as raising people's awareness of the possible impacts of storms and how to cope with them (Fig. 7). Individual preparedness also needs to be improved. For instance, a participant suggested that individuals should assess and take responsibilities for where they are living (e.g. cutting trees). Other actions suggested are enhancing community self-management and investment in mitigation infrastructure.

According to the participants, the main barriers that hinder the implementation of DRR actions lie in the limited awareness of local people. Other barriers listed are communication issues (e.g. many people with disabilities may not know what to do), geographic situation (i.e. the geographic location of Wellington makes it more prone to storms and strong winds), lack of government commitment, and lack of resources for both the local government and local people.
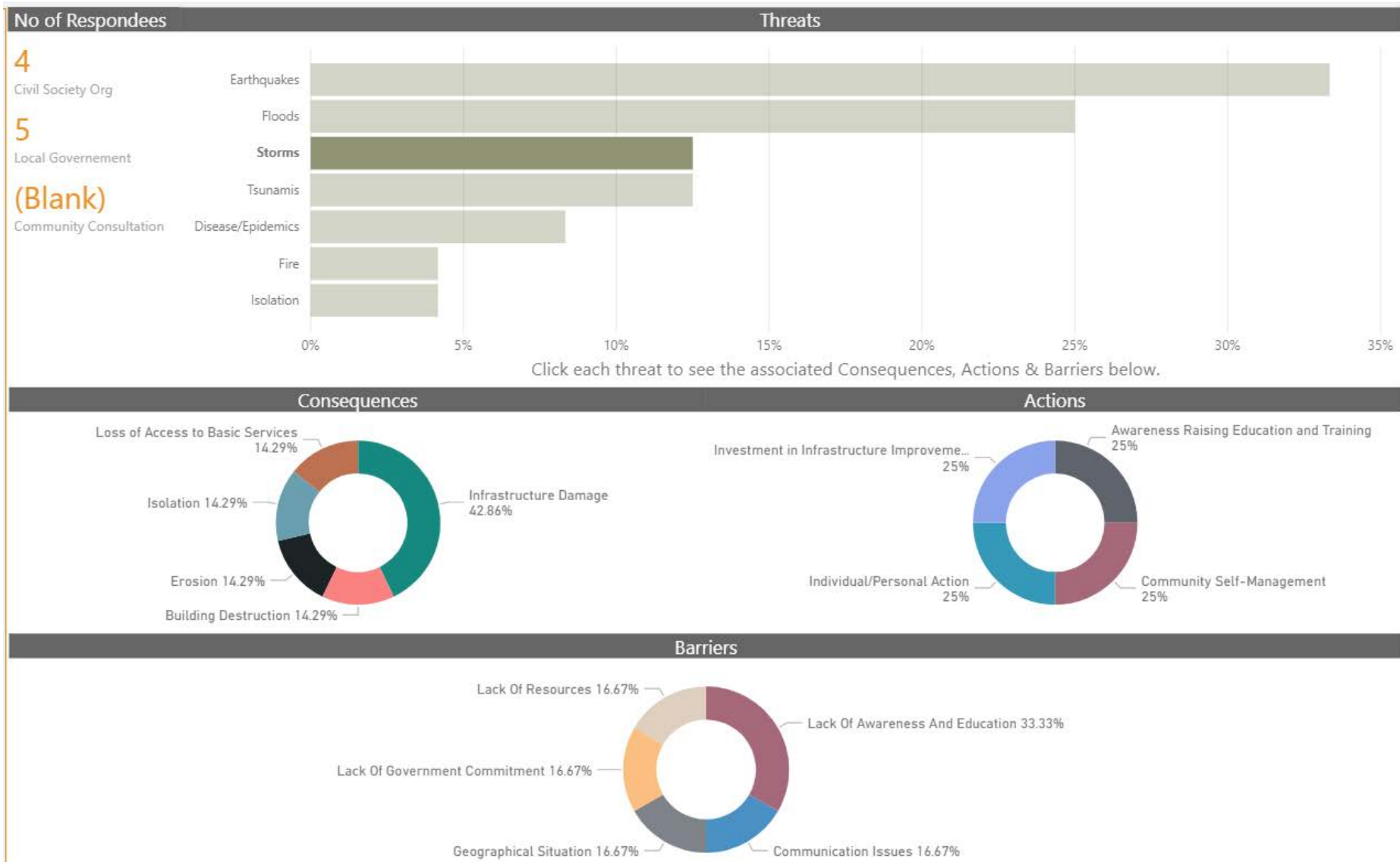
Figure 7. Threats, consequences, actions and barriers for storms in Lower Hutt

