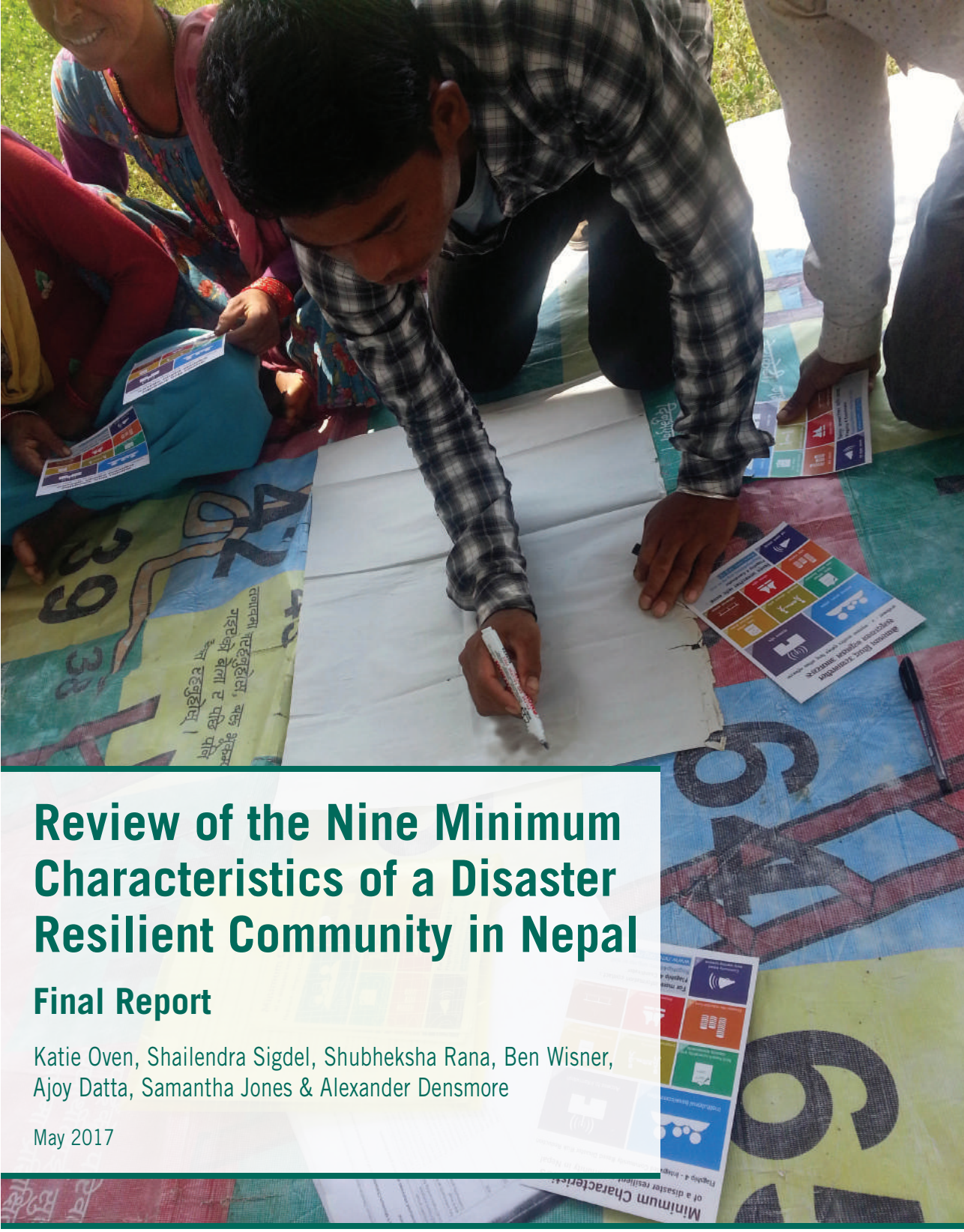

# Review of the Nine Minimum Characteristics of a Disaster Resilient Community in Nepal

## Final Report

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May 2017

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*Cover photo: A focus group discussion in a case study community in Kanchanpur District, Nepal, March 2016 © Foundation for Development Management, Kathmandu, Nepal.*

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## Foreword

Adopting Hyogo Framework for Action and subsequently following Sendai Framework for Disaster Risk Reduction, the Government of Nepal has been fully committed to making more resilient communities with their active participation, enhancing their capacities and widening flagship partners to support mobilization of local resources. Based on this framework, the government's Policies, Plans, Guidelines and Frameworks paved the way to the role of the community in disaster risk management in Nepal. As it envisioned the Local Self-Governance Act (1999), which underlines a number of risk reduction measures to be designed and instigated at the local level. The Local Disaster Risk Management Planning (LDRMP) guidelines (2011)of the Ministry of Federal Affairs and Local Development describe the process for developing a disaster management plan at local level with high degree involvement of community people.

It was anticipated that Flagship 4 CBDRR projects are guided by nine minimum characteristics of a disaster resilient community in Nepal. The development of these characteristics were prepared with a best experiences of the Government of Nepal, INGOs, NGOs, UN, donors and Red Cross/Red Crescent movement through a consultative process as an agreed guideline to be followed. CBDRR projects are also encouraged to include additional indicators as required. The specific aim of the study was to determine if communities that have been subject to a community-based disaster risk reduction (CBDRR) intervention based on the Nine Minimum Characteristics are in a stronger position to protect themselves from, and to recover after, the severe stresses associated with a disaster such as an earthquake, landslide or flood. The study has been recommended for future advancement of the CBDRM initiatives in Nepal. In this regards, I would like to request all the partners agencies, Government Ministries, Departments, Local bodies, donors, NGOs/INGOs, communities to follow and implement the recommendations to make more resilient community in Nepal. Ministry of Federal Affairs and Local Development(MoFALD) is very much committed to implement and follow up on its existence.

I would like to express my great appreciation to Dr Katie Oven lead researcher and her team from Durham University, Foundation for Management team, for their hard work, valuable and productive ideas and recommendations on review on Nine Minimum Characteristics of a Disaster Resilient Community in Nepal which represents mile stone for making more resilient community in Nepal. I would also like to extend my thanks to the wider Flagship 4 partner agencies, DFID, UN agencies, UNRCO, donors, Ministries, Departments, local bodies, community people, MoFALD Officials for their support and contributions on this very important research. My special thanks goes to International Federation of Red Cross and Red Crescent Societies(IFRC) Country Office Nepal team, Mr. Krishna Kumar K.C. Focal Point of NRRC Flagship 4, and Mr. Nikhil Shrestha for their technical support, coordination, guidance and overall arrangement of the study.

Mr. Kedar Bahadur Adhikari
Secretary
Ministry of Federal Affairs and Local Development

International Federation of Red Cross and Red Crescent Societies
Fédération internationale des Sociétés de la Croix-Rouge et du Croissant-Rouge
Federación Internacional de Sociedades de la Cruz Roja y de la Media Luna Roja
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## Acknowledgement

Communities bear the brunt of most natural disasters in Nepal, which cost not only lives and property but also sets back development gains. These same communities are also at the forefront of disaster risk reduction and response.

Empowering communities to increase their resilience to natural disasters requires a sustained effort, tailored to the specific hazards in each area, and must be scaled up across the country to reach as many communities as possible. Nepal is facing a range of risks to natural disasters, risks that are increasing due to climate change, improper land use, rapid population growth and urbanization. The vulnerability of each community varies according to its geographical characteristics, topography, population, quality of infrastructure, access to services, existing economic opportunities and the level of social cohesion and social capital.

International Federation of Red Cross and Red Crescent Societies (IFRC) has regularly been playing a coordination and advocacy role under the leadership of Ministry of Federal Affairs and Local Development (MoFALD) on Flagship 4 Integrated Community Based Disaster Risk Reduction/Management(CBDRR/M) in Nepal. It aims to build a common understanding and approach among the many organizations contributing CBDRR/M activities, to track progress against national targets and encourage greater investment for scaling up CBDRR/M across the country.

Nine minimum characteristics are the agreed indicators for a disaster resilient community in Nepal which should be included as a minimum component in all CBDRR projects.

In 2016, a comprehensive research study was conducted on the 9 Minimum Characteristics of a Disaster Resilient Community in CBDRR implemented communities/VDCs/Municipalities through wider Flagship 4 partners. The aim of the research study was to determine if communities that have been subject to a CBDRR intervention based on the 9 Minimum Characteristics of a Disaster Resilient Community are in a stronger position to protect themselves from, and to recover from, the severe stresses associated with a disaster event.

I would like to express my deep gratitude to Katie Oven lead researcher Durham University UK and local researchers, for their hard work and valuable recommendations on research study on Nine Minimum Characteristics of a Disaster Resilient Community in Nepal.

I would also like to extend my thanks to the partner agencies, DFID, UN agencies, donor community, Ministries, Departments, local bodies, community people, MoFALD Officials for their support and contributions on this very important research study.

Finally, I would like to thank the International Federation of Red Cross and Red Crescent Societies(IFRC) Country Office team, Flagship 4 Focal Point Mr. Krishna Kumar K.C. and Mr. Nikhil Shrestha for their technical support and overall arrangement for the research study.

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Shaped by the past, creating the future

Department of Geography

**Foreword**

In 2016 Durham University and the Foundation for Development Management (FDM) were tasked with reviewing the impact of the Government of Nepal's *Nine Minimum Characteristics of a Disaster Resilient Community*. This six-month research study, funded by the UK DFID South Asia Research Hub, and the UK Natural Environment and Economic and Social Research Councils through the *Earthquakes without Frontiers Partnership*, was undertaken at the request of the Ministry of Federal Affairs and Local Development (MoFALD), the International Federation of Red Cross and Red Crescent Societies (IFRC), and the Nepal Risk Reduction Consortium's Flagship 4 programme.

The research set out to determine if community-based disaster risk reduction (CBDRR) interventions based on the *Nine Minimum Characteristics of a Disaster Resilient Community* left communities in a stronger position to protect themselves from, and to recover after, a disaster event such as a flood or earthquake. An in-depth, qualitative research approach was developed to capture both the views of householders at the community-level across 24 case study areas, local government representatives and project implementing partners.

The research findings highlight the importance of having a flexible framework that can be adapted for use in different geographical and hazard contexts to support communities to identify their own needs, the support they require to make their community more resilient, and the most appropriate means of realising that support.

The initial findings were shared at a dissemination workshop in August 2016 involving representatives from the Government of Nepal, and the donor, UN and INGO communities, with the aim of co-producing a set of final recommendations to guide future CBDRR policy and programming in Nepal. The final report was launched in January 2017 by the Government of Nepal.

I would like to express my sincere thanks to Mr Gopi Krishna Khanal, Mr Rishi Raj Acharya and Mr Purusottam Subedi at the MoFALD for their support and commitment to this study; to Mr Krishna Kumar KC and Mr Nikhil Shrestha at the IFRC for their technical support and coordination; and to Flagship 4 partners for their participation and cooperation. Special thanks go to the research team at FDM and to the individuals who kindly participated in the study. We look forward to working with MoFALD and Flagship 4 partners to build on the learning from this research to further strengthen the resilience of communities in Nepal, and to share this learning with other countries through the international disaster risk reduction community.

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We would like to express our sincere thanks to the communities who participated in the research and to the individuals who welcomed us into their homes and who participated in interviews and focus group discussions. Thanks also to the Flagship 4 partners who kindly nominated projects for inclusion in the study and to their local implementing partners who shared their knowledge and experience and provided field support. We also thank the local government representatives who kindly gave their time for interviews.

We are grateful to the Flagship 4 Advisory Committee and Consultation Group, Nupur Barua (DFID-India) and Nicola Murray (DFID-Nepal) who provided valuable feedback on the initial research proposal. Special thanks go to Moira Reddick and Rachel Routley (Nepal Risk Reduction Consortium), Sanjeev Hada, Krishna Kumar KC and Nikhil Shrestha (International Federation of Red Cross and Red Crescent Societies - IFRC) for their guidance, thoughtful and constructive reviews, and administrative support. We also thank Gopi Krishna Khanal and Rishi Raj Acharya at the Ministry of Federal Affairs and Local Development and the wider Flagship 4 community for stimulating and challenging discussions throughout the course of this research. Finally, we would like to thank the participants at the research dissemination workshop who co-produced the recommendations in this report with us, and Abijit Sharma for capturing the discussions as the workshop rapporteur.

## Abbreviations

| | |
|---|---|
| CBDRR | Community-based disaster risk reduction |
| CDMC | Community Disaster Management Committee |
| DDC | District Development Committee |
| DDRMP | District Disaster Risk Management Plan |
| DMC | Disaster Management Committee |
| DPRP | Disaster Preparedness and Response Plan |
| DRM | Disaster risk management |
| DRR | Disaster risk reduction |
| FDM | Foundation for Development Management, Nepal |
| IFRC | International Federation of Red Cross and Red Crescent Societies |
| LDRMP | Local Disaster Risk Management Plan |
| MoFALD | Ministry of Federal Affairs and Local Development, Government of Nepal |
| MoHA | Ministry of Home Affairs, Government of Nepal |
| NGO | Non-Governmental Organisation |
| NPR | Nepali Rupee |
| NRRC | Nepal Risk Reduction Consortium |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNISDR | United Nations International Strategy for Disaster Reduction |
| VCA | Vulnerability and capacity assessment |
| VDC | Village Development Committee |

# Executive Summary

This report summarises the findings from a six-month research study, led by Durham University in the UK and the Foundation for Development Management in Nepal, which explored the impact of the Nepal Risk Reduction Consortium's (NRRC) *Nine Minimum Characteristics of a Disaster Resilient Community*. The study was undertaken at the request of the NRRC Steering Group, the Ministry of Federal Affairs and Local Development (MoFALD), and the Flagship 4 community.

The specific aim of the study was to determine if communities that have been subject to a community-based disaster risk reduction (CBDRR) intervention based on the Nine Minimum Characteristics were in a stronger position to protect themselves from, and to recover after, the severe stresses associated with a disaster such as an earthquake, landslide or flood.

In order to address this aim, the study explored the following research questions:

1. What, from a community perspective, are the key factors that make a community resilient to a disaster, and how do these key factors vary between locations (e.g. rural and urban; mountains, hills and Terai)? To what extent do the Nine Minimum Characteristics capture these community priorities?
2. How have development partners used the Nine Minimum Characteristics within their CBDRR projects?
3. What specific outcomes have the Nine Minimum Characteristics brought about at the community level, and how have these outcomes benefited communities?
4. What lessons can be drawn from the implementation of the Nine Minimum Characteristics for future CBDRR programming in Nepal?

The Review was not designed to monitor or evaluate the outcomes of specific projects. Rather, the research team used Flagship 4's CBDRR projects as a starting point to Review the Nine Minimum Characteristics from the perspective of the communities themselves.

A qualitative approach was undertaken involving semi-structured interviews and focus group discussions with community members across 24 case study wards. Semi-structured interviews were also undertaken with local partners implementing CBDRR projects informed by the Nine Minimum Characteristics and local government representatives at the VDC, municipal and district levels. Whilst a study of this size will never derive statistically significant metrics adequate to describe the outcomes of the Nine Minimum Characteristics, the breadth of the study was designed to capture a range of contexts which are widely representative of Nepal as a whole.

**Positive outcomes from the Terai**

The Review has highlighted many positive and tangible outcomes associated with the implementation of the Nine Minimum Characteristics in the context of seasonal flooding in the Terai, including the effective implementation of early warning systems, the introduction of Disaster Risk Reduction (DRR) measures such as safe houses and raised hand pumps, and the establishment and training of task forces in preparedness and response. In some cases the measures were still to be tested by a serious flood. However, a key impact of the Characteristics was the move towards collective, community level preparedness, with the case study communities reporting increased confidence to deal with flood disasters.

For the flood-affected communities in the Terai interviewed as part of this study, the early warning system was the most useful Characteristic, enabling householders to evacuate their livestock and themselves before the flood waters arrived. Here, science and local knowledge came together, and a communication system was in place that linked the communities with local and national government. The early warning systems were

not, however, without limitations. For example, poor and unreliable communications infrastructure was seen to reduce warning times. However, annual drills before the monsoon meant that people were aware of the community response protocol and the need to prioritise and assist vulnerable groups, in particular the elderly, pregnant women, and children.

In some cases the Disaster Management Committee (DMC) structure worked well, particularly when strong connections were established between the ward and VDC/municipal level committees enabling integrated planning across the different scales. However, all too often this was not the case. In addition, Community Disaster Management Committees (CDMCs) were impacted by outmigration for employment, with those who were left behind sitting on multiple committees, and in some cases the most vulnerable groups were unable to participate as they needed to engage in wage labour. In contexts where there are established and active community groups, it may be more appropriate for these pre-existing groups to take on the role of organisational base.