2. Change in disaster loss and future risk

The perceptions of both the community and stakeholders on changes in disaster losses (e.g. lives and assets) over the last 5 to 10 years and on future risk were also explored. The participants were asked to rate this change using the following scale: 1- Decreased significantly; 2 - Decreased a little; 3 - Remained the same; 4 - Increased a little; 5 – Increased significantly. All of the GO and CSO participants believed that disaster losses have remained the same or decreased a little over the last 5-10 years (Fig. 8). Explaining for the decrease in disaster losses, some GO participants commented that people's risk awareness has increased in recent years, especially after the 2011 Christchurch and 2016 Kaikoura earthquakes. Many awareness-raising activities such as community drills have been implemented. Many schools have their evacuation plans and children have been taught of skills for coping with disasters. Some participants also reported investments in building more resilient infrastructures increased over the last decade. However, few participants noted that increased awareness of local people may have not led to a significant change in their disaster preparedness practices. A GO participant also emphasised that the urban planning issues such as setting up malls and industrial businesses in hazards-prone areas may increase the risk for local communities. In contrast to the general perception of the GO and CSO participants, the majority of the household survey respondents believed that losses have remained the same or increased a little.

In terms of future risk, the participants believed that the main hazards or threats that younger generations will face in the next 10-15 years are the same as what they are facing now, including earthquakes, storms, droughts, (house) fire and floods (Fig. 8). Many participants believed that climate change may lead to sea-level rise and intensify hydro-meteorological hazards such as storms, droughts and flooding. Other threats raised are terrorism and social problems (e.g. social isolation, weak sense of community, domestic violence). For example, a participant reported a case that an elderly person passed away at their home, but no one knew. Few participants were concerned about losing the community connection. Though many participants realised the importance of community connection and started to rebuild it up (e.g. by getting to know neighbours), however, this is still a big challenge for them to achieve. A CSO participant was also concerned about how population growth may increase migrant and transient populations. Thereby, these migrant or transient populations may become vulnerable in dealing with hazards due to their lack of local knowledge in their new place.

Figure 8. Change in disaster losses and future risk in Lower Hutt

3. Risk governance

This section explores the extent of community inclusion initiated by GOs and CSOs in disaster risk governance processes. Inclusive disaster risk governance is defined as mechanisms put in place to foster full and meaningful participation of relevant stakeholders at all levels of the disaster management and preparedness cycle (GNDR, 2018). In examining the inclusivity of existing mechanisms in disaster risk governance, the research took into consideration the elements and processes below (Fig. 9).

Figure 9. Elements of inclusive risk governance

The below graphs (Fig. 10 – 14) show the status of community inclusion in risk governance from the perspectives of GOs, CSOs and local people.

Community engagement

From the CSO perspective, most of the participants claimed that their organisation supported community engagement occasionally in disaster risk assessment, DRR planning, and implementation of actions to reduce risk initiated by the government (Fig. 10). Their support mainly focused on organising trainings for the CDEM group, providing risk information to local people, and engaging people in DRR actions through volunteer networks. A participant noted that his organisation was aware of the importance of the involvement of vulnerable people in local resilience building and thus they tried to promote inclusion as much as they can. However, he commented that his organisation just played a supporting role to the CDEM group, and therefore, his organisation's actions would depend on the information provided by the CDEM group or upon the request of the group itself.

The role of local knowledge was not mentioned by the CSO participants (Fig. 10). Their support in this aspect was mainly on encouraging people to consider the health safety and share their knowledge with other community members, or passing the information received to other people in the community. In this sense, most of the participants believed that they made a good contribution to knowledge-sharing.

Key

1 - Not at all   **2 - To a very limited extent**   **3 - Occasionally**   **4 - Yes, with some limitations**   **5 - Yes, very effectively**

Assessment: To what extent does your organisation engage members of the community, including the most vulnerable, to review and assess the most significant threats?

Planning: To what extent does your organisation include members of communities, including the most vulnerable, when preparing plans/actions to address risks/threats?

Implementation: To what extent does your organisation engage communities, including the most vulnerable, to implement actions to reduce risks/threats?

Knowledge-sharing: Do you support communities, including the most vulnerable, in sharing local knowledge and approaches to resilience with others?

Capacity strengthening: To what extent do you strengthen the capacities of communities and remove barriers to help them participate in resilience processes?

Advocacy: Do you actively advocate community priorities at the National Platform for DRR?

Figure 10. Community engagement by civil society organisations

Most of the CSO participants believed that they provided good support in terms of capacity building for local communities (Fig. 10). In addition to trainings conducted by the CDEM group, a CSO participant claimed that his organisation did some trainings (e.g. psycho-social and basic first aids) and promotional work on behalf of the CDEM group. Another participant claimed that in the previous community meetings, she tried to increase accessibility to community meetings by sharing the discussion contents online via Facebook and email to make sure people had the opportunity to understand community concerns and had their feedback or opinions heard.

For advocating community priorities, some CSO participants believed that their work was effective (Fig. 10). Their efforts mostly took place at the city level. A participant noted that she often raised community concerns regarding infrastructure, waste management, stormwater, and flooding when she participated in meetings held by the local government. Another participant claimed that his organisation has been trying to build a partnership with stakeholders, e.g. GNS, REMO, and Fire NZ, and to give them suggestions (including community concerns) which have been drawn from his organisation's work with local communities.

Most of the GO participants claimed, in general, that the government engaged the communities quite effectively in disaster risk assessment, DRR planning, implementation of actions to reduce the risk, and monitoring the resilience progress (Fig. 11). There is still room for improvement. Firstly, it was observed that the participation of vulnerable groups and organisations working for/with them remained limited in the resilience-building processes. Few participants explained that the engagement with vulnerable groups depends on the community leaders and the time to build trust and relationship with these groups. Accordingly, a GO participant raised a need for the local government to invest more time and resources in identifying and working with vulnerable groups. She also noted that community engagement is hard to measure. The existing monitoring systems focus mainly on quantitative outcomes (e.g. the number of workshops or meeting held with the communities) rather than on the meaningful process of the engagement (e.g. building relationship or trust). Therefore, for better outcomes of community engagement, there is a need to have a better understanding of community development.

In terms of DRR planning, a participant claimed that the CDEM group plan was drafted in collaboration with key stakeholders like councils, utilities groups, community groups, and released for public consultation. However, access to the plan remained very difficult for local people due to legal jargons or difficult concepts. Thus, it would be hard for people to be meaningfully engaged in this process. At the community level, the CDEM group collaborated with local community boards to promote the community response planning. However, probably due to the lack of trust and strong relationships with local communities, it was reported that there was low turnouts in the previous meetings (e.g. 18 participants in the Petone disaster response planning workshop).
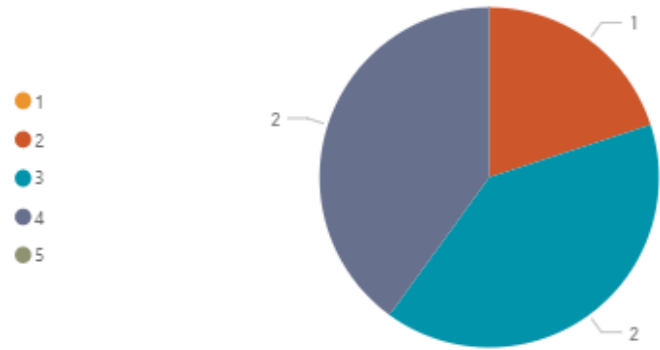
When it comes to the implementation processes, few GO participants noted that the CDEM group have carried out simulation exercises at the community level, but they had low turn-up. A GO participant commented that people do not want to know about the CDEM group and disaster-related activities until disasters happen. However, she questioned the approaches used by the local government to engage their residents. She therefore raised a need to do things differently (e.g. investing time and resources in building good relationships with local communities). For monitoring processes toward the resilience-building progress, a GO participant noted that the CDEM group did not have proper monitoring and evaluation systems for their plans. Therefore, it was a challenge to engage local people in this process.