The findings from the case study communities in the Terai suggest that formal written reports are ineffective at communicating the key outcomes of an assessment and planning process to the community. Community people rarely saw the final report and often felt that the process was for the NGO and government's benefit and not their own. Identifying a small number of key actions and displaying this information in the community, holding dissemination meetings, or working through established communication channels, such as task forces responsible for information sharing, may be more effective.

In the Terai, the Nine Minimum Characteristics have generally provided a very useful framework for guiding and facilitating preparedness and response efforts. However, we argue that the Nine Minimum Characteristics are not yet achieving resilience. Being resilient means that communities have the capacity to bounce back or even forward, and this requires livelihood security and enhancement, and local government support.

**Positive outcomes and challenges in rural hill and mountain communities**

A key challenge faced in the rural hill and mountain communities arose from the scale of the disasters being faced, such as drought. Unlike the Terai, where flooding was perceived as more relevant to daily concerns and interests, in the hill communities we observed a mismatch between local priorities and the perceived benefit of disaster preparedness. As a result, while (C)DMCs had been established, their purpose and role was often unclear to community members. The community preparedness and response teams were not perceived to be particularly useful by community members, and there were fewer examples of risk reduction measures being implemented across the six case study wards, reflecting perhaps less awareness of the actions that could be taken to reduce the risks associated with the particular hazards faced, e.g., landslides and drought.

There were also fewer examples of scientific, technical, and local knowledge coming together to address the hazards faced. This may be attributed to a lack of scientific and technical knowledge in some cases (for example, the science of landslide early warning systems is underdeveloped in comparison to flood early warning systems) and the challenges associated with the use of scientific knowledge in others (for example, there may be extensive knowledge available amongst the climate change community that could support communities to deal with drought, e.g. early warning systems, but this is not necessarily reaching communities through DRR channels). Drawing on examples of good practice from the Terai, there may be opportunities to establish NGO consortia which draw upon the expertise of different organisations, and partnerships between communities, local government, NGOs, academia, and the private sector to find innovative ways to reduce risk and enhance resilience.

**Positive but mixed outcomes in urban areas**

The importance of DRR amongst community members in urban areas was recognised following the 2015 earthquake. Communities were also aware, however, of the limits of what they could realistically achieve on their own (i.e. the actions and activities being promoted through the Nine Minimum Characteristics) in terms of preparing for and responding to a high magnitude earthquake. Participants in urban areas saw the problem

of earthquake risk reduction as an issue for government, involving for example urban planning, infrastructure development, and building code enforcement.

Participants reported a strong community response following the 2015 earthquake in the Kathmandu Valley. For example, many people were reported to have heeded public awareness messages, such as turning off gas in their homes and assembling in safe zones, despite what was perceived as only moderate successes in training and outreach, and a greater community reliance on television and other individual sources of information. However, the majority of collective community level responses documented as part of this study were organic and based on pre-existing social networks. These innovations show the potential for social protection and DRR based on the ideas and creativity of urban residents themselves.

The urban case studies highlighted some of the difficulties that can be expected in the transition from primarily rural to urban settings as new municipalities are established across Nepal. Such patterns of urbanisation are likely to result in increasingly heterogeneous communities with different languages, and understandings of cooperation and governance, highlighting the need for a flexible approach to implementing the Nine Minimum Characteristics.

**Recommendations**

The recommendations summarised below were co-produced with Flagship 4 partners during the Research Dissemination Workshop held in Kathmandu in August 2016. For the detailed recommendations, please refer to Section 6.

***General recommendations***

We recommend the continued use of the Nine Minimum Characteristics which provide a useful starting point for all CBDRR projects in Nepal, including projects beings implemented in the mountains, hills and Terai, across both rural and urban areas. However, it is important that the Nine Minimum Characteristics are used in a flexible manner and adapted for different geographical and hazard contexts to ensure their relevance to specific communities. We specifically recommend the implementation of the Characteristics in the mountain and hill districts which have not been the main focus of CBDRR activities in Nepal to date, and in urban areas where more research and practice is needed in order to understand how to effectively adapt and apply the Nine Minimum Characteristics in these contexts.

***Flagship 4 Advisory Committee and Consultation Group***

We recommend that the Nine Minimum Characteristics are revisited to clearly articulate what each is aiming to achieve and the key questions that need to be asked to guide their implementation. We suggest that the Flagship 4 Advisory Committee and Consultation Group works with Flagship 4 partners to add to and refine the example guiding questions presented in this report (Table 6.1), drawing on partners' experiences of implementing the Nine Minimum Characteristics in a range of community contexts, and to collate and shares examples of good practice. The Advisory Committee and Consultation Group may also wish to review the Nine Minimum Characteristics for overlap and consider the order in which they are presented. We also recommend the preparation of guidance notes which set out a more livelihoods-centred approach to DRR, and provide examples of how the Nine Minimum Characteristics could be used within wider development and humanitarian projects.

***The MoFALD***

We recommend that MoFALD develops a more appropriate and focused monitoring and evaluation mechanism to assess the role of the Nine Minimum Characteristics in enhancing community resilience. It is important that MoFALD continues to promote and support the capacity building of district, municipal and VDC level government in DRR through the provision of guidelines for the allocation and spending of funds for CBDRR, and the delivery of technical capacity building through CBDRR projects. We also recommend that MoFALD

clearly articulates the role of the Nine Minimum Characteristics within the LDRMP process, during the revision of the LDRMP guideline.

***Donor agencies***

We recommend that donors consider funding further research to better understand how the Nine Minimum Characteristics can be adapted for use in urban settings. We also encourage the development of more cross-sector funding calls on resilience, involving the DRR, climate change, livelihoods and economic development communities, and the use of relevant Characteristics within wider development and humanitarian projects, with the aim of moving beyond preparedness and towards resilience.

***NGOs***

International NGOs should be encouraged to use the Nine Minimum Characteristics as a starting point when designing their CBDRR projects in all contexts, and to feed into and help to refine the questions guiding their implementation in consultation with their local implementing partners. We also recommend that international NGOs share their experiences of adapting the Nine Minimum Characteristics for use in different contexts through the Flagship 4 Advisory Committee and Consultation Group, and feed their expertise into the hazard-specific working groups, and guidance notes designed to support the roll-out of the Nine Minimum Characteristics within wider development and humanitarian projects.

Local implementing partners should be briefed on the Nine Minimum Characteristics by the international NGO with which they are working. They should be encouraged and given space to apply the Nine Minimum Characteristics in a flexible way, with the communities themselves identifying their own needs in relation to CBDRR and the most appropriate mechanism for implementing the relevant Characteristics.

# 1. Background

### 1.1 Community-based disaster risk reduction

With disaster losses increasing worldwide, there is growing emphasis on the need to prepare for disasters and reduce underlying risk factors (Wisner et al. 2004). The role that communities and local government can and should play in disaster risk reduction (DRR) is widely recognised, with community-based DRR (CBDRR) becoming a cornerstone of DRR programming, promoted through the Hyogo Framework for Action and the more recent Sendai Framework for Disaster Risk Reduction. Such approaches are designed to reduce vulnerability and increase disaster resilience by responding to local problems and needs, capitalising on local knowledge and expertise, and strengthening communities' technical and organisational capacities to prepare for and respond to disasters (Wisner, 2006).

While the value of decentralising and institutionalising DRR at the local level is well recognised, with multiple examples of CBDRR projects in action (Twigg 2015), questions remain regarding how to support communities to build their resilience to disasters most effectively. Challenges often arise when CBDRR projects are implemented at the community level rather than being community owned, often reflecting the short-term nature of many CBDRR-funded projects (Maskrey 2011). This can impact negatively on the sustainability of CBDRR projects, particularly when communities are not empowered through skills training and/or funding (Delica-Willison and Gaillard 2012). From the perspective of the communities themselves, CBDRR can be seen as an added burden, especially when not joined up with either additional resources or greater decision-making powers (Allen 2006). Communities may also be reluctant to invest their own time and resources when they have other higher priority concerns (Jones et al. 2013). While CBDRR programmes may be designed to benefit communities at large, patronage and power can lead to elite capture (Delica-Willison and Gaillard 2012), while embedded and hard-to-shift participatory exclusions keep the most vulnerable at the margins.

The role of 'supra-local actors', including local and central government and non-governmental organisations (NGOs), is considered key to the effectiveness of CBDRR (Maskrey 2011). For Maskrey (2011), while it is essential that communities are the active subjects of disaster risk management (DRM), there are very clear limits as to what they can achieve on their own, as they often have limited control over resources and limited influence on decision-making processes. Indeed, the Sendai Framework for Disaster Risk Reduction clearly states in its guiding principles that "[w]hile the enabling, guiding and coordinating role of national and federal State Governments remain essential, it is necessary to empower local authorities and local communities to reduce disaster risk including through resources, incentives and decision-making responsibilities, as appropriate" (UNISDR 2015, p.13). These ambitious goals, however, are often difficult to achieve.

### 1.2 Community-based disaster risk reduction in Nepal

Located along the Himalayan Arc, Nepal is highly susceptible to a range of hydro-meteorological and geophysical hazards, including floods, landslides, glacial lake outburst floods, and earthquakes. In addition, high levels of poverty and social inequality prevail, with Nepal classified as a low income country and a low human development nation, ranked 157 out of 187 countries in the Composite Human Development Index (UNDP 2013). This combination of high hazard and social vulnerability renders Nepal highly susceptible to disasters. Since 2000, an average of 329 people per year have lost their lives due to disasters (MoHA & DPNET 2015).

Reducing disaster risk is a priority concern for the Government of Nepal. Despite having an outdated Disaster Management Act which places emphasis on disaster response and recovery, progress has been made in terms of preparedness and risk reduction (Jones et al. 2014). Since the late 1990s, the government has formally promoted CBDRR by establishing a legal framework as well as structures and planning processes to support communities in increasing their resilience to disasters. In 1996, the Government of Nepal produced the National Action Plan for Disaster Risk Management in accordance with the International Decade of Natural Disaster Reduction (Jones et al. 2014). This plan dealt with different stages of a disaster (preparedness, response and recovery) and was supported by the 1999 Local Self-Governance Act which delegated authority for the design

and implementation of DRR activities to local government through District Development Committees (DDCs), municipalities and Village Development Committees (VDCs). However, without specific guidance and funds provided to local government, this had little impact on DRR (Pradhan 2007). In 2005, the international Hyogo Framework for Action provided a much needed stimulus for further action. The National Strategy for Disaster Risk Management, which was approved by the Government of Nepal in 2009, set out the changes required to make Nepal more resilient to disasters, prioritising local level preparedness and response as a way of developing resilience. In the absence of an updated Disaster Management Act, the National Strategy is guiding DRR activities in Nepal (Jones et al. 2014).

Two sets of guidelines were subsequently introduced in 2011 to support sub-national DRR. With the support of humanitarian partners such as the United Nations (UN) agencies, the Ministry of Home Affairs (MoHA) produced 'Disaster Preparedness and Response Plan' (DPRP) guidelines for the district level (although also suggesting that they should be developed at the VDC level) (MoHA 2015). Meanwhile, the Ministry of Federal Affairs and Local Development (MoFALD), supported by the international NGO Oxfam, produced the 'Local Disaster Risk Management Planning' (LDRMP) guideline for municipalities and VDCs. A year later, in 2012, 'Guidelines for the formulation of District Disaster Management Plans' were produced by MoFALD. The Chief District Officer, appointed by MoHA, is responsible for the DPRP which is focused on response and relief, while the Local Development Officer, appointed by MoFALD, is responsible for the District Disaster Risk Management Plan (DDRMP), which aims to institutionalise DRM and contribute to sustainable development at the local level.

In their report to the Hyogo Framework for Action in 2015 (MoHA 2015), MoHA reported that all 75 districts had District Disaster Preparedness and Response Plans. As of December 2015, MoFALD reported that 10 districts had completed District Disaster Risk Management Plans (DDRMPs), along with more than 800 LDRMPs and 125 ward level Disaster Risk Management Plans (Acharya pers. comm.). While progress on paper is encouraging, the absence of a budget allocation at the district, municipal and VDC levels remains a key constraint to the completion of disaster management plans: "At the local level, while planning tools such as the LDRMP support communities in planning for DRM, budget allocation and implementation is limited. The Government of Nepal is beginning to address this issue by directing local authorities to allocate 2-5% of total revenue for DRR activities. However, there is a need to ensure local government is aware of this directive and has the capacity to act upon it" (MoHA 2015 p.9).

Non-government actors, mainly NGOs, play an important role in local level DRR in Nepal, providing technical support in the development of DRR plans and in the design and implementation of CBDRR projects. With the donor agenda shaped by international frameworks such as the Hyogo Framework for Action, donor funding (from multi- and bi-lateral donors such as the UNDP, the European Commission and the UK's DFID) is currently supporting a range of CBDRR activities. Funding for CBDRR is channelled largely through international and local NGOs, reflecting limited capacity and expertise at the district level to implement CBDRR projects. Traditionally, CBDRR has taken place on a largely ad-hoc basis in Nepal, resulting in duplication in some parts of the country and inactivity in others.

### 1.3 The Nepal Risk Reduction Consortium and the role of 'Flagship 4'

The Nepal Risk Reduction Consortium (NRRC) was instigated in 2009 by the UNDP and officially launched by the Government of Nepal in 2011. Led by the Government of Nepal, the NRRC is a unique mechanism bringing together humanitarian and development partners with the aim of developing a long-term disaster risk management action plan for Nepal (NRRC 2013). The NRRC has five priority areas or 'Flagships', reflecting the priority areas identified in the National Strategy for Disaster Risk Management. These are: 1. School and Hospital Safety; 2. Emergency Preparedness and Response Capacity; 3. Flood Management in the Koshi River Basin; 4. Integrated CBDRR; and 5. Policy and Institutional Support for Disaster Risk Management. We focus here on Flagship 4, CBDRR, which is led by MoFALD, reflecting a growing recognition within the Government

| | |
|---|---|
| 1. Organisational base at VDC / ward and community level  | A functional organisational base at VDC / ward and community level for the implementation and sustainability of DRR, which addresses the issues of protection, social inclusion (including gender balance), community ownership and participation and follows DRR initiatives. |
| 2. Access to DRR information  | Coordination mechanisms and partnerships to enable access to DRR information involving local, district and national level government structures, civil society organisations, private sector and vulnerable groups, including linkages with key institutions such as schools and hospitals. |
| 3. Multi-hazard risk and capacity assessments  | Ongoing, systematic, participatory, multi-hazard risk and capacity assessments which enable the monitoring and evaluation of DRR at VDC and community level and which link into district and national monitoring and evaluation systems. |
| 4. Community preparedness / response teams  | This involves community teams that are trained and equipped to provide hazard warning and evacuation information, light search and rescue and basic first aid. |
| 5. DRR / M plan at VDC / municipality level  | A plan at the local level which meets the Flagship 4 minimum requirements listed and is regularly updated, implemented and tested. |
| 6. DRR Funds  | Funds accessible to communities for priority DRR activities which are available at VDC / ward level and/or through community resource mobilisation efforts. |
| 7. Access to community-managed DDR resources  | Access to community-managed resources such as human and materials at VDC / ward levels for DRR initiatives. |
| 8. Local level risk / vulnerability reduction measures  | VDC / ward level initiatives on identification, prioritisation and application of local level risk / vulnerability reduction measures. |
| 9. Community based early warning systems  | Inclusive, community based early warning systems that are integrated with VDC / ward, district, regional and national early warning systems. |

*Table 1.1: The Nine Minimum Characteristics of a Disaster Resilient Community (Source: Flagship 4 2013)*

of Nepal of the need to link activities around disasters and development, with the IFRC providing coordination support.

With a budget of US$44.3 million (NRRC, 2013), the overall aim of Flagship 4 was to complete CBDRR activities in 1,000 VDCs and municipalities over 5 years (2011-2016). This included a commitment to creating and advocating for stronger coordination and collaboration between actors (governmental and non-governmental) working in CBDRR and disaster management more broadly; capitalising on the expertise of Flagship 4 partners to create a more consistent, holistic and harmonised approach to CBDRR at the local level;

and tracking progress against national targets and encouraging greater investment for scaling-up CBDRR across the country. MoFALD is now coordinating no fewer than 26 partner organisations within the Flagship (Acharya pers. comm.).