From the local community perspective, most of the household survey respondents believed that their community members were engaged occasionally or to a very limited extent in all community resilience processes, including disaster risk assessment, DRR planning, implementation of actions to reduce risk, and monitoring the implementation progress (Fig. 12).
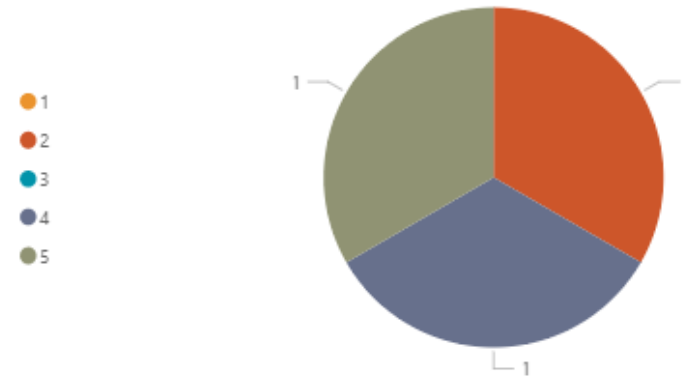
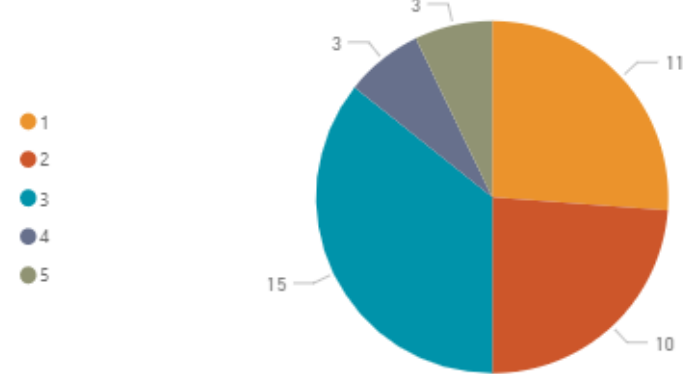Figure 11. Community engagement by government organisations

Figure 12. Community engagement from the local community perspective

Enabling environment for inclusion

Enabling environment refers to factors such as leadership, resources, legal mechanisms and policy that enable and encourage proactive engagement of communities and relevant stakeholders (GNDR 2019). In general, the interviews with the GO participants indicate that the CDEM Group was capable of influencing DRR-related decisions at the regional and local level. The GO participants also believed that the CDEM plans from the regional to the local level were generally effective in addressing the risks in the region (Fig. 13). A GO participant noted that, at the regional level, the CDEM group had the CDEM group plan, community resilience strategies, and earthquake response plan. At the local level, the CDEM group has been promoting community response plans, business continuity plans, and household emergency plans.

In terms of mechanisms for community engagement in resilience building, the participants mainly focused on those in planning. They believed that the existing mechanisms for raising concerns (e.g. online submission, phone call, and physical consultation meetings) were effective but there was still room for improvement. Also, the participants, in general, agreed that the funds allocated for addressing the risk in their area were sufficient. However, a GO participant was concerned about the lack of funding for the CDEM group to address the risks in the region. It was noted that the operation of CDEM group relied on the limited funding contributed by the 8 district councils. The lack of resources greatly influenced the operation of the CDEM group and at times restricted the CDEM group in making change.

Regarding the access to information, most of the GO participants agreed that the government generally has communicated information effectively to local people through a variety of channels such as community meetings, the internet, local libraries, and social media. Preparedness materials (e.g. booklets and flyers) have been visualised, translated to 16 languages, and converted into audiobooks to increase the accessibility of risk information.

From the community perspective, there were various opinions on accessing the information from the government around actions to reduce disaster risks (Fig. 14). However, the household survey respondents tend to think that it was not hard for them to access such information. The survey results also show local people were more aware of the regional CDEM group plan (71% of the respondents) than the community resilience plan (29%). A GO participant noted that the information was out there but not everyone went looking for it. However, she also acknowledged that accessibility may be an issue for people looking for information (e.g. many people do not have the internet).