In order to address these objectives, the Flagship 4 community (including the Government of Nepal, international and national NGOs, UN agencies, donors and the Red Cross/Red Crescent movement) came together in series of workshops in 2010 and 2011 to develop a common approach to CBDRR. This also involved an analysis of ongoing CBDRR interventions, consultative meetings with stakeholders implementing CBDRR projects, and a review of published and grey literature on CBDRR and community resilience. The outcome was a set of Nine Minimum Characteristics which were to be promoted as the baseline of a disaster resilient community in Nepal for use in CBDRR projects (Table 1.1).

To assist implementing partners in operationalising the Nine Minimum Characteristics, a list of detailed output indicators was also developed. These indicators referred to, for instance, the proportion of members of local committees who should represent vulnerable groups. The indicators were informed by the government of Nepal's LDRMP guidelines. The Flagship 4 Handbook recommends that when designing a CBDRR project, implementing partners should include indicators in their logical frameworks. However, the Nine Minimum Characteristics were not in any way prescriptive in terms of how each Characteristic should be achieved.

The Nine Minimum Characteristics were originally designed with rural, flood-prone communities in the Terai in mind, reflecting the traditional focus of CBDRR activities in Nepal. However, given the trend of rapid urbanisation in Nepal and a growing number of urban-focused CBDRR projects, as well as a growing interest in CBDRR in the context of more remote hill and mountain communities, it would be beneficial to know whether the Nine Minimum Characteristics can be applied effectively to other hazards and in other geographical contexts. In addition, the Flagship 4 community has recognised that the Nine Minimum Characteristics were developed by outside CBDRR 'experts' rather than local implementing partners working with the communities, or indeed the communities themselves. This has led to calls amongst the Flagship 4 community for local level consultation and validation of the Nine Minimum Characteristics.

### 1.4 The Review of the Nine Minimum Characteristics of a Disaster Resilient Community

Five years on from the inception of the Nine Minimum Characteristics, a UK-based research team led by Durham University, in collaboration with the Nepali research consultancy Foundation for Development Management, was tasked with undertaking a review of the Nine Minimum Characteristics of a Disaster Resilient Community. The Review has been undertaken at the request of MoFALD, the NRRC Steering Group, and the Flagship 4 community, with the broad aims of understanding the impact of the Nine Minimum Characteristics from the community perspective and the applicability of the Nine Minimum Characteristics in different geographical and hazard contexts.

The Review was undertaken as a research project led by academics with experience of undertaking social science research on DRR in Nepal. The project was not designed to monitor or review the outcomes of specific projects. Rather, the research team used Flagship 4's CBDRR projects as an entry point to review the Nine Minimum Characteristics from the perspective of the communities themselves.

The specific aim of the research was to determine if communities that have been subject to a CBDRR intervention based on the Nine Minimum Characteristics were in a stronger position to protect themselves from, and to recover after, the severe stresses associated with a disaster such as an earthquake, landslide or flood. The Review was therefore concerned with the outcomes of the Nine Minimum Characteristics (i.e., the evidence to suggest that resilience has been increased), not simply inputs (e.g., funding) or outputs (e.g., numbers of community members participating in a training programme).

In order to address this aim, the study explored the following research questions:

1. What, from a community perspective, are the key factors that make a community resilient to a disaster and how do these key factors vary between locations (e.g. rural and urban; mountains, hills and Terai)? To what extent do the Nine Minimum Characteristics capture these community priorities?
2. How have development partners used the Nine Minimum Characteristics within their CBDRR projects?
3. What specific outcomes have the Nine Minimum Characteristics brought about at the community level and how have these outcomes benefited communities?
4. What lessons can be drawn from the implementation of the Nine Minimum Characteristics for future CBDRR programming in Nepal?

The community level research reported here was focused at the ward level and was undertaken in two phases: Phase 1 focused on 12 flood-prone wards in the Terai; and Phase 2 focused on 12 flood, landslide and earthquake-affected wards in hill and mountain districts.

The purpose of this report is to summarise the findings from the community level research and to set out recommendations for different stakeholder groups. We begin by outlining the methodological approach undertaken and introducing the case study districts, before setting out the research findings from Phases 1 and 2. This is followed by a discussion of general lessons that can be drawn from the case study communities in the mountains, hills and Terai, and rural and urban settings. The report culminates in specific recommendations that were co-produced in consultation with Flagship 4 partners - including government representatives from MoFALD, MoHA, the Ministry of Urban Development and the National Planning Commission, donor organisations, and NGOs - at the Research Dissemination Workshop held in Kathmandu in August 2016 and in follow-up meetings.

# 2. Methodological approach

The study was designed with input from MoFALD and the Flagship 4 Advisory Committee and Consultation Group, which included representatives from the Flagship 4 community to ensure that the research was aligned with the policy and practice needs of the CBDRR community in Nepal. Interim findings were shared with MoFALD and Flagship 4 partners for comment and validation.

### 2.1 Case study selection

We used the ward, the lowest administrative unit in Nepal, as the means of entry to the community whilst recognising that it is not uncommon for a number of communities to make up a ward. Flagship 4 partners were requested to nominate projects and wards for inclusion in the study which met the following criteria. The wards must: (1) have been directly impacted by an earthquake, landslide or flood in the past 3 years (2013-2015); (2) have been subject to a CBDRR intervention which began on 1 January 2011 or later (i.e., after the launch of the Nine Minimum Characteristics); and (3) be safe to access for the researchers. The Flagship 4 partner was also required to have strong local contacts in the case study wards with whom the research team could work to facilitate data collection. The final selection of case study wards was made by the research team, in consultation with local NGO partners, with the aim of including different geophysical settings (mountain, hills and Terai) and associated hazards (earthquakes, landslides and floods), along with both rural and urban examples.

Phase 1, which was undertaken in March 2016, focused on 12 flood-prone wards in the Terai located across five districts: Kanchanpur and Kailali in the Far West, Bardiya in the Mid West, Mahottari in Central Nepal, and Saptari in the East (Figure 2.1). Specifically, the study focused on five rural wards in VDCs and seven newly declared urban wards that were recently amalgamated into municipalities. It should be noted that while administratively these wards have urban status, they were still rural in nature.

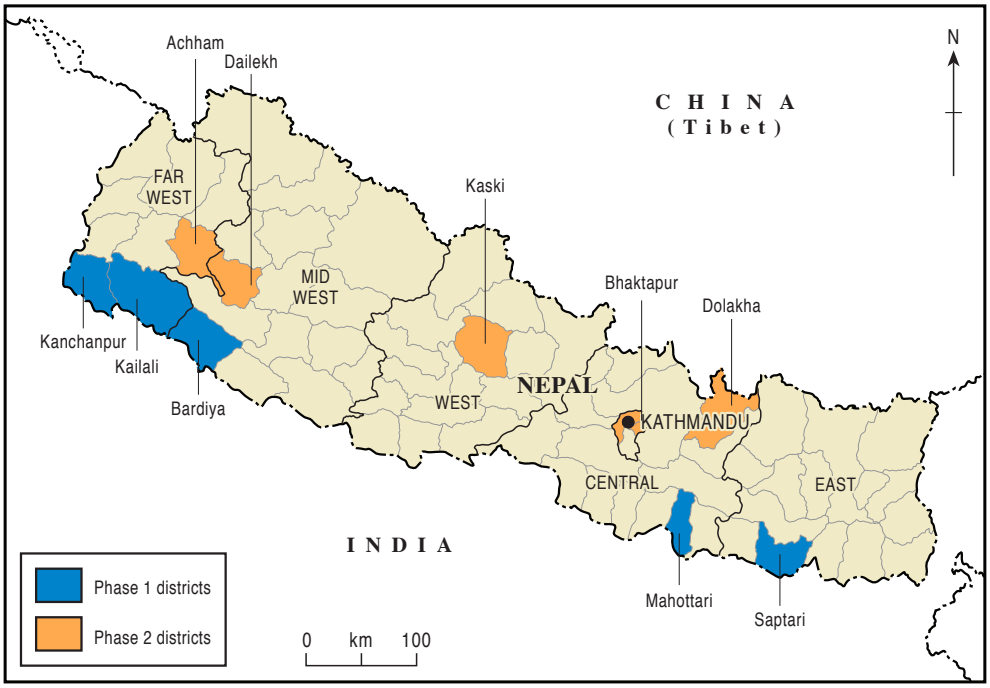



*Figure 2.1: The case study districts in Nepal.*

Phase 2 focused on 12 wards located across five hill districts: Achham in the Far West, Dailekh in the Mid West, Kaski in the West, and Bhaktapur and Kathmandu Districts in Central Nepal; and one mountain district: Dolakha in Central Nepal. Specifically, the study focused on six urban wards across three municipalities (Pokhara, Kirtipur and Thimi), and six rural wards within VDCs.

**2.2 Research methods and data collection**

The research began with a pilot study in Eastern Nepal involving members of the UK and Nepali research team and the Flagship 4 Coordinator, with the aim of piloting the interview and focus group questions to ensure clarity and consistency and that they served to generate the data required for the study. Following the pilot study, a two-day training session was held in Kathmandu with the research team, which comprised male and female researchers with experience in rural development, disaster research and participatory action research. The aim of the session was to explore the aims and objectives of the project, and the key topics to be investigated, the research methods to be used, ethical considerations, and data recording and analysis.

Meetings were held by the research team with the INGOs in Kathmandu, whose CBDRR projects provided the entry point for the study, to gather background information on the project, including how the Nine Minimum Characteristics were used in the project design and implementation, to identify possible case study communities, and to discuss fieldwork logistics.

A total of 48 person-weeks were spent gathering data across the case study communities. Qualitative methods were used with the aim of gathering in-depth knowledge of a small sample of communities, capturing the community voice. Where possible, the research team lived in the case study wards, building a rapport with householders to gain insight into the everyday lives and situated contexts of householders, and their decision-making environments (Rigg 2007).

The research involved a series of key informant interviews with representatives from local NGOs responsible for implementing CBDRR projects that have been informed by the Nine Minimum Characteristics, with a view to understanding how the Nine Minimum Characteristics have been used by implementing partners; and with other key community level stakeholders, for example, the secretary of the Ward Citizen Forum, the head of the Women's Group, and the head teacher of a local school, to gather background information about the case study communities.

The interviews were followed by a series of focus group discussions with community groups established as part of the CBDRR intervention, for example, the CDMCs and associated task forces; and with pre-existing community groups, including the Ward Citizen Forum, the Women's Group, and the Forest User Group (Figure 2.2). The aim of the focus group discussions was to capture the community perspective on their own vulnerability and resilience, and on the usefulness of the Nine Minimum Characteristics in helping the community to prepare for, respond to, and recover from, a disaster. Efforts were made to triangulate findings by identifying topics to follow-up and discuss with other key informants.

Extensive consideration was given to the language used, particularly around concepts such as 'resilience' and 'DRR' which do not easily translate into Nepali or other local languages. Efforts were made to keep the language straightforward via, for example, talking about a community's strengths rather than the community's resilience. In addition, the Nine Minimum Characteristics were not referred to directly; instead, the researchers focused on the content of the Nine Minimum Characteristics which was familiar to participants. During the interviews and focus group discussions, ranking exercises were undertaken using picture cards which depicted the Nine Minimum Characteristics, with the aim of determining which of the Characteristics were considered to be the main building blocks of a disaster resilient community and why.

Interviews were also undertaken with local government representatives from the VDC and the DDC in rural areas, and with the municipal government in urban centres, with the aim of understanding the role of local

*Figure 2.2: An example focus group discussion with community members in Mahottari District, March 2016 (top). Prioritising the Nine Minimum Characteristics with a women's group in Bardiya, March 2016 (bottom).*

government in CBDRR, the level of awareness of DRR policy and planning processes, including the Nine Minimum Characteristics and their associated outcomes. A full list of the interviews and focus groups undertaken is provided in Appendices A - C.

The interviews and focus group discussions were undertaken in Nepali or the local language as required. In instances where the research team did not speak the local language, local translators (usually social mobilisers, who also helped in building a rapport with the community) assisted. The interviews and focus groups were digitally recorded and a detailed summary of the discussions prepared, based on the recording. The recordings were also referred to during data analysis for fact checking.

### 2.3 Analysis

In analysing the data, a grounded theory approach (Crang 1997) was adopted whereby the notes were reviewed and coded thematically by the research team. The coding was undertaken manually with the codes reviewed by the research team and triangulated with the findings from a two-day debrief workshop which followed each phase of the data collection. The workshops involved a series of group discussions exploring in detail the core research questions. Members of the field-based teams were invited to share and analyse their findings, evidencing their points with the interview and focus group material collected. These discussions were captured by a designated rapporteur.

### 2.4 Challenges and limitations

The entire research project was undertaken over a relatively short period of six months, with a six week period in the field. A case study approach was adopted, covering 24 wards. Whilst a sample of this size will never produce statistically significant metrics to describe the outcomes of the Nine Minimum Characteristics, the breadth of the study was deliberately designed to capture a range of contexts which are representative of Nepal as a whole. As such, the study draws greater detail from a range of examples.

The research was reliant upon the nomination of projects by Flagship 4 partners. While many flood risk reduction projects were nominated in the Terai, few projects were nominated in the districts affected by the 2015 earthquake, which would have offered a recent major test of the Nine Minimum Characteristics. This reflects both a focus on flood risk reduction by the CBDRR community to date, and ethical concerns associated with undertaking research in earthquake-affected communities. Projects were, however, recruited in the Mid and Far Western Hill Districts which enabled the research team to explore the outcomes associated with the Nine Minimum Characteristics in more remote hill communities.

A key methodological challenge was the difficulty in identifying case study wards that have been subject to a CBDRR intervention informed by the Nine Minimum Characteristics, and which have also experienced a recent disaster event that could act as the 'test'. Prior to 2016, Nepal had experienced two weaker than normal monsoons. While this is likely to have reduced the number of flood events and monsoon-triggered landslides that might be expected, the weaker monsoons have also subjected many communities to drought conditions. This will have influenced people's perceptions of hazard, risk and their own vulnerability, as well as the hazard conditions under which we could 'test' the Nine Minimum Characteristics. For example, in Phase 1, communities in one of the case study districts (Bardiya) had experienced severe flooding in 2014 and communities in two other districts had experienced seasonal flooding (Kanchanpur and Kailali). The case study districts in Central and Eastern Nepal had not experienced any recent flood events. In Phase 2, communities in Dolakha, Bhaktapur and Kathmandu were affected by the 2015 Gorkha earthquakes, but the case study communities in Dailekh, Achham and Kaski had not experienced comparable rapid-onset disaster events, such as landslides and earthquakes, although drought was a significant hazard in Achham. In contexts where a disaster event had not been recently experienced, we took a scenario-based approach and asked community level stakeholders to consider their resilience to a possible future event. However, while this offers useful insights into the potential effectiveness of the Nine Minimum Characteristics, it is difficult to determine their effectiveness for community level resilience building in terms of concrete outcomes in the event of a disaster.

Some participants felt that it was too early in the project process to see outcomes. For example, as summarised by a VDC Secretary: "*I think we are at the initial or starting phase and it may be too early to discuss about the outcomes. People slowly understand the importance of projects like this.*" Similarly, a representative from a local NGO, who has been working in DRR for more than a decade, believes that it can take ten to fifteen years to see any outcomes; while a teacher in Achham felt that current development projects were too short to bring about concrete benefits. Whilst mindful of this, concrete outcomes were reported by some communities, local government representatives and implementing partners, particularly in the context of flood risk reduction in the Terai.

In the majority of cases the research teams were very well received, but there were a few isolated cases where the communities expressed frustrations at the number of projects and consultations, particularly when they felt that they had received no direct benefit. As one research participant in Mahottari explained: "*Everything we had to say we said it a year back during the training we received for four days, wrote 20 pages or so about our community, drew maps and what happened? You are all here for your gain.*" Once the researchers had introduced and explained the purpose of the research, participants were willing to continue, but this does highlight a wider set of issues around the impact of research and development interventions, the ethics of which require further consideration.

The methodological approach of interviews and focus groups worked well. The only notable challenge faced was in relation to the ranking of the Nine Minimum Characteristics. At the community level, participants felt comfortable identifying one or two Characteristics that had resulted in significant outcomes. However, the research team was often told that the Nine Minimum Characteristics were all interlinked and equally important, making it difficult to rank them. We therefore focused on identifying the most significant ('keystone') Characteristics only and identifying key aspects of a disaster resilient community as perceived by the communities themselves which may not already be included within the Nine Minimum Characteristics.

**2.5 Research ethics**

The research was subject to Durham University's requirements for ethics and data protection review. The ethical practices were informed by three codes: the British Sociological Association's Code of Ethical Practice; the Ethical Guidelines of the Developing Areas Research Group of the Institute of British Geographers; and the European Commission's Ethics for Researchers. Due sensitivity was also given to the position and views of the Nepali members of the research team, bearing in mind their in-depth knowledge of local contexts, cultural and political, and their accumulated field experience. The ethical practices were discussed at length during the research training workshops to ensure that all field researchers were aware of their ethical obligations, including participant consent, anonymity, the right to withdraw, the secure storage of audio recordings and field notes, and the taking of photographs. During the research process, no concerns were raised regarding ethical practice by the research team or participants.

# 3. Research findings: Phase 1, communities in the Terai

### 3.1 Community views on their own vulnerability and resilience

The CBDRR projects informed by the Nine Minimum Characteristics targeted poor and marginalised communities in the Terai. Everyday challenges faced across the case study wards in the different development regions were largely concerned with poverty, resulting from landlessness or low agricultural productivity, and limited local employment opportunities.

In some of the case study communities in Bardiya, Saptari and Mahottari, land ownership was a significant issue, with many households not in possession of land ownership documents. As a result, households were unable to take out loans using their land as collateral. In other communities, land holdings were reported to be small and susceptible to seasonal flooding and drought, making it impossible for households to meet their subsistence needs. As one participant in Bardiya explained: "*Land has been lost* [to floods]. *Households have land on paper but have nothing to farm and do not receive compensation from government.*" Participants also reported damage to crops as a result of hail storms, pests, and wild animals including elephants and antelope.

In the absence of productive farmland and local employment opportunities, all 12 case study communities reported high levels of outmigration by young men, either for employment in nearby cities in the Terai or Kathmandu, seasonal employment in India, or to the Middle East for work as labourers. Such outmigration was reported to be having a significant impact on the human resource capacity within communities, with women, children and the elderly being left behind. For some participants, this had a positive impact, with reports of women's empowerment and engagement in decision-making (for example in the case study communities in Saptari and Bardiya); for others, participants felt that the outmigration of young men was responsible for a lack of leadership in the community, and the absence of people to engage in development activities.

Access to market centres and government services, including health posts and schools, was an issue in the case study communities in Saptari, Kailali and Kanchanpur. In Saptari, participants reported that there were no health posts or government schools in the VDC. In Kailali and Kanchanpur, schools and health posts were a long distance from the case study communities. Children were unable to attend school during the monsoon as the community bridge was impassable in Kailali and they had long distances to walk in Kanchanpur, both leading to high drop-out rates. In Kailali, the nearest market was three hours from the communities by foot, while in Kanchanpur, the road to the market from the case study communities was closed for 3-4 months during the monsoon.

Health issues were a significant concern across the case study communities. Participants highlighted the vulnerability of the elderly and children to pneumonia in the winter, and diarrhoea and dysentery during the monsoon. A lack of toilets in the case study communities was a particular concern in Saptari and Bardiya, and was linked to contaminated drinking water and epidemics, particularly during seasonal floods. The heightened risk of snake bites was a concern during the monsoon, particularly in communities with standing water due to poor drainage such as Mahottari and Saptari. Violence and discrimination against women were reported in Bardiya and Saptari, although the situation was felt to be improving as a result of awareness raising programmes.

For some communities their focus was on everyday livelihood concerns rather than DRR. As one participant from a case study community in Kailali explained, "*I am unable to find the* [Nepali Rupee] *NPR 800 to send my child to school. How can I prepare for floods?*" Similarly, for a participant from Bardiya: "*We don't know when the flood will come today or tomorrow, how can you prepare? We can't make rotis beforehand and we don't have time to prepare dry foods as we are all in the field busy with plantations.*" However, with the constant threat of seasonal floods, which were seen to damage and destroy farmland and crops, floods remained a significant concern for many. Some participants also reported that they live in fear of a high magnitude, large scale flood occurring.

The issue of drought was also raised. In the case study communities in Mahottari, this was linked to the construction of an embankment to reduce the flood risk. While this has been achieved, the communities can no longer use the river water for irrigation which is having a significant impact on farming, particularly given the low rainfall experienced in the past few years. According to a representative from a savings and credit group, economic activities have been completely altered by the embankment, with people abandoning their farmland and migrating for day wage labour. In Saptari, the construction of spurs (embankments that extend into a river to divert fast flowing water away from vulnerable river banks) has successfully diverted the Koshi River away from the community, but drainage problems have resulted, with farmland impacted by severe water logging which destroys crops and farmland. For the landless fishermen (*Majhi*) in Mahottari, the migration of the Koshi River is having a significant impact on their livelihoods, as they are forced to travel further to fish.

The case study communities are used to living with floods and have developed their own coping strategies. For example, respondents reported tying their crops to the ceiling of their homes to protect them from flood waters and moving their belongings before the monsoon to the homes of family members in neighbouring villages that are safe from floods. In some cases, small scale disasters served as opportunities for people. For instance, during seasonal floods of low magnitude, people fish and collect wood and dead animals swept away by the flood waters. However, these traditional coping strategies only helped to some extent. Householders often cannot afford to build houses on stilts or raised platforms, while grain stores made of mud are often susceptible to damage by even seasonal floods. Collective activities promoted through the Nine Minimum Characteristics, such as construction of community safe houses and community grain stores, have assisted poor families to prepare and respond more effectively.

When asked what makes their community safe in the context of flood events specifically, participants highlighted the usefulness of early warning systems which have the potential to provide warning times of three to five hours, and DRR infrastructure, including safe houses for the vulnerable, raised grain stores to protect crops, safe places for livestock to shelter, and raised hand pumps to reduce the likelihood of drinking water contamination. In addition, respondents identified the importance of: a strong, functioning local government in supporting communities to prepare for, respond to, and recover from a disaster; access to security forces and health services in the event of a disaster; and access to proper education and employment opportunities which can strengthen their resilience in the longer-term. For the research participants, their main priorities for CBDRR were economic development, early warning systems, DRR infrastructure and access to local government.

Many participants felt that the Nine Minimum Characteristics had enhanced their resilience to flood events. Their awareness and confidence to cope with, and respond to, flood events had increased. As a CDMC President in Kailali District explained: "*The community had accepted flood as their fate and were unaware that they could do something to prepare for the flood. Now as they know about early warning systems, emergency fund, rescue and response team, first aid team… they have developed a sense of confidence to face disaster like flood.*" In Bardiya, many participants felt that the community preparedness measures implemented had contributed to a reduction in human casualties due to floods. They compared the 2004/5 flood disaster where more than 100 people lost their lives across the district with a major flood in 2014 where the impact in the CBDRR communities in Bardiya was significantly less. While there were no human casualties or loss of livestock, houses and food stores were damaged. Participants attributed this to an early warning that was issued (Characteristic 9), although the system itself did not function perfectly; the identification of safe places for people to evacuate to (Characteristic 3); and trained first aid and search and rescue teams (Characteristic 4) that were on hand to locate and help vulnerable people evacuate. As summarised by one CDMC member in Bardiya: "[Back in 2004/5] *we had no idea about early preparation, no early warning system was introduced…now we have some life jackets, ropes, we know where to get information.*"

In other communities in the Mid and Far Western Terai, it was reported that there used to be injuries especially among older people, differently-able people and children during seasonal flood events but that such injuries are now less common as the trained task forces (Characteristic 4) helped with the evacuation. They also noted that

livestock have been saved from seasonal floods as evacuation plans are now in place and safe areas for livestock have been identified (Characteristic 5).

Participants in the case study wards in the Mid and Far Western Terai noted that while CBDRR interventions have had a positive impact in the short term, houses are repeatedly damaged and in some cases destroyed, as householders do not have the financial resources to construct flood resistant homes or to relocate to safer areas. As one participant, a member of a Dalit community in Bardiya, explained: "*This is my fourth house in ten years of living here.*" For the majority of participants across the case study wards, it was felt that raising the economic standard of people would increase their resilience in the long term, as they would have the economic resources to prepare for disasters. This, however, requires access to income generating opportunities.

### 3.2 Outcomes associated with the Nine Minimum Characteristics

In this section we take each of the Nine Minimum Characteristics in turn and summarise how they have been implemented and the specific outcomes reported by the research participants (including representatives from the case study communities, local government and the implementing NGOs) and observed by the research team. We set out how these outcomes have benefited communities, the difficulties encountered in implementing them, and how some characteristics might be modified in order to increase their impact and benefit.

#### *3.2.1 Characteristic 1 - Organisational base at VDC, ward and community level*

In line with MoFALD's LDRMP Guideline, Local (VDC level) Disaster Management Committees (LDMCs) had been established by three of the case study projects in Kanchanpur, Kailali and Saptari. CDMCs had been established in ten of the twelve case study wards. In two wards (one in Kailali and one in Bardiya), CDMCs had been established at the sub-ward level to represent specific communities within the ward, reflecting the specific hazard exposure and social organisation. In a small number of cases, groups have been reformed or restructured. For example, the CDMC in one of the case study communities in Bardiya was formed from an existing but inactive Flood Early Warning Committee. In one of the two communities that did not have a CDMC, the Community Forest User Group was undertaking some DRR activities around forest fire management, bioengineering and managing open grazing to reduce landslide risk.

There were positive examples of communities working as a team to address floods as a result of the CDMCs. As a *Bhanmansha* (local leader) in one of the case study communities in Kailali explained: "*The CDMC has been very effective to bring different community members together. Before the formation of the CDMC, people did not come as a group to respond to flood….CDMC has been able to make the community feel the sense of togetherness and helped the community to come together to tackle their problems during the time of disaster.*"

The level of engagement between the VDC and community level committees varied, with limited engagement in the case study communities in Kanchanpur, and stronger engagement in Kailali and Saptari. In Kailali, a Planning Sub-Committee has been established under the LDMC which was responsible for monitoring the CDMCs, acting as a bridge between the VDC Secretary and the CDMCs. The LDMC also covers and provides support to wards within the VDC that do not have CDMCs. In one of the case study communities in Saptari where the CDMC is less active, the Savings and Credit Cooperative meets monthly with the LDMC to discuss and take decisions regarding development issues, including CBDRR. They have, for example, been engaging with the VDC regarding the available development budget allocated for DRR. In another ward, the CDMC and LDMC came together to meet with the Government of the Indian State of Bihar to protest against the reconstruction of a damaged spur, constructed to reduce the risk of flooding, which was affecting the drainage of fields. This highlights what can be achieved when the community has strong leadership and the self-assurance to engage with government.

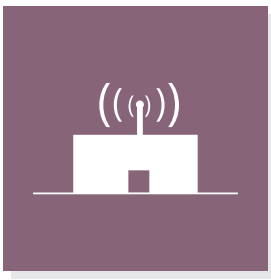
CDMC members were largely selected based on how active they were in the community and their level of knowledge of disasters and disaster management. The involvement of vulnerable and marginalised groups was seen to vary. For example, in one ward in Bardiya, research participants from the Dalit community were aware of the CDMC and they participated in some meetings but there were no formal representatives from the Dalit community on the committee. In another, the most vulnerable households to floods in the community were unable to participate in meetings as they were engaged in day wage labour. They were, as a result, replaced on the CDMC. Overall, it was reported that CDMCs comprising representatives from different caste, ethnic and marginalised groups were dominated by the privileged elite, while CDMCs comprising marginalised and vulnerable groups only were more active in their participation.

A high level of female participation in the CDMCs was reported in the case study communities in Bardiya, Kailali and Saptari, with two of the CDMCs being led by women in Saptari and Kailali. There were several reasons for this: (1) there was a notable absence of men in the case study communities reflecting outmigration for employment; (2) the available men were found to be less interested in participating as there was no financial remuneration for their involvement; (3) as women are becoming more empowered through education, they were getting more involved in committees and organisations; and (4) NGOs were actively encouraging female participation in CDMCs, reflecting their inclusive approach to CBDRR.

The number of community-based groups in the case study wards was found to be very high, with significant overlap in membership potentially overburdening some individuals. For example, members of mother's groups and forest user groups were also CDMC and task force members. In some wards, existing community groups were found to be engaged in flood preparedness and response. For example, in Kanchanpur, community groups were encouraging people to prepare for floods and to manage the river beds and banks long before the Nine Minimum Characteristics were introduced; and in Kailali, a local community awareness committee supported the community in flood response. It was unclear the extent to which the Nine Minimum Characteristics were building upon these initiatives. Some participants felt that "[o]*rganisations come into the community, make groups and then focus all of their activities among that group. These groups have to go beyond themselves and spread awareness…Instead of making new groups, organisations should try to make the existing groups more effective.*" (Focus group participant from a Savings and Cooperative Group in Bardiya). We note that development agencies (including MoFALD and the INGOs designing CBDRR projects) are very aware of the high number of community groups. This reflects, to some extent, the siloed nature of development programming both within government and the international development community.

While the LDRMP guidelines state that the CDMC should meet on a monthly basis, this was rarely found to be the case. The CDMCs were active when necessary, for example, prior to the monsoon season in preparation for the seasonal floods, but many members felt that monthly meetings throughout the year were not necessary. The majority of CDMC members were from poor households with many competing priorities and limited time to convene or participate in meetings.

In some of the case study communities, the level of community ownership of the CDMC was questionable, with participants seeing the committee as a group set up and run by a local NGO. Community ownership was observed in communities that had experienced a recent flood event and where flood risk reduction was a higher priority concern, such as Kailali where three rivers surround the community; and where the committee has been handed over to an existing and active community group, for example a local cooperative in Saptari.



### *3.2.2 Characteristic 2 - Access to DRR information*

Information about flood hazard was gathered by the communities themselves through their own monitoring of river levels and changes in the flow and colour of the river, as they have traditionally done. Whilst householders also listened to

weather forecasts on the radio, it was unclear how accurate these forecasts were or how they informed household and community decision-making.

More formal flood early warning systems had been established in all communities (see Characteristic 9). In the case study communities in Kanchanpur, Kailali and Bardiya, information on the height of the river was provided by the gauge reader upstream. The gauge reader communicates with the VDC, NGO, the CDMC Chairperson, early warning system task forces, and village leaders, and the alarm is then raised within the communities. Communication channels varied between communities. For example, in the predominantly Tharu communities in Kanchanpur, the *Badghar* (village chief) and *Chaukidar* (assistant) informed householders using hand megaphones and sirens. In other communities, the early warning systems task force assumed this role. Focus group participants showed good awareness and understanding of the communication and response protocols, e.g. what the different sirens mean and how they should respond. Participants noted that all community members have the telephone number of the gauge reader upstream written on the walls of their houses, and can contact the reader directly.

Mock drills for the early warning systems were an annual activity involving the case study communities in Bardiya and Kanchanpur. The mock drills were designed to involve the whole community and participation was reported to be high, the exception being one community in Bardiya, where a Dalit sub-community did not participate because they were involved in day wage labour (this was the same community where Dalit households were not formally represented on the CDMC, as they were unavailable to participate in meetings).

Strong links were observed between the CDMC and local NGOs implementing the CBDRR projects, who were often the only source of DRR information for the communities, through the CDMCs. As noted by a focus group participant in Kailali: "*Before the CDMC there was no formal source of information about floods.*" In some communities, early warning task forces and female volunteers disseminated information on flood risk reduction pre-monsoon. In other communities, the *Badghar* and *Chaukidar* took on this role. This highlights the importance of understanding community culture including social hierarchy and how decisions are made within a community, in order to find the most appropriate means of communication.

Awareness raising activities included how to prepare for floods, e.g. securing belongings, preparing dried food, identifying safe spaces, and how to reduce the risk of health hazards after a flood, e.g. boiling drinking water. In Kailali, Bardiya, Mahottari and Saptari, awareness raising also focused on how to reduce the risk of fire during the dry season. A range of communication channels were used, including hoarding boards displaying hazard maps and weather updates; the dissemination of calendars which included important contact numbers; radio jingles; and participation in programmes upstream to learn about flood monitoring. As noted by one key informant in Saptari: "[m]*ost of the people here are non-literate it is not effective to use such media* [hoarding boards, leaflets, posters]. *Sometimes using posters, pamphlets and even cartoons makes people angry. They confront us by saying 'are you mocking us?'.*" A group in Bardiya highlighted that they do not listen to the radio and that they watch Indian television channels, highlighting the need for local government and NGOs to consult communities to ensure that they are using the most effective communication channels to reach the community.

Importantly, effective linkages between District government, the VDC and ward level CDMCs were missing. As a result, the majority of case study communities were not receiving information from the District DRR resource person or from the VDC and they did not know who to approach for technical or financial support. Some exceptions included a community forestry group who received technical training from the District Fire Office in Mahottari, and the provision of training by the District Agriculture Development Office in off-season vegetable farming in Bardiya.