In terms of the access to resources for communities, there was a general agreement among the local community participants that they had no access to or were not aware of financial resources (e.g. money, material, equipment) from local government to address their risks/threats (Fig. 14).
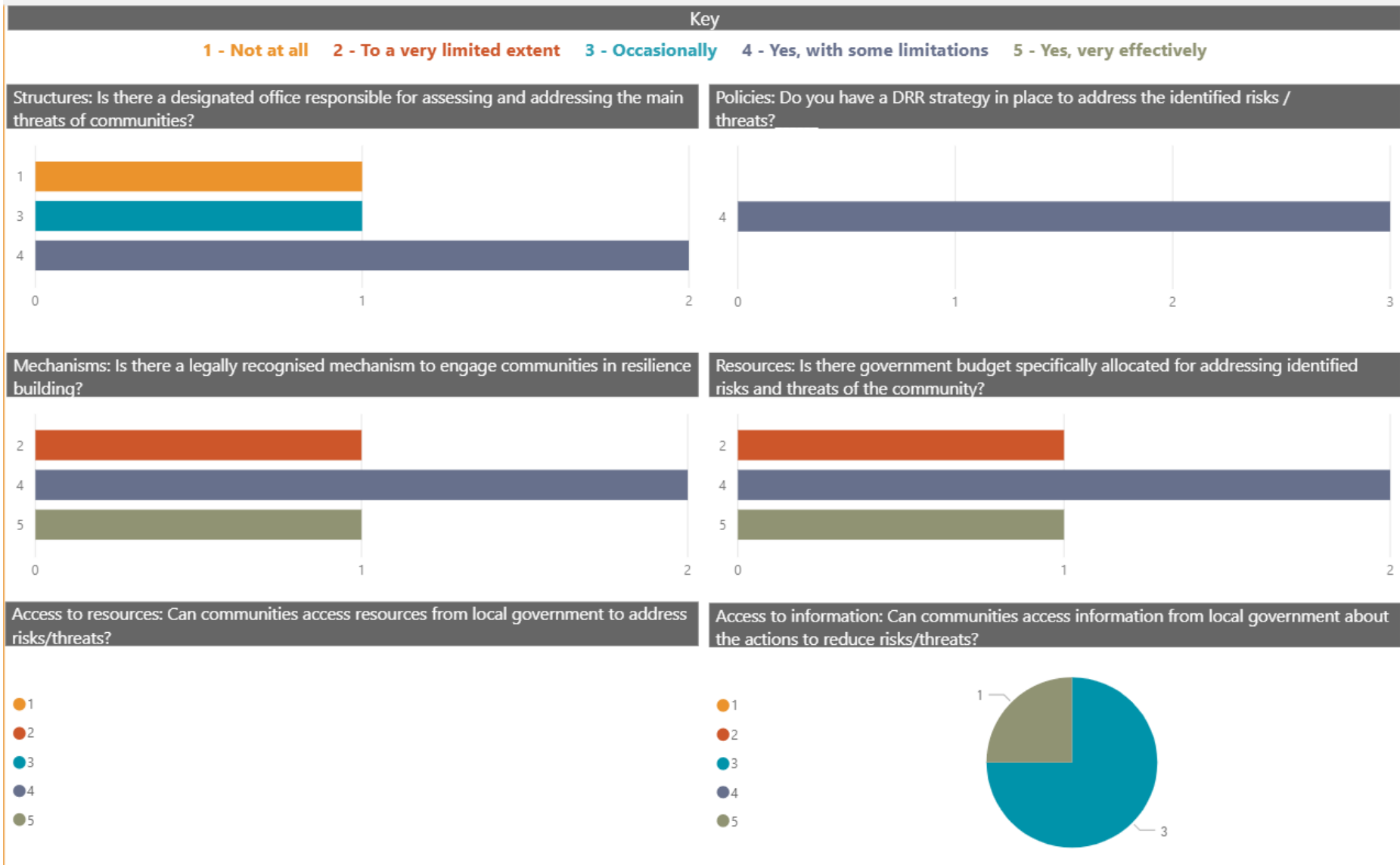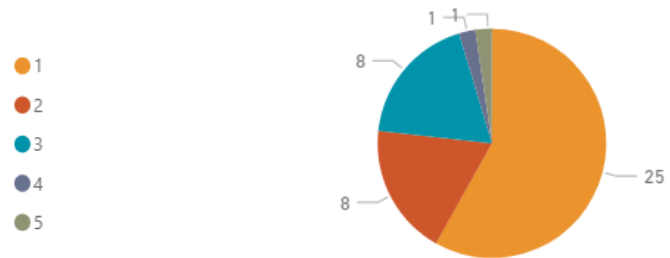
Figure 13. Enabling environment for inclusion from the government perspective
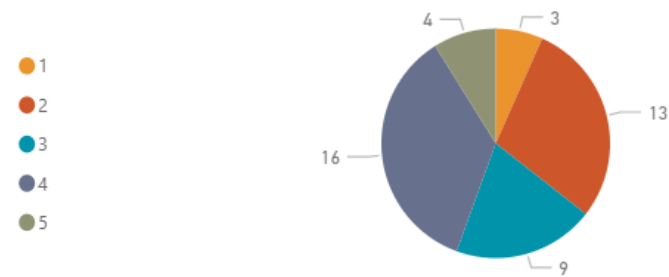
Figure 14. Access to resources and information from the community perspective