### *3.2.3 Characteristic 3 - Multi-hazard risk and capacity assessments*

Vulnerability and Capacity Assessments (VCA) had been undertaken in the majority of wards, the exception being the case study wards in Mahottari, where the focus was on VDC-level planning with some involvement of community people, although the outputs from the assessment were unclear.

The VCA involved the identification of hazards facing the community, vulnerable places and vulnerable groups from the perspective of the community people themselves but the process itself was led by the NGOs. In some cases, the assessment involved CDMC members and community leaders only, with limited awareness of the process beyond the core group, although people were aware of the hazard maps that were produced and displayed throughout the community (for example: Figure 3.1).


*Figure 3.1: An example hazard map displayed in a case study community in Kailali.*

In other cases, for example in Kailali, there was reported to have been a good level of community participation, with the community being informed during the VCA process about a range of hazards that could affect the community and how they could prepare. There was, however, a notable lack of involvement of a wider group of stakeholders, for example health professionals, in compiling the multi-hazard risk and capacity assessment across the case study wards. This was surprising given the community concerns around epidemics and flood-related health hazards, and the training provided to reduce the risks faced by the NGOs.

While a range of hazards were initially considered by the VCAs, in the majority of cases the CBDRR interventions focused mainly on floods. In some wards this reflected the priority concern of the case study communities. In others, flooding was one of a number of hazards and risks identified but flooding was prioritised over others as it was the pre-determined focus of the CBDRR intervention. For example, in Saptari where the pilot study was undertaken, the focus of the CBDRR project was risk reduction in relation to a high magnitude flood from the Koshi River rather than seasonal flood events that were of greater concern to the community. The focus of the CBDRR intervention may also reflect the technical expertise and capacity of the NGOs implementing

the CBDRR projects. Having a pre-determined focus can reduce the ownership and buy-in of the community, particularly if the community does not perceive the prioritised hazard to be their main concern.

The majority of VCAs were undertaken as a one-off activity and it was unclear if the case study communities saw value in and would therefore update the assessments. For example, in a community in Bardiya, participants noted that hazard and vulnerability data were collected every year but there was some confusion regarding what they was used for and how the data informed assessments and plans. A task force in Saptari, however, noted that every year the most vulnerable households were identified. This is a complicated issue: while on the one hand the identification of vulnerable households enables the community to reach out to highly vulnerable people, such a categorisation has the potential to introduce stigma. Beyond the community hazard maps, and the identification of vulnerable people and households for use by the task forces in the event of a flood, it was unclear the extent to which the assessments informed the DRR plans and how (see Characteristic 5 below).

*3.2.4 Characteristic 4 - Community preparedness/response teams*

Search and rescue, early warning systems and first aid teams had been formed under the CDMCs in the majority of wards, with the exception of Mahottari. In one ward in Bardiya, task forces had been established at the community (sub-ward) level. There were also some examples of additional preparedness and response teams being formed. For example, in two of the case study wards in Bardiya, teams of female volunteers were also established, with the responsibility for door-to-door information sharing and awareness-raising, which was proving effective in terms of coverage and reach. In Saptari, a specific relief team was mentioned, although the role and activities that the team was engaged in were unclear. In Mahottari, an early warning system committee had been established at the District level involving ward level representatives up-stream, mid-stream and down-stream. Search and rescue training was also provided, involving representatives from the case study wards, but no team was established.

The CDMCs recruited active, experienced and willing people to join the task forces and response teams, with high recruitment of women, particularly for first aid. In some communities, for example in Bardiya, the youth also played an active role. In Saptari, the issue of literacy was also raised, with efforts made to ensure that there was one literate member on each team. Some participants felt that not enough people had been trained, for example to replace those who are sick or who had migrated for employment. Training was provided by NGOs and in some cases the army, for example in flood response (swimming and rescue), first aid, and identifying vulnerable groups. However, a universal issue raised across the case study communities was the lack of follow-up training and support. Some members received their training in 2010, and felt that they would have benefitted from refresher training as they were struggling to remember what they had learnt. In some cases, equipment had also run out or had not been updated, for example first aid resources.

Retaining task force members was a universal issue across the case study communities, with many members who had been trained in search and rescue and early warning system operation migrating for employment; while in the case of first aid teams, a few women stepped down when they were married. In both cases, the task force members had not been replaced. In the case study communities in Kanchanpur, it was noted that the voluntary nature of the task forces was demotivating for members. However, this issue was not raised elsewhere, suggesting that task force members in general saw the benefit of volunteering for the committees. Several participants highlighted the benefit of having an organised disaster response effort in the community before outside help arrived, and also the ability to support and help neighbouring communities and districts, as one community did in Saptari.

With seasonal flooding occurring every year in the Mid and Far West, the early warning system team was found to be active in the case study communities, although meeting less frequently than when they were first established.

Several communities reported lists of vulnerable households, which continued to be updated annually. Other task forces were reported not to be functioning as teams but the members were willing to assist in the event of a disaster. The task forces were reported to have functioned well during the large floods in Bardiya in 2014 and in response to seasonal floods in Kailali and Kanchanpur (see section 3.1 above), with vulnerable people being evacuated safely. Other untrained members of the community were also active in the response and recovery effort, a strength which the CDMCs may wish to harness more formally. In the absence of floods in the case study communities in Mahottari and Saptari in Central and Eastern Nepal respectively, it was not possible to assess the effectiveness of these groups. However, in some communities in Saptari, the first aid team had been instrumental in dealing with seasonal illness including diarrhoea, dysentery and skin allergies, highlighting the benefits of such training; while the search and rescue team responded to a fire in 2015, successfully bringing the fire under control.

*3.2.5 Characteristic 5 - DRR/M plans at VDC/municipal level*

While CBDRR is a clear priority for the Government of Nepal - as indicated by the development of policy guidelines, Minimum Conditions and Performance Measures of Local Bodies, and the associated budget allocation to support CBDRR activities - challenges remain in the implementation of CBDRR policy at the VDC and municipal levels. For example, as noted by the local NGO representatives interviewed, barriers included a lack of flexibility on the part of the VDC, late decision-making and political interference and influence. NGOs have often led the development of the LDRMPs, with some involvement of VDC Secretaries and Municipal Executive Officers, reflecting limited capacity at the VDC and municipal levels. LDRMPs were found to be one of many competing priorities for local government officials. As a result, implementation of the plans was a significant challenge across the case study districts.

The majority of case study wards had formulated ward level CDMC plans in accordance with the LDRMP guidelines, the exception being the case study wards in Mahottari. In some wards, the CDMC plan was informed by the VCA, while in others, the assessment and plans appear to have been formulated separately. NGOs often led the process working with the CDMC and it was often only the people directly involved in the plan that were aware of its existence and content. For example, in one case study community in Kailali, even the community leader was unaware of the ward level DRR/M plan; while in Saptari, task force members were unware if a plan had been developed or not. On the occasions when the wider community was involved in the planning process, participants remained unclear as to how the plan had been used.

Ward, VDC, municipal and district level DRR/M plans were often developed independently with limited integration. A number of CDMCs reported sharing their ward level plans with the LDMCs but it was unclear if the ward plans informed planning at the VDC/municipal level. There was some awareness of the VDC/municipal LDRMPs at the community level, particularly when CDMCs members were involved in their development. However, in general, participants were largely unaware of their contents or plans for implementation.

The absence of local government support in the development and implementation of plans at the ward level was noted by case study CDMCs in Kailali, Kanchanpur and Bardiya. This was attributed, at least in part, to the high turn-over of VDC staff, which makes it difficult to take plans forward, and in some cases the absence of ward level officials following the amalgamation of VDCs into municipalities. In some cases, the Ward Citizen Forum provided a useful channel through which to reach government, but this depended on the level of activity of the Forum. For example, in one case study ward in Bardiya, the Ward Citizen Forum provided a mechanism to reach the municipality in the absence of an elected representative at the ward level. While in another ward in the same municipality, there was reported to be no link between the CDMC and the Ward Citizen Forum which does not see the ward level DRR/M plan. In Saptari, a ward citizen forum in one of the case study wards was reportedly unaware of ward level DRR/M plans, with DRR not included in the 14-step annual development

planning process, and only discussed when a complaint was received, for example, water logging and drainage problems which received financial support from the DDC.

The activities and actions identified in the ward level DRR/M plans included mock drills, awareness raising activities and training of task forces. However, with limited resources at their disposal, it was very difficult for the CDMC to implement the activities outlined in the plan without the support of the NGO or local government. DRR plans were rarely linked to the community DRR fund, which was often seen as an emergency fund rather than a fund for DRR activities (see Characteristic 6 below).

***3.2.6 Characteristics 6 - DRR funds***

Separate emergency funds had been established in the majority of communities, with the exception of Mahottari and a community in Bardiya, where the DRR/emergency fund was part of a wider community fund. While in some cases NGOs provided seed corn funding, for example in Bardiya and Saptari, community emergency funds relied largely on collections of between NPR 5 and NPR 50 per household per month. In one ward in Kailali, it was noted that some of the poorest households could not afford to contribute to the fund; while in one ward in Bardiya it was recognised that the community needed a means to sustain the fund beyond the CBDRR project as the community was very poor. In some cases, communities were adding to their emergency funds through community level income generating activities such as a fish farming project in Saptari or through the toll paid to cross a newly-constructed bridge in one of the case study wards in Kanchanpur. The value of the community emergency funds ranged from NPR 10,000 to NPR 35,000 (approximately £65-£230 (£ = GBP)). The emergency fund in the case study communities in Kanchanpur was significantly more, with one ward generating profits of NPR 300,000 (£2,000) from a community livelihoods project involving the farming and sale of sugarcane and grasses fund (see Case Study 3.1).

In a number of cases, guidelines had been prepared outlining how the emergency fund could be used, with participants having good knowledge of the funds available at the community level and how they could be accessed. A few examples were shared of the emergency fund being used to cover the costs of repairing DRR equipment, e.g. the community boat. However, in general, the funds were used in an emergency capacity to support households affected by disasters, for example, to provide food to flood victims or to repair houses damaged by floods, and not for the implementation of DRR plans. As a representative of a pre-existing community group in Kailali explained: "*Because of this emergency fund, at least none of the community members have to stay hungry during emergencies.*" In all communities, the emergency funds were reported to be used to provide loans to householders at low rates of interest.

While emergency funds exist, the need for income generating activities was raised during all community level focus group discussions, the issue being that without addressing underlying poverty, communities are unable to bounce back even from seasonal disasters. With households across the case study communities relying largely on day wage labour, they struggle to bounce back every year from the damage and losses they encounter during the floods. Elsewhere, this has been called the 'ratchet effect' (Chambers 1983), whereby small scale disasters lock people into poverty. As one focus group participant from a CDMC in Kailali explained: "*Several households get damaged by the seasonal flood but people do not have money to build safer houses. They end up making weak mud houses which are again affected by the next seasonal flood.*"

At the VDC and municipal levels, there were different sources of DRR funding available. Some LDMCs had established emergency funds with seed funding from government and NGOs, e.g. Kailali. The VDCs and municipalities are also required by MoFALD to allocate 5% of their development budget to DRR. However, there was some confusion around this and while some VDCs had set aside funding, others had not, and those

that had were using the funds largely for disaster response and, in some cases, the construction of infrastructure (roads and bridges) which had indirect DRR benefits.

**Case Study 3.1: Livelihoods - a missing characteristic?**

*"All the Nine Minimum Characteristics are important and useful for effective preparedness and response of the community. However, these characteristic still lack the livelihood aspect and the effective ways to deal with the recovery part of the disaster which is very important."*
(Local NGO representative, March 2016)

A case study VDC in Kanchanpur District in Far Western Nepal is highly prone to flooding. While the floods rarely result in loss of life, damage to property and the destruction of crops is an annual occurrence in the two case study wards. Seasonal floods often leave one of the wards cut off from the VDC office, the health post, school and the market centre. A high level of poverty, reflecting a lack of employment opportunities, is a challenge facing both wards. As a result, outmigration for employment to India is high.

*Figure 3.2: Sugarcane seeds being prepared in a poly-tunnel. Source: Samin Rijal, March 2016.*

A public-private partnership has been established involving the District Agricultural Development Office, the Sugarcane Association and local sugar mills, to support the cultivation of sugarcane on previously barren government owned land and in the river beds. NGOs have provided technical support for feasibility studies, training to the local community on sugarcane farming in collaboration with the local sugar mill, and the resources to establish the plantations. Initially, the communities were reluctant to get involved thinking it was impossible to grow sugarcane in

the river bed. However, within 2 years the community was harvesting and selling a significant amount of sugarcane.

**Key outcomes:** Around 300 households have been involved in the river bed farming in the two case study wards. Linking the sugarcane production with the market has raised household incomes substantially, with some research participants suggesting that this is helping to reduce outmigration for employment. According to focus group participants, the river bed farming has resulted in a direct reduction in the loss of property and livestock to seasonal floods. As a member of a community level agricultural group explained: "*the river belt cultivation has reduced the water flow from the river….This is how we are protecting the community at times of flood.*" Community confidence to deal with seasonal floods has also increased. As a member of the youth group explained: "*the stable source of income has developed a confidence to address the damages a flood can cause to a household.*" The majority of the money raised from selling sugarcane and grasses has been fed into the emergency fund which now stands at NPR 300,000. The CDMC has prepared a guideline for using the fund, which provides loans to community members. Householders are using the loans to establish small businesses or to invest in agriculture therefore improving their economic status. As summarised by the President of the CDMC in the ward: "*The income generating activity has helped us to realise the potential of our community. Also, the community believes that strong financial base is one of the most important aspects of helping the community bounce back from any disaster.*" The crops are insured against damage caused by floods and other disasters, making the river bed farming a more secure investment for community members, while also exposing community members to the potential benefits of insurance. The community pays the insurance premium from the profits made. As a mark of the success of the project, neighbouring communities have shown interest and are establishing similar river bed farming projects.

**Why has the initiative been effective?** The activities are related not only to DRR but also to the livelihood development of the communities and as a result community members have been keen to participate. The project brings together the ward level CDMCs and existing community groups including agricultural groups, local women's groups and cooperatives, therefore ensuring inclusivity and sustainability. Some of the profits are also given to the emergency fund, enabling the community to continue their DRR and disaster management activities in a sustainable way.

Samin Rijal and Sanjay Rajan Shrestha, March 2016

Community members involved in the study had some awareness of the DRR/emergency funds held by the LDMC at the VDC or municipal level, and the 5% development budget allocated to support DRR activities. Participants shared some examples of the VDC development budget being used for DRR. For example, in Kanchanpur, NPR 150,000 (£1,000) was provided to fund the construction of an embankment to reduce the risk of flooding. However, CDMC and wider community members were often unclear as to how to access the funds for community benefit. There were some examples of local bodies, such as a cooperative in Saptari, putting pressure on the local government regarding the 5% budget allocation for CBDRR.

*3.2.7 Characteristic 7 - Access to community managed DRR resources*

The majority of case study communities had access to material resources for DRR which had been provided by the NGO partner, including life jackets, rubber tubes for water rescue, stretchers, and first aid kits. In the majority of cases, the resources were kept in the homes of CDMC members, with the wider community aware of the resources available and where they were kept. The resources were accessed and used by task force members during seasonal floods in the Far and Mid West. Stretchers were also reported to have been used in Kailali to carry pregnant women to hospital, while the medicines have been used in Saptari to treat people affected by dysentery.

However, overall, resources were found to be limited and inadequate given the size of the wards and their populations. Recognising resource constraints, training was given to the case study wards in Kailali on how to use local resources in emergency rescue, such as making life jackets from empty plastic bottles and using bamboo and jerry cans in the absence of boats. A number of communities felt that it would be useful for the CDMC and task forces to have a boat for rescue and response, rather than relying on boats owned by the individuals and in some cases by the Ward Citizen Forum. In one or two cases only there were reports of community people not knowing how to use the equipment provided or of other problems, such as sirens being stored long distances from siren operators and missing store room keys.

A lack of maintenance of equipment was reported during focus group discussions, with some groups reporting that they do not have an up-to-date list of resources. There were frequent reports of first aid kits not being restocked when used or when expiry dates were reached. Despite this, there was no evidence of communities using their DRR/emergency funds to purchase additional resources (see Characteristic 6 above). One exception was a community in Kanchanpur who bought a solar panel to charge mobile phones, having recognised the importance of electricity during disasters.

Outmigration of young, active men, and in some cases women, for employment, resulted in the elderly and children being left behind. This had a significant impact on the human resource available for DRR and disaster response across the case study communities. There was also limited awareness at the community level of available technical resources beyond the expertise provided by the NGO, for example, DRR specialists and engineers at the district level (see Characteristic number 2).

*3.2.8 Characteristic 8 - Local level risk/vulnerability reduction measures*

In all communities, local level risk/vulnerability reduction measures were identified. Some measures were based on traditional practice, for example, householders constructing *machans* (raised platforms) outside their homes to store grain, taking crops to relatives' houses or renting a room in the nearby town before the monsoon for safe storage of crops, constructing *chepa* (walls) around the house from mud and grasses to protect property from seasonal floods, and preparing and storing dried food and wood in the attic space of the house. Following the 2014 floods in the Far and Mid West, households with sufficient resources in the case study wards in Bardiya and Kailali were starting to construct houses on stilts or raised bases to protect against future floods.

Through the implementation of the Nine Minimum Characteristics, collective actions were being taken. For example, community safe houses were constructed, along with raised hand pumps, raised grain stores and shelters for animals, with funding from government and NGOs (Figure 3.3). Safe areas had been identified for people and livestock in all communities. These measures were, in theory, accessible to all members of the community but in all cases the facilities available were not sufficient. For example, during the 2014 floods there was not enough room in the safe house for community members in one of the case study wards in Bardiya, with

*Figure 3.3: A raised water pump in a case study wars in Bardiya.*


*Figure 3.4: Community seed and crop bank.*

priority given to the elderly, pregnant women and children. The communities with raised hand pumps reported that these worked well, with other standard pumps submerged and the water contaminated.

Some of the measures, including raised hand pumps, raised toilets and a safe house, were constructed after the 2014 floods. While these measures were still to be tested under flood conditions at the time of the research, research participants were positive about their usefulness in the event of a flood. There were concerns in Bardiya that one of the new safe houses constructed would not be used by the most vulnerable households in the ward as the house was located some distance from the community. However, finding suitable land was difficult and the site chosen was reported to have been a collective decision.

There were examples of communities planting sugarcane and grasses to divert flood waters, culverts being constructed to reduce the risk of floods, and roads being constructed for development purposes but also serving as evacuation routes. There were also examples of larger scale, government-funded embankment projects under construction in Bardiya and completed in Saptari. In Saptari, the case study communities felt that the embankment had been effective at reducing the flood risk but had, as a result, created drought conditions as the river water could no longer be used for irrigation. This was resulting in changes in livelihood, with farmland abandoned and householders seeking wage labour.

***3.2.9 Characteristic 9 - Community based early warning systems***

Communities have been living with the risk of floods for generations. They monitor either formally or informally, the amount and intensity of rainfall, and changes in the height, colour and speed of the river. Traditional systems rely on the *Badghar* and *Chaukidar* being alert during the monsoon and raising the alarm by visiting each household. Participants were aware of the limitations of these traditional approaches; for example, they did not always know about rainfall or river levels in upstream areas, and as a result often did not evacuate until the water had risen to their knees. In some newer early warning systems, information was communicated between upstream gauge readers and downstream communities and, in the case of Bardiya, between gauge readers in Nepal and communities downstream in India. In some cases, communities are also linked into a regional and national flood monitoring network, with information provided by the Department of Hydrology and Meteorology via the district and local government. For example, in Saptari, the Early Warning Task Force is contacted if there are concerns about a possible flood in the Koshi River. This information is in addition to low-tech monitoring of river levels within communities, often by the Early Warning System Task Force, using colour-coded gauges painted on buttresses of bridges or on bamboo poles. Many participants said that they rely on both the formal early warning system and their own observations too, as well as calling friends for information upstream. As a member of a focus group with CDMC members in Bardiya explained: "*With* [the gauge reader upstream] *there is double benefit – early warning systems and our own intuition of floods.*"

Flood early warning systems were largely viewed positively by all case study communities, with a three to five hour warning time allowing communities to take their animals to safety and to evacuate. For example, in Bardiya in 2014 and in Kanchanpur and Kailali in 2015, people and livestock were safely evacuated. As one focus group participant in Kailali explained: "*Earlier we did not know about the flood until it entered our community. But today, we get information prior and this has helped us to move forward towards safer places before flood enters our community.*" This was affirmed by another participant from Bardiya: "*We cannot stop the water from coming inside the village but we did manage to save our life, our livestock and our belongings.*"

Participants showed very good awareness of established communication and response protocols, with efforts being made to access the harder to reach and most vulnerable households in the communities. For example, in Bardiya, Dalit households who rarely engaged in awareness raising activities due to day wage labour, were contacted directly to ensure they were aware of the early warning protocol. They also highlighted the importance

of annual drills that are undertaken in May before the monsoon arrives for awareness raising. However, some people did not consider the information being communicated from upstream to be reliable even when shared by trusted messengers such as the community *Chaukidar*, but the annual drills have helped. As a participant from Bardiya explained: "*It was almost like a play. We played different roles – I was a person who was drowning the Search and Rescue Committee saved me…Everyone attends such drills. For people who cannot attend like old people the information is spread out in every tole* [a small settlement within a ward]. *Once a person has information we start spreading it, we don't wait for the DMC to do it.*"

The early warning systems are certainly not without limitations. Poor phone signal and load shedding (power cuts) caused problems when trying to issue warnings to communities in Bardiya in 2014, reducing the warning time. In other communities in Bardiya, there were problems with people not hearing the sirens when sounded at night or during periods of heavy rain. In a case study community in Kanchanpur, there was a delay contacting people as there was no credit available on the mobile phone of a key contact person and the siren was stored some distance from the person responsible for using it. The importance of maintaining equipment was a further issue raised, with damaged speakers and microphones reported in one community in Saptari.

### 3.3 Local implementing partners' views on the usefulness of the Nine Minimum Characteristics in building community resilience to disasters

For the local NGO representatives interviewed, the general consensus was that all of the Characteristics were useful in supporting communities to prepare for disasters. However, for one interviewee, who was well versed in the Nine Minimum Characteristics, further clarification was needed in terms of the specific aims of each Characteristic. In addition, the strengthening of livelihoods to enable recovery was considered to be missing from the list of Characteristics by all implementing partners. As a project social mobiliser explained: "*It's not that these* [the Nine Minimum Characteristics] *are not helpful – it helps in reducing the risks but it doesn't solve the problem.*" Another project officer clarified: "[It's] *economic stability that makes people resilient.*" Many rural communities rely on agriculture but seasonal floods destroy crops every year. Local implementing partners highlighted the need to provide alternative employment opportunities and training, for example, in non-seasonal farming. Not only was this considered important from a resilience building perspective but it was also noted as being important for sustaining community interest in CBDRR. In Bardiya and Kanchanpur, the local implementing partners also highlighted the need to reduce outmigration for employment as the loss of young, active people can have a negative impact for communities in terms of preparing for and responding to disasters.

The issue of monitoring and evaluation of the Nine Minimum Characteristics was also raised. At present, the focus is very much on outputs, for example, the number of people trained and emergency resources distributed. There was wide recognition amongst the implementing partners of the importance of understanding the longer-term impacts of the projects at the community level, including the sustainability of interventions and their impacts in the context of a disaster event.

### 3.4 Summary and reflections

The findings from phase 1 of the review have highlighted missing links between the community level and the VDC, municipal, district and national level government, which can be seen to be impeding the effective implementation of the Nine Minimum Characteristics at the community level. The degree to which ordinary people have ownership of the CBDRR initiatives is also questionable and this has implications for the sustainability of resilience building activities. There were, however, positive examples of communities having a higher level of awareness of disasters, and the skills and resources (albeit limited) to assist them in preparing for and responding to a flood event. The flood early warning systems in the Far and Mid West are good examples of these resources.

For the case study communities involved in Phase 1 of this Review, economic development and livelihood strengthening were priority concerns. Without these, participants felt that they are unable to increase their

long-term resilience. As one participant in a focus group with CDMC members in Kanchanpur explained: "*If you have money you can rebuild houses, buy necessary materials and start normal life all over again. So people should have a financial support to bounce back from any disaster.*" This was echoed by the local implementing partners who viewed the Nine Minimum Characteristics as useful, relevant and complementary to each other but they also felt that the strengthening of livelihoods was missing which was considered essential for disaster recovery. As a project social mobiliser explained: "*Without recovery, a community can never bounce back as they have no base to deal with the consequences the flood has brought to their houses or farmland.*"

# 4. Research findings: Phase 2, hill and mountain communities

## 4.1 Community views on their own vulnerability and resilience

### *4.1.1 Rural communities*

The everyday challenges faced by the rural case study communities in Dailekh and Achham in the Far and Mid West hills included a lack of water for drinking and irrigation. High levels of poverty resulting from low agricultural productivity under drought conditions and limited alternative livelihood opportunities has led to the outmigration of young men, often to India, for seasonal employment. The shortage of food grains and the reliance on remittances to buy food were significant challenges faced by householders, in particular women, who were often left behind to raise children, rear animals and tend farmland. Research participants noted that the discrimination faced by women and the impact of religious practices such as *chaupadi* (in which menstruating women are forced to stay in animal sheds) had a significant bearing on everyday life. Health hazards, including pneumonia and diarrhoea, were a common occurrence during cold winters and monsoon months, while the remoteness of communities impacted on service accessibility including health posts and schools. In addition, Dalit households in the case study communities in Dailekh faced challenges concerning land ownership, reflecting their status as former bonded labourers.

*Figure 4.1: A water-powered mill or pani-ghatta in Dolakha District damaged by the 2015 earthquakes.*

The everyday concerns in the case study wards in Dolakha District in Central Nepal related to the 2015 Gorkha earthquake and aftershocks, which caused widespread building collapse and loss of livelihoods (Figure 4.1). Prior to the earthquakes, living standards were good in the respondents' view, but the earthquake disrupted economic

activities (e.g., farming, access to markets, trade and business), and impacted upon health and education services. People were found to be living in constant fear that another earthquake would occur.

The main hazard faced by the case study communities in the Mid and Far West was drought. Some householders reported that they had been unable to harvest crops for more than two years, while others reported that they could only feed the household for three months per year, hence their reliance on remittance income from relatives working in India. Landslides had destroyed and damaged farmland in Achham, Dailekh and Dolakha (Figure 4.1), with the hazard in Dolakha exacerbated by the 2015 earthquakes, resulting in some households being forced to relocate. Wild fires were reported as a common occurrence across the six communities causing damage to community forests, while wild animals, wind and hail storms cause damage to crops every year. As noted by a member of a Ward Citizen Forum in Dailekh: "*Wind storm is damaging our vegetables and crops resulting* [in] *less productivity, less food security and less income.*" Floods were also a concern in some communities. Community participants in Dailekh and Achham were also aware that earthquakes were a potential future hazard.

Case study communities in the hill districts of Dailekh and Achham were aware of the hazards they faced but they felt they could do little to prepare as they were constrained by the daily challenges encountered. Daily activities were so overwhelming that they did not have time to contemplate future hazards and risks. For example, fetching water would take almost half a day. As a result, disasters were responded to as and when they occurred. However, despite these challenges, participants highlighted the strong support network amongst the women in the communities who help each other, enabling them to address problems collectively in the absence of men. For example, female participants in a focus group in Achham shared the example of 25-30 women working together to tackle a forest fire. Participants talked about good social relations between caste/ethnic groups and how the communities came together if a household required support. All communities reflected on the inclusiveness of decision-making processes in the context of caste/ethnic groups, although in some cases women were excluded, reflecting patriarchal norms. While traditional practices were employed to deal with hazards such as forest fires, there was recognition amongst community members that local knowledge alone was not enough and that outside support was required to prepare for, and respond to, disasters.

The case study communities in Dolakha were struggling to rebuild their lives following the 2015 earthquakes and felt that they were "*nowhere close to being resilient.*" Participants at the community level highlighted the importance of constructing safe houses which would protect them from future disasters like earthquakes. The issue of resettlement was also raised, whereby vulnerable households exposed to hazards are relocated to safer areas with government support. They also highlighted the importance of a reliable mobile phone network to enable the effective communication of hazard information. People involved in the research in all six rural communities highlighted the importance of income generation for longer-term resilience building. As summarised by a focus group participant in Dailekh: "*Income generating activities will improve the financial status and in case of earthquakes new houses can be built, new enterprises can be opened or new land in other safe areas could be bought. Therefore, programmes related to financial security is considered highly by community people.*"

In summary, we begin to piece together a rural hill community understanding of resilience that puts great emphasis on social solidarity, livelihood opportunities, access to outside sources of knowledge, reliable infrastructure (especially a solid mobile phone communication network and reliable all-weather roads), and access to social infrastructure, especially health care and education.

#### *4.1.2 Urban communities*

Everyday concerns in the urban wards were largely related to the physical infrastructure. A lack of drinking water, poor sanitation, electricity shortages, poor road access, limited if any waste management, pollution and crime were the main challenges identified. Participants in the Kathmandu Valley wards also highlighted the psychological impact of the 2015 earthquake, with people constantly living in fear of another earthquake.

Similarly, in Pokhara, many community members faced severe anxiety during the monsoon months, fearing a repeat of the 2012 Seti floods which killed more than 60 people.

In the Kathmandu Valley, some households were still living in temporary accommodation following the 2015 earthquake, and there were concerns for some around the affordability of government-approved building designs for reconstruction. Poverty was an issue in the case study communities in Pokhara in particular, reflecting the focus of the CBDRR project on squatter settlements in the municipality. Here, many households were without official documentation (e.g. citizenship cards, birth certificates or land ownership documents) and were, as a result, denied access to basic services including water and electricity. The four-month blockade of the Nepal/India border (November 2015-February 2016) was mentioned during two focus group discussions, but only in Pokhara and Kathmandu. This was perhaps surprising given the impact of the blockade on wider daily life in Nepal, with significant shortages of petrol and cooking gas and rising commodity prices, but may indicate a greater reliance of urban communities on outside or international supply lines.

In the urban case study wards, earthquakes were the main hazard identified by members of the community. House fires linked to gas cylinder explosions were noted. Flooding posed a significant threat to the case study communities in Pokhara, in particular the squatter settlements due to their close proximity to the river, while localised flooding during the monsoon was an issue for one community in Kirtipur in the Kathmandu Valley. In Pokhara, a landslide had also affected 40 households in a single ward. Health issues reflecting a lack of access to drinking water, were a further hazard identified by participants across the six urban case study wards.

In terms of the factors that make urban communities resilient, participants highlighted the importance of awareness of the hazards faced and the actions that can be taken to reduce risk. Reference was made to the importance of earthquake safe houses. Strong leadership and the community working together was also considered important. There was, however, an expectation amongst some community members in the urban case study wards that trained experts (e.g., the Nepal Army, the Police, and the local Red Cross Chapter) would be on hand to respond in the event of a disaster. In addition, there was a stronger reliance on government assistance for preparedness and response than was seen in the rural case study communities, perhaps reflecting the closer proximity of urban community members to the instruments of central government.

In summary, the urban case study communities placed less emphasis on social solidarity and livelihood security, and focused more on formal sector (e.g. local government) leadership and mobilisation as well as the extensions of risk education in these neighbourhoods. In common with the rural view of resilience, considerable emphasis was placed upon infrastructure, albeit in the urban context this has to do with the maintenance of the urban fabric (e.g., water, sanitation, drainage, waste collection, electricity) and not with the provision of more basic physical infrastructure (e.g., all-weather roads and bridges) or basic social infrastructure (e.g., schools and health centres).

### 4.2 Outcomes associated with the Nine Minimum Characteristics

In this section we take each of the Nine Minimum Characteristics in turn and briefly summarise the outcomes that they have generated as observed by the research team, and reported by the research participants, across the 12 case study communities.

#### *4.2.1 Characteristic 1 - Organisational base at VDC, ward and community level*

In the case study VDCs in Achham District, only VDC level disaster management committees (LDMCs) had been established. In the case study VDC in Dailekh District and in Pokhara municipality, committees had been established at the ward level only (CDMCs). Where both LDMCs and CDMCs had been established (Dolakha, Thimi and Kirtipur), they were often not linked and as a

result functioned as independent bodies. Effectively linking the DMCs at different levels could have significant benefits. However, this had proved particularly challenging to enact in both rural and urban areas, albeit for very different reasons. For example, efforts were made to involve ward level representatives in the VDC level committee in Achham, but some community members had to walk for more than two hours to participate in meetings in the VDC office. In urban Kirtipur, some tension was noted between the voluntary CDMC members and the LDMC members, as it was felt that the volunteers were far more active than paid LDMC members. There was also a feeling amongst the CDMC focus group participants in Kirtipur that the LDMC should include representatives from the CDMCs as at present they are totally unaware of the issues discussed at LDMC meetings.