Factors that prevent and facilitate inclusion of communities in the decision-making processes about risks/threats

The research explored a variety of factors that prevent and facilitate the inclusion of communities in the decision-making processes about risks/threats. These factors were reflected by the GO, CSO and community perspectives and summarised below.

Barriers:
- Attitude of local people: Some interview participants noted that disaster preparedness is not a priority, especially for local people who live in poverty. Some people do not see the value of their participation. Some do not prioritise DRR as they think that they cannot do anything when a disaster happens. However, few participants claimed that local people's risk awareness has been increasing.
- Lack of knowledge: Few local participants felt that they are not able to contribute to the planning due to their limited knowledge of the plans. A local respondent commented that it is hard to give meaningful feedback without deeply engaging in the subject matter, and then suggested the local government should have a summary document for consultation rather than a long document. A CSO participant noted that the leadership changed and many people are not aware of this change. Thus, they may find it confusing of who to approach for the official information of risk. A few local residents found the relationship between the local government and the Wellington Region Emergency Management Office (WREMO) unclear.
- Communication: Some local respondents claimed that they are not informed or aware of the activities. Some also raised language barriers.
- Time: While many meetings have been held at different times to reach a larger population, for some people, the timing did not still fit with people's schedules. Some local residents said that they are busy as they have too many other roles.
- Lack of resources: Some participants also reported that the local government do not have enough resources to reach the population at large or to bring local people together for risk assessment and DRR planning.
- Weak community relationship.
- Inaccessibility: While community gathering places are often selected and approachable, some participants raised the inaccessibility issues of the venue.
- Lack of trust: some local residents felt that their voice would not count.

Facilitators:
- Leadership: The government has considered the diversity of the population and is trying to make their DRR programmes to be more inclusive.
- Many channels were utilised to communicate the risk (e.g. newspapers, social media, emails, neighbourly sites) and provide opportunities (e.g. livestreaming, email surveys) for local people to participate.
- Community events and projects implemented by CSOs to enhance the community connection and keep communities strong

4. Coherence

Coherence in this study refers to the efforts of different actors and organisations (government and non-government) to effectively respond to a crisis by identifying ways of working together based on their respective expertise, values and mandates (GNDR 2018). Coherence is the logical connection or consistency between household and community-focused resilience-building activities, on the one

hand, and development activities, on the other. When required, activities under these two types of interventions should converge together to deliver the common outcome of development that can tackle future risks, decrease vulnerability and build resilience (GNDR 2018). This study looks at the coherence between strategies to reduce risks, adapt to climate change and reduce poverty.

From the interviews with GO and CSO participants, it shows that disaster risk was well considered in local development plans, especially when doing structural mitigation measures (Fig. 15). However, few GO participants shared that some local government staff denied climate change or did not consider it as enough of an emergency to take action. Most of the GO and CSO participants also believed that risks and approaches to reducing the risks were carefully considered in their local investment projects (Fig. 15). However, there is still room for improvement. A CSO participant noted that the local government needs to take more serious consideration of the risk which are exposed to or created by investment projects such as housing, complexes, and car parks.

In addition, the findings show a lack of consensus among the participants when it comes to the government's efforts in creating coherence between the strategies to reduce risks, adapt to climate change, and reduce poverty. A GO participant commented that the local government allocated funds to have more staff on the sustainability and resilience team and this team has been increasingly considering the effects of sea-level rise and climate change in the local development planning. He also explained that the local government had around 20 strategic plans 5 years ago, but now they made all in one programme. When it comes to poverty reduction, a CSO participant claimed that she has not seen many deliberate actions for poverty reduction from the local government. Most of the support for the poor was from CSOs. She noted that the recent emergency hub model by the CDEM group has taken into account the poverty. For instance, in times of disasters, the poor or homeless people can shelter at the hub with water and food supply. A GO participant added that the CDEM recovery plan often aims to reduce future risk or 'building back better' by taking into account climate change impacts, reducing poverty, and increasing access to resources.