In the urban case study wards in the Kathmandu Valley, participants questioned the existing DMC structure in their wards, although there was a notable lack of consensus regarding what might work more effectively. For example, a youth group in Thimi suggested that CDMC sub-committees may be more effective given the size of the wards in the municipality. The Ward Secretary of the same ward suggested that one committee could oversee three wards, which could help with coordination in disaster response and recovery. In Kirtipur, it was suggested that the CDMC should be formalised, with the committee given office space and members remunerated for their time. It was also suggested that a DRR focal person in Kirtipur municipality would be useful, with the purpose of connecting and supporting the CDMCs in preparing proposals and accessing funds from the municipality.

There is a clear logic for the Ward and VDC Secretaries being the chairs of the CDMC and LDMC, respectively, in terms of government representation, coordination, feeding into government planning processes and access to funding. However, the Secretaries were often overstretched and therefore unable to prioritise CBDRR. For example in Thimi municipality, one Ward Secretary was responsible for five wards, while in Achham the VDC Secretary was based at the District Headquarters and was largely unavailable for meetings in the VDC studied. In addition, poor links were reported and observed in some of the wards between the CDMC and the Ward Citizen Fora, which could have otherwise been an important link between the community and local government. For example, in one of the case study wards in Thimi municipality, the Ward Citizen Forum knew very little about the CDMC, while in Dailekh there were no reported links between the Ward Citizen Forum and the CDMC.

While the LDRMP guidelines attempt to bring about inclusivity by specifying the number of women, Dalit and ethnic minority representatives on the disaster management committees, this was not always possible because of limited availability and willingness to engage. For example, in one of the case study communities in Dailekh, the committee was dominated by Chhetri people, with only one representative from the Dalit community, despite the Dalit community being more vulnerable to floods and landsliding due to their occupation of more marginal lands. In addition, in one of the case study communities in Achham, the committee was entirely Chhetri, with no representation from the Dalit community, despite Dalit households making up 35% of the ward population. Similar issues arose in the urban case study wards. For example, in a relatively heterogeneous ward in Thimi municipality, more Chhetri people were involved in the CDMC as the Newars were often busy with farming so few came forward to volunteer. Language was also a concern for Newari householders who did not speak Nepali and who therefore felt that they were unable to participate.

In a case study ward in Kirtipur, efforts were made to involve socially active members of the community, but this created a committee that the community did not feel represented the ward. As a result following the earthquake, the committee was reformed to include representatives from the different sub-communities. Some focus group participants in Kirtipur also highlighted the importance of having influential people from within the community (e.g. political party representatives) sitting on the CDMC to ensure that action is taken and that the wider community engages and participates. This was also considered important in terms of accessing resources and funding, particularly following the 2015 earthquakes. For other participants, particularly in the rural wards, political interference was frequently cited as a barrier to development activities and action.

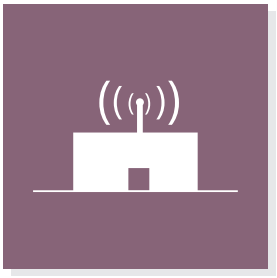
In the Far and Mid West, the case study communities were found to be very patriarchal, resulting in limited participation of women in decision-making. Men often assumed roles on the DMCs, but due to seasonal migration they were frequently absent from the community. Despite this, women rarely filled these roles in their absence. This perhaps also reflected the domestic burdens on women, in particular the daily need to collect water which in some cases took half a day. The exception to this was one LDMC member in Achham who was also a community social mobiliser and who was very vocal and knowledgeable about DRR and wider community issues.

Many existing and active community groups were present in the case study wards (e.g. women's groups, community forest user groups and *guthi* - a traditional Newari religious group). However, the majority were not active in DRR. In these cases, having a separate organisational base as suggested in the LDRMP, was considered to be appropriate as existing community groups have their own agenda, interests and responsibilities. In some cases it was necessary to form a committee because such groups did not exist. For example, as a VDC Secretary from Achham explained: "*On most occasions, we have to create a consumer group in order to implement any development projects. This has happened on many occasions because there is no local representatives whom locals can trust and the Ward Citizen Forum is mostly dysfunctional.*" There were, however, some examples of existing groups engaging in DRR. For example, in Pokhara one of the Tole Level Organisations[1] was engaged in DRR before the formation of the CDMC, constructing gabion walls and canals, and advocating for DRR at the ward and municipal levels of government. In such cases, it may be appropriate to use an existing organisation as the organisational base.

Community ownership and sustainability were significant issues across the case study wards, particularly regarding the continuity of CDMCs beyond the CBDRR projects. Even within ongoing projects, CDMC meetings were often infrequent, with groups coming together as and when necessary and mainly when meetings were initiated by implementing NGOs. Reasons given by key informants from the rural and urban case study wards included: DRR not being a community priority; community members not understanding or seeing the purpose of the CDMCs; the need for financial support to hold meetings and to take action; the lack of community ownership of the committees, which were frequently seen as the responsibility of the NGOs; poor communication between the CDMC and the implementing NGO; and CDMC institutions rarely being institutionalised into the apparatus of government, despite the initiative of the LDRMP guidelines. In the case study wards in Dolakha, there was no community ownership during or after the project (which ended three years ago), with the CDMC seen as an initiative of the implementing NGO. In Thimi municipality, the CDMC in one of the wards was perceived to be another arm of the Red Cross. In Achham, a VDC Secretary noted that community people were frustrated by the number of NGO projects in the community and have, as a result, become disengaged. As a key informant in Achham explained: "*Community understanding is that if there is any programme then they understand it as the INGO's project not their own. There is a huge lack of ownership in people.*"

Following the 2015 earthquakes, communities came together in different ways. In some cases, CDMCs played a key role in response activities, for example in one of the case study wards in Kirtipur. Here the CDMC established a female friendly safe space to support women affected by the earthquake. However, participants in this ward also reported that relief distribution committees were established involving community group and political party representatives with the aim of preventing the misuse of resources. In this context, some participants questioned the purpose of forming CDMCs if they are not going to be used in disaster response. In other cases, groups formed organically and not necessarily through the CDMC structures that had been established. For example, in Kirtipur a community organisation formed out of an ad hoc relief coordinating body. Such innovations highlight the ideas and creativity of urban residents which is a significant strength that should be harnessed through the implementation of the Nine Minimum Characteristics.

[1]A tole is a small settlement or community within a ward which shares local resources, for example, a temple, water tap or community forest. They are a social rather than a mandatory administrative structure. Toles can be found in both urban and rural areas but are more common in municipalities where wards can cover large geographical areas. Tole Level Organisations may be formed within Toles to address common problems and provide a mechanism for accessing the municipality or the VDC.



*4.2.2 Characteristic 2 - Access to DRR information*

In rural communities, people relied on their own local knowledge and understanding of the physical environment and relocated to safe places when they felt at risk. Formal sources of DRR information in rural communities included the radio, which provided weather forecasts, although these were often at a regional scale and were not particularly useful in terms of local level planning. Participants in Dolakha also noted the official warnings received from the Government of Nepal in relation to glacial lake outburst floods. However, a barrier to accessing DRR information in the rural areas was the poor mobile network coverage. This was a particular problem for communities in Achham, Dailekh and Dolakha, and was recognised by focus group participants as a barrier to effective flood early warning systems (see Characteristic 9 below). The poor mobile phone network meant that information was often communicated via traditional messengers.

Often the only source of technical information for the rural case study communities was the local NGO implementing the CBDRR project, and there were clear limits as to the technical information that the NGO could provide. In some cases, the international NGOs supporting the implementation of the Nine Minimum Characteristics provided technical support (e.g. for early warning system development). However, there was very limited input into DRR activities from other outside experts such as geologists or engineers. For example, in one of the case study communities in Achham, a team of geologists visited the community following a landslide in 2009. However, participants were unware of any concrete outcomes from their visit, such as hazard maps, land use or resettlement plans. Limited technical input was particularly evident in respect to informal road construction in rural areas across all three case study districts.

Awareness raising activities in the context of earthquakes were conducted in urban communities (e.g., in the form of drama, leaflets, posters, screening of training videos, mock drills and simulations). According to a focus group in Thimi, television was the main source of information for householders, not community activities. As one participant explained, bringing people together for community activities is very difficult now. The youth, for example, are busy with the internet and do not have time for clubs. Before the 2015 earthquake, some people, particularly the elderly, saw awareness raising as scare mongering, while others did not think the training was necessary. Despite this, there was some evidence from the community level focus group discussions that the information shared had informed behaviour in response to the 2015 earthquake (e.g. turning off the gas in the kitchen before evacuating). Attitudes to awareness raising were reported to have changed after the earthquake, as a representative from a women's group in Thimi explained: "*It was after the earthquake that people became fully convinced of the importance of building earthquake resistant houses and the importance of go-bags and fire extinguishers in all homes.*"

Some participants noted an absence of a culture of knowledge sharing. For example, in Dailekh it was noted that information was rarely shared between community groups (e.g., between the CDMC and the community forestry or farmers' groups); while information received during DRR training events was rarely communicated to others within the community. As one focus group participant from Achham explained: "*Some of us have gone to trainings and when we go to trainings, we learn so many things. But once we return to the community, we never share our experience at the community and often at times our family members. We also need to admit our fault.*" This was particularly problematic as often only a small number of people received the training and high levels of outmigration for employment resulted in a loss of this knowledge. For example, in one of the case study communities in Achham, training was provided on how to control forest fires, but when a fire broke out in the community, the trained people were all outside the village. In addition, people in the wider community did not necessarily know who participated in the training programmes and therefore who may be able to provide information. There was also an issue of wider community interest. As summarised by the same focus group participant in Achham: "*Even if we ask community members to be present at a place so that we can disseminate information of the training to them, the community members won't be present. People only go to such places where they will get money/remuneration and not to other places.*"

Very few people at the community level involved in the focus group discussions were aware of disaster management plans that had been prepared at the community, VDC, municipal or district levels (see Characteristic 5 below). In addition, no formal communication channels had been reported in any of case study communities between the LDMC at the VDC level and the CDMCs. Hoarding boards were used to display hazard maps produced as part of VCAs and emergency contact information. However, these were often in remote locations, were not well maintained or updated – particularly once the CBDRR projects had come to an end, or included information that the communities were already aware of.

***4.2.3 Characteristic 3 - Multi-hazard risk and capacity assessments***

In some cases, multi-hazard risk and capacity assessments were undertaken to identify the VDCs, municipalities and wards where the CBDRR projects, informed by the Nine Minimum Characteristics, would be undertaken. For example, in Thimi municipality, an assessment was undertaken across all wards, with inputs from the community during a public gathering, to identify the six project wards. While in Pokhara, the implementation of the Nine Minimum Characteristics was informed by a technically-focused hazard and risk assessment undertaken by an international agency.

At the community level, VCAs were undertaken across some of case study wards in accordance with the LDRMP guidelines, with consideration given to a range of hazards and risks. For example, in one of the case study wards in Pokhara, this involved mapping the hazards across the four case study communities, with consideration given to earthquake, fire, flood and river bank erosion. In general, the assessments were led by the NGOs rather than the communities themselves and in most cases only a few people at the ward level were involved in the VCA process, usually a sub-set of the CDMC. As a result, the wider community was often unaware that the assessments had been undertaken, or they did not fully understand the purpose of the assessment, which was rarely explained to members of the community beyond those involved in the assessment process. For example, in one of the case study wards in Dailekh, participants were unclear as to the actions that had arisen as a result of the assessment.

A concrete output of the VCA process across a number of communities was a ward level hazard map (Figure 4.2) which identified safe spaces and evacuation routes for use in the event of a disaster. These maps were displayed in the communities, although not always in the most obvious or accessible places (see Characteristic 2, above). There was some evidence that the designated safe spaces identified during the VCA and planning processes were used following the 2015 earthquakes. For example, in the case study wards in Thimi and Kirtipur municipalities, the school compounds and temple grounds were identified as safe spaces prior to the earthquake and provided sites for temporary settlements.

In the majority of cases the VDC, municipal, ward level assessments were undertaken as a one-off activity and were not updated. In one of the case study communities in Dailekh, participants highlighted that the resource and vulnerability mapping had been updated with the support of the local NGO but not all CDMC members were involved or reported to have understood the purpose. In addition, implementing partners highlighted the constraints associated with taking action to reduce the risks identified through the VCA process. For example, relocating a community known to be at high risk of flooding in Achham was very difficult as the households were poor, did not have alternative land and the VDC and DDC did not have the capacity to manage the relocation. This highlights the importance of having strong links with district and national level government, where there is a better chance of brokering access to land or allocating funds for more ambitious and potentially beneficial protection measures.


*Figure 4.2: Hazard and vulnerability mapping in Achham.*

***4.2.4 Characteristic 4 - Community preparedness/response teams***

Community response teams have been established in the majority of wards. The range of teams established was impressive. The standard task forces established were search and rescue, first aid and water, sanitation and health, and early warning, as specified in the LDRMP guidelines. In addition, some wards had established other teams. For example, in Dailekh there was a relief management team; and in Pokhara a team to manage temporary settlements and food management post-disasters. There was also an example of an early warning committee being established in a community in Dailekh that did not have an early warning system, although there was interest in establishing a system in the future. This highlights the importance of the Characteristics being flexibly implemented and responding to local need, rather than being treated as a standard blue print or tick-box exercise.

The preparedness and response training provided was largely hazard specific. For example, in Dolakha, training was given on landslide and flood response, but not earthquakes. As a result, the task forces felt underprepared for the 2015 earthquake. They did, however, exist as a team and contributed to the response effort in a useful way by distributing funds and aid. As one participant explained "*these teams worked effectively during the landslide… but no one had ever imagined the possibility of a major earthquake thus these teams were only limited to distributing funds and aid.*"

Training was, in general, provided to a limited number of people from each ward. Participants across the case study wards felt that the effectiveness of the training provided by the local NGOs was reduced because the learning was rarely shared with other task force members or the wider community (see Characteristic 2). As a result, the wider community was only aware of the "*presence and activity of a few people under the CDMC who have been involved in rescue missions in emergency events in the past.*" In one of the case study communities in Pokhara, the CDMC attempted to share their learning with the wider community but the mechanism for doing so, or how effective this had been, was unclear. There were also very few examples of refresher training courses being given, with some CDMC members expressing concern that the learning would be forgotten or lost.

A significant problem across the case study wards was the loss of trained people, again due to outmigration for employment. For example, according to participants, despite more than 900 people being trained in Pokhara, one of the two case study wards had no active task forces, as the trained members had all moved away. In Kirtipur, the local implementing partner estimated that only 30% of trained personnel still lived in the area. In Dailekh, the teams were reported to have more female than male members due to outmigration. In one of the case study wards in Pokhara, priority for task force training was given to married women in the community who were less likely to migrate. This was proving effective as the ward had retained its trained personnel. However, such initiatives may also increase the burden placed on women and this therefore requires careful consideration. In the wards that had experienced a recent disaster, there was evidence that the response teams played an active role in disaster response. For example, in Dolakha, the search and rescue and first aid teams were mobilised following a landslide to rescue affected householders. In Kirtipur, four community members who had received search and rescue training managed to rescue people from a partially collapsed building (see Case Study 4.1).

**Case Study 4.1: Urban search and rescue training in Kirtipur**

As a part of the CBDRR project in Kirtipur, which focused on earthquake preparedness, search and rescue training was provided to 200 community members. In the initial phase of the programme, there was some reluctance on the part of community to participate in the training, arguing that Kirtipur was located in an earthquake safe zone and that such training was unnecessary. In the oldest part of Kirtipur municipality, senior citizens were against the earthquake awareness raising activities and training programs, arguing that it was scare mongering and might in itself invite future disaster.

During the April 2015 earthquake, four young people who participated in the search and rescue training were instrumental in saving the lives of four people from a partially collapsed house. One of the young people, aged 21, said that after the earthquake he returned to his own house to check on his family. When he knew that his family were safe and well, he and his friends went to the older area of Kirtipur where narrow roads made access difficult. They heard sounds from

*Figure 4.3: An example of stockpiled resources in Kirtipur municipality.*

a partially collapsed house. With the help of local people, they gathered stockpiled materials (Figure 4.3) including shovels, axes and hammers and began a rescue operation, drawing on the knowledge acquired during the search and rescue training that they had received. It took four hours to rescue the four people trapped, which included two senior citizens and two children.