Furthermore, the CSO participants shared that they have very limited ability to influence such coherence at the local level (Fig. 15). Many of them claimed that they are working alongside the government and trying to share the information about the issue's local communities face and advocate for local needs. However, they are not sure if the government has taken their voice seriously.

From the community perspective, the majority of the household survey respondents believed that the local government did not carefully consider disaster risk and climate issues in local development plans (Fig. 16). They also believed that risks and the approaches to reduce the risks were not carefully considered in local investment projects.
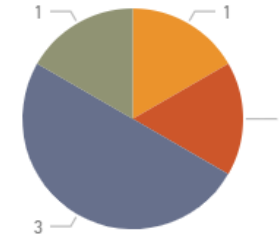
Key

1 - Not at all   2 - To a very limited extent   3 - Occasionally   4 - Yes, with some limitations   5 - Yes, very effectively
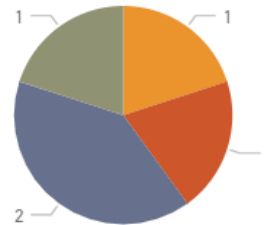
Have the impacts of disasters increased in your community due to public or private development?
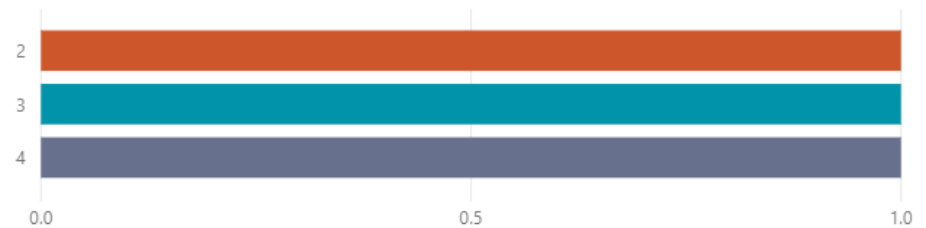
- 1
- 2
- 3
- 4
- 5

Are disaster risk and climate issues taken into account in local development plans?_____

- 1
- 2
- 4
- 5

Are risks and approaches to reduce those risks considered carefully in proposing or approving local investment projects?

- 1
- 2
- 3
- 4
- 5

Is national government working to ensure coherence between strategies to reduce risks, adapt to climate change and reduce poverty?

To what extent are you able to influence coherence between strategies to reduce risks, adapt to climate change and reduce poverty at the local level?
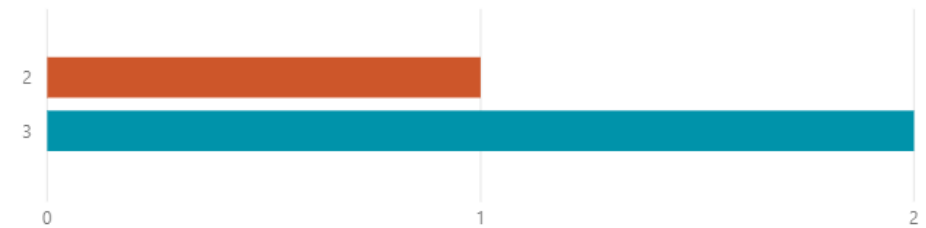
*Figure 15. Coherence from the government and non-government perspectives*

Have the impacts of disasters increased in your community due to public or private development?

- 1
- 2
- 3
- 4
- 5

Are disaster risk and climate issues taken into account in local development plans?_____

- 1
- 2
- 3
- 4
- 5

Are risks and approaches to reduce those risks considered carefully in proposing or approving local investment projects?

- 1
- 2
- 3
- 4
- 5

Figure 16. Coherence from the community perspective

## 5. Ecosystem-based disaster risk reduction

Ecosystem-based disaster risk reduction refers to the sustainable management, conservation and restoration of ecosystems to provide services that reduce disaster risk by mitigating hazards and by increasing livelihood resilience (GNDR 2019). Many CSO and GO participants claimed in general that ecosystem-based approaches were used in building community resilience, especially in flood risk reduction and disaster recovery processes (e.g. recovering natural resources) (Fig. 17). Community members, however, believed that the local government did not consider or considered to a very limited extent environment and ecosystem management issues while building community resilience. Few community-led ecosystem-based practices found in the study area were tree planting, beach clean up and waste collection.

(a) GO and CSO perspective
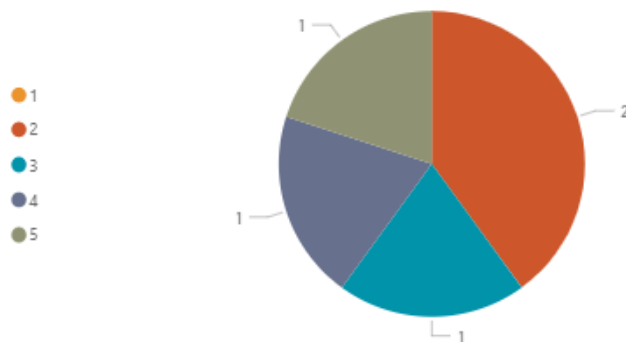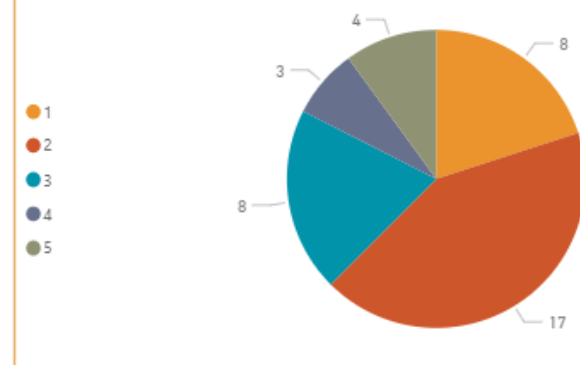
(b) Community perspective

Figure 17. Ecosystem-based DRR approach from (a) government, non-government and (b) community perspectives

III. Conclusions

This study contributed to raising the voice of local people in resilience building processes in the study area. The local community had a chance to share their concerns and needs with regards to the disaster risk reduction processes (e.g. their concerned threats/hazards, their priority actions, barriers for taking the actions and participation in disaster resilience processes, and access to information and resources).

A variety of threats in the study community were explored. These threats were not only natural ones such as storms, tsunamis, and floods but also social ones such as poverty and violence. For most of the threats identified, increasing the access to the risk information (including local knowledge of risk and approaches to risk reduction) through awareness-raising campaigns and other communication channels, having a community resilience plan with careful considerations of the needs of at-risk groups, and investment in mitigation infrastructure were considered as the most important actions in building community resilience to disasters. The assessment also revealed a variety of barriers that prevented people from taking actions in coping with disaster risk, and many of them had roots in local people's everyday lives, e.g. lack of resources and apathy.

In addition, this study provided a chance for both government and non-government stakeholders to reflect on how inclusive risk governance was and for communities to evaluate their inclusion in this risk governance. In general, from the local people's perspective, despite many efforts from the government, the community engagement in the disaster risk assessment, DRR planning, implementation of actions to reduce the risk, and monitoring the resilience progress remained limited in the study location.

A variety of factors that prevented and facilitated community inclusion in decision-making processes (e.g. local development planning or community response planning) regarding disaster resilience were revealed. These factors did not operate in silos but were often interrelated in causing effects on the inclusion. Personal barriers such as attitudes (e.g. apathy and low interest) and lack of resources may need a long-term strategy to address and should be integrated into local development plans. External factors such as communication and accessibility are also necessarily improved to create more opportunities for people to participate in the decision-making processes.

Furthermore, though there was increasing consideration and integration of disaster risk and climate change issues in the local development plans in the study area, poverty issues have received insufficient attention from the local government. To reduce poverty, it is suggested that the local government should strengthen their collaboration with CSOs. This strong engagement of the CSOs will help the government mobilise their resources and capacities not only for poverty reduction but also for community resilience building.

Similarly, while ecosystems are believed to provide services that reduce disaster risk by the reducing the exposure of communities to hazards and by increasing livelihood opportunities, ecosystem-based approaches were considered in a limited way in building community resilience at the study area. The ecosystem-based practices found in the study area were mostly initiated by the community itself.

References

GNDR. 2018. Views from the Frontline 2019. Implementation Handbook for National Coordinating Organisations.

GNDR. 2019. Views from the Frontline 2019. Questionnaire Guidebook.

Views from the Frontline 2019

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