There were also examples where the response teams were not effectively mobilised. For example, in Thimi, disruption to the telephone network meant that it was difficult to mobilise collectively following the 2015 earthquake. Members of a CDMC in Thimi felt that there were not enough trained people to effectively respond to the earthquake at the community level, as many members were busy helping their own families and were not available for wider community work. As one focus group participant explained: "*The DMC was not effective immediately after the earthquake. DMC members are more concerned about their own life and relative safety. It was the youth from the society who were more active.*"

Similarly in Kirtipur, many of the trained people did not come forward to help because they were taking care of their own families. One respondent suggested that only about half of the trained personnel in Kirtipur were active. In this instance, youth and untrained volunteers stepped in to do the rescue work, and local hospitals and private pharmacies provided much of the first aid. It is necessary to consider how such self-help and community solidarity can be better encouraged and integrated into an institutionalised system like the CDMC and associated task forces. In another example from Dolakha, the teams were largely absent following the 2015 earthquake because the emergency resources were buried under collapsed buildings leaving no materials to support the rescue effort.

The usefulness of voluntary, community level search and rescue activity was questioned by community members in wards where the Police Force, a key first responder, was located close to the community. In one example, the CDMC handed the DRR equipment that had been provided to them by the project over to the Police Force, as they felt that it would be of greater value to them. This was clearly an isolated example, as in other urban wards extensive use was made of the search and rescue equipment by the local community. However, it does raise an important point regarding expectations of outside help and the role of communities in DRR in the urban areas.

Concern was expressed about the sustainability of the task forces once the CBDRR projects had ended, and where there was no refresher training or restocking of equipment. For example, research participants in Dolakha attributed the absence of active task forces in both case study wards to the absence of a functioning LDMC and CDMC, which was in turn linked to the CBDRR project coming to an end. The importance of local government support in sustaining the CDMC is clearly essential here.

***4.2.5 Characteristic 5 - DRR/management plans at VDC/municipal level***

All of the case study municipalities and VDCs had developed LDRMPs, in accordance with the LDRMP guidelines, with NGOs playing a notable role in the development of these plans. However, even when plans had been developed, there was a low level of awareness of both their existence and content amongst local government stakeholders and the wider community, reflecting the fact that plans are rarely shared or government owned. In addition, frequent changes in staff at the VDC/municipal levels resulted in a loss of knowledge about the content of the plans within local government, which had bearing on implementation. As a VDC Secretary in Dailekh explained: "*As I am newly appointed I do not have idea about LDRMP. I am also not aware about the activities carried out by the CDMC and there has not been any technical or financial support/coordination between the VDC and committee.*" According to a representative of the local NGO implementing the project in Dailekh, the LDMRP had been formulated and a request for funding had been submitted to the VDC.

According to the implementing NGOs, CDRMPs have been developed across the case study wards by the CDMCs. However, there was limited awareness of the plans amongst the wider communities. As a research participant explained: "*even the committee members were less aware of the plan.*" In addition, changes in committee membership had, in some cases, led to loss of knowledge of the CDRMP. For example, in one of the case study wards in Thimi municipality, the current CDMC were aware that a plan had been produced but knew little about how the plan was developed or its contents, with the original members having left the committee. The current CDMC may consider preparing a new plan but at present they feel that this is not required.

There was some evidence of a multi-stakeholder planning process at the VDC level in Dolakha involving the VDC Secretary, political party representatives, CDMC members, and teachers, suggesting some links between the ward and the VDC/municipal level in the planning process. However, in general the DRR/management plans were developed independently at the district, VDC/municipal, and community levels. In Achham the local implementing partner supported the VDC level DMCs to coordinate with other agencies working on disaster preparedness and response, in an effort to facilitate more joined-up planning. For example, in one VDC in Achham, links were established with a climate change project being implemented through the Government of Nepal.

There were very few examples across the case study locations of the DDRMP/LDRMP/CDRMPs being updated after their initial development. There was also some criticism from local government officials of the way the plans were formulated by NGO partners, with insufficient time and resources being devoted to implementation. As one VDC Secretary explained: "*We are very surprised to see the plan which mentions that most of the activities identified are supported by the local government bodies….Given the resource crunch and the priority of the community, it is not* [always] *possible to allocate resource for the implementation of the plan.*"

#### *4.2.6 Characteristic 6 - DRR funds*

The majority of NGOs implementing the Nine Minimum Characteristics provided seed corn funding to assist in the establishment of DRR funds. In some cases, the funds were provided to the LDMCs at the VDC level, as seen for example in Dolakha, while in other cases the funds were provided to the CDMCs at the ward level. An average of NPR 10,000 (£65) was given per ward. According to participants, the case study wards in Pokhara received significantly more, although the funds were accessed through the municipality as the wards themselves were unable to have their own bank accounts.

In the case study VDC in Dailekh, the NGO allocated half of the budget to DRR and half to emergency response, suggesting some awareness of the difference between preparedness and response. However, it was unclear how this was perceived by the community or what affect this had on the activities undertaken. In Achham, links were made between climate change and DRR, with funds from a climate change project given to the CDMC to fund DRR activities. Although this was being promoted by the local implementing partners, it suggests an acknowledgement of the benefits of aligning activities and efforts in DRR and climate change. This is a positive and encouraging example, as all too often climate change and DRR are addressed separately, mirroring the siloed structure of core international funding.

There were some examples of the seed corn funds being augmented by communities. For example, in Pokhara, the local NGO encouraged wards to establish their own savings and credit groups, with the funds used in times of disaster. This worked well in one of the case study wards, where the total fund was around NPR 50,000 (£325). However, the savings and credit initiative did not work so well in the second case study ward, with more money being borrowed than was being put in and the person overseeing the fund migrating overseas. In some wards where seed money was not directly provided, such as in one of the case study wards in Dailekh, the CDMCs had plans to establish their own funds through household contributions, while in the second case study ward it was

noted by focus group participants that: "*The committee does not have separate DRR fund but we have cooperatives and each household is the member of the cooperative. We have consented on using the savings as per need at the time of disaster.*"

Beyond the CDMCs, the wider communities were often unaware of the availability of seed corn funds to support DRR activities at the community level. Where they were aware of the funds, they were unclear as to what the funds could be used for, and on the procedure and mechanisms for spending. For example, in one of the case study wards in Kirtipur, the DRR fund was used during the earthquake response, but in the second ward the fund remained unused. This latter issue was magnified when funds increased following the 2015 earthquake, with sizable donations from overseas. It was unclear whether additional money for relief and response purposes from government in the event of a large scale disaster could or should be channelled through CDMCs. This proved to be particularly complicated post-earthquake in Kirtipur.

DRR funds were utilised for DRR where there was a perceived problem, knowledge of how to remedy it, and a match between the cost of the risk reduction measure and the availability of funds. For example, in Pokhara the fund was used to construct a fence between the community and the river to stop people and animals falling into the river. This was identified as a need during the community VCA. Similarly, in Achham, DRR funds were used to construct a wall around the school to stop children from falling into the river. Also in Achham, prior to the establishment of the CDMC, the Community Forest User Group was already allocating funds from their forest management budget to control fire by funding the wages of firemen.

In some locations low priority was accorded to DRR, particularly where the risks were deemed to be low. This was reflected in a case study ward in Dailekh where the CDMC felt that even if they had a budget for DRR, they would use it for education or health. Similarly in Thimi, the community wanted the fund to be allocated to other projects such as drinking water and road construction. Although the community may not have understood or identified what they were doing as addressing underlying factors that determine community resilience, this was the result of their decisions (see Section 4.1).

In some cases, the community accorded low priority to emergency funding. This was for two reasons. First, other sources of emergency funding were available at the community level for use following small scale disasters. These funds pre-dated the CDMCs and included small funds held by women's groups, community forest user groups, or cooperatives. Second, in the event of larger scale disasters, external or government funds tended to be available and were prioritised. For example, one of the case study VDCs in Achham received funding for corrugated iron sheets for households whose roofs were damaged during a storm in 2015.

There was a low level of awareness amongst the CDMCs and the wider community of the 5% budget allocation at the VDC/municipal level to support DRR activities, and there were no examples of the case study wards accessing the VDC or municipal funds for DRR. The exception was one of the case study communities in Pokhara, where the CDMC was aware of the funding available and prepared a written application to the municipality to access the funding, although the focus of the application was unclear. Another community in the same municipality leveraged money through a Constituency Development Fund to construct flood mitigation measures (see Case Study 4.2 and Characteristic 8, below).

In some cases, the VDC Secretaries claimed that they were also unaware of the 5% budget allocation, as instructions from the central government had not reached them. In other examples, the VDC Secretaries were not supportive of development funding being used for DRR, particularly given the many other priorities faced by their constituents.

*4.2.7 Characteristic 7 - Access to community managed DRR resources*

DRR resources were interpreted by implementing NGOs and community participants in both urban and rural contexts as response and rescue equipment. The stock-piled equipment was used by community members to rescue people after various disasters, including earthquakes and landslides, and was considered useful. Generally, resources were appropriate to the hazard context (e.g., shovels, pick axes, stretchers, life jackets and tarpaulin sheets). In one of the case study wards in Thimi, resources including stretchers and fire extinguishers were usefully stockpiled across the ward. There were also examples of DRR resources being shared with more severely impacted neighbouring wards in urban Thimi. Occasionally, the purpose for the tools that were provided was less clear (e.g., a navigational compass).

**Case Study 4.2: CDMC leveraging funds to support local flood mitigation measures**

"*Thanks to the dam, my crops have not had to suffer any damages. It has not just saved my crops, it has saved my livelihood.*"
(Community member, Pokhara municipality)

Householders in a case study ward in Pokhara Municipality were familiar with the damage caused by seasonal floods from the Seti River. The floods damaged and destroyed crops and restricted the mobility of householders. In some years, the flood waters entered houses, forcing people to vacate their homes. Collectively, the community approached the municipality requesting the construction of a small scale dam to control the flood waters in the Seti River. However, due to funding constraints the municipality was unable to take the request forward.

During a CDMC meeting, which took place after the CBDRR project had come to an end, a member of the committee suggested that the CDMC approach their Member of Parliament (MP) who was from the same ward and who had a budget to support infrastructure projects and development activities through the Constituency Development Fund. Projects are selected in consultation with local people and implemented through local government bodies, such as the DDC. The total cost of the dam (to be constructed using local materials) was NPR 500,000 (£3,250). The CDMC decided to contribute the local materials as well as offer free labour worth NPR 200,000 (£1,250). It was decided that the remaining NPR 300,000 (£2,000) would be requested from the Constituency Development Fund.

During the meeting with the MP, the CDMC members explained about the damages caused by the seasonal floods and demonstrated how the proposed dam would protect crops, houses and ensure the safety of the people. The MP approved the use of the NPR 300,000 (£2,000) and the dam was constructed within two months. The CDMC's success in leveraging the funding can be attributed to their awareness of the funding, their ability to prepare a proposal and their confidence to approach their MP, as well as the MP's awareness of the importance of investing in DRR.

The inadequacy of resources was, however, a key issue. In particular, first aid kits were commonly deemed not to hold enough medicines. Some focus group participants in Kirtipur felt that stronger machinery, such as concrete cutters, would have saved more lives following the 2015 earthquake. As summarised by a member of a CDMC in Kirtipur: "*During all of our workshops and trainings we were told that we were being prepared for a disaster scenario where the majority of houses are destroyed and thousands of casualties are suffered. But if we look at the funds and the equipment we have,*

*we will be lucky if it will be enough for 50 people and 15 houses.*" Conversely, if more resources were to be provided, storage would be a potential challenge, particularly in urban areas. Storage was already posing problems in one ward in Thimi.

Access to stored resources was an issue in some cases. In one of the case study wards in Achham, the equipment was kept in the school but only the teacher and the clerk had keys, not the DMC. In Thimi, disputes were reported regarding who could use the equipment, while in Kirtipur a police presence was deemed important to prevent conflict arising between people taking stockpiled provisions. In the second case study ward in Achham, the equipment was stored in the district headquarters and was not directly accessible to the ward. In Kirtipur, resources stored at a designated open space were not being used because they were too far from the community. In Dolakha, resources were buried under collapsed buildings after the 2015 earthquake. Overall, where resources were used in the 2015 earthquake, they tended not to be replaced or replenished.

Some resources, such as the solar street lights in the case study wards in Thimi, which were funded by the municipality and NGO for tourism purposes, were also useful after the earthquake when there was no electricity for several days, and helped people to feel safe when they moved between temporary shelters and their own homes. Similarly, in Kirtipur, three water storage ponds helped to address the water shortages during normal times as well as during emergencies.

Outmigration of young men, especially in the remote Far and Mid West, left women, children, and older people behind, reducing the human resource capacity for preparedness and response. For example, a key informant in Achham highlighted the limited human resource for constructing DRR measures, such as gabion walls and check dams. However, it was also highlighted that women have a high level of social cohesion in the case study wards in Achham, sharing their problems and helping each other in the absence of male members of the household. For example, as noted in Section 4.1.1, female participants shared the example of 25-30 women working together to tackle a forest fire. In urban settings, populations were found to be dynamic and rapidly changing, due to both inward and outward migration, leading to challenges in engaging and sustaining communities in DRR. As a focus group participant highlighted in Thimi: "*if you* [the research team] *come back after ten days you would see all new people.*"

### 4.2.8 Characteristic 8 - Local level risk/vulnerability reduction measures

There were a number of examples of community level DRR measures that had been undertaken to reduce vulnerability or risk. For example, the CDMC in one of the case study wards in Dolakha worked with the NGO to implement a slope drainage project designed to reduce the risk of landslides. In Dailekh, bioengineering had been undertaken in landslide-prone areas of the case study ward, along with the construction of small embankments to protect against floods. However, these had already been damaged by monsoon flood waters and had not been repaired or rebuilt.

In Thimi, gabion walls were constructed along the Manohara River to prevent flood waters from entering the ward during the monsoon. In Pokhara, a fence was constructed to prevent people and animals from falling into the river (described above in reference to Characteristic 6). This was identified during the community's VCA and implemented through the CBDRR project. In addition, levees had been constructed through the project at a cost of NPR 1,300,000 (£8,500), with contributions from the local NGO, the school and the community (the same community that had used resources from the Constituency Development Fund to construct a local dam to control the Seti River – see Case Study 4.2 above). While there have not been any large scale floods, the dams have proved effective during seasonal floods. As a focus group participant in one of the case study wards in Pokhara explained: "*only the construction of gabion walls, embankments and levees would assist us to face impending flood.*"

*Figure 4.4: A safe space in one of the case study wards in Kirtipur where bamboo framed shelters were constructed following the earthquake.*

Safe spaces were valued as a risk reduction measure, particularly in the urban wards, but sometimes needed better service provision, such as toilets. Where communities identified their own safe spaces they tended to be used because they did not want to venture far from their homes. For example, in one of the case study wards in Kirtipur, people gathered in the local safe places identified, erected tents and cooked food for the community using DMC funds (Figure 4.4 ). Larger, government-identified open spaces in Kirtipur were not utilised after the 2015 earthquake, but may be more useful following a more destructive event. As a representative from the local NGO implementing the CBDRR project explained: "*Nobody went to the* [main] *space during the earthquake, and all the materials stored at its stock pile could not be used as much as we had anticipated during the time of crisis. People chose to stay within the vicinity of their properties….People pitched tarpaulins near their own houses and stayed.*"

Where there was a direct hazard affecting the community, efforts were often made by communities themselves to reduce risk independently of externally-funded CBDRR initiatives. For example, the Community Forest User Group in Achham had been planting trees and fencing off vulnerable areas to reduce the landslide risk. However, the success of this community-led initiative was limited due to drought conditions which had caused the trees to die. While members of the Community Forest User Group feel that additional support is needed for these initiatives to be more effective, and they have approached the VDC and DDC, they were unable to articulate what support they required.

*4.2.9 Characteristic 9 - Community-based early warning systems*

Early warning systems were not relevant to the case study urban wards in the Kathmandu Valley, where the projects were focused on earthquake risk reduction only. There was, however, interest in early warning system development across the remaining case study communities which were subject to floods and landslides and where early warnings systems are more practicable. In the case study communities in Achham, reference was made to flood early warning systems only, despite drought being the main hazard of concern to community members. It is unclear from this Review if the local implementing partner or the community themselves saw this as a possible option, or indeed if this would be useful in building community resilience.

Flood early warning systems were less well developed in the case study wards in Phase 2, compared to Phase 1. In Pokhara, the case study communities were aware of the early warning systems that had been set up to warn of floods in the Seti River, and the associated communication protocols. Task force representatives from the communities downstream visited sites upstream to learn more about the river monitoring and the early warning system itself.

A new system was being set up in Achham involving the installation of rainfall monitoring equipment which is connected to the Department of Hydrology and Meteorology in Kathmandu, with the aim of issuing early flood warnings through local government channels. The system was still in the early stages of implementation and was still to be tested. Similarly, rainfall was being monitored in Dolakha (Figure 4.5). If the rainfall intensity exceeds a certain threshold then a warning was automatically issued to the district headquarters. However, since the early warning system was installed, there had not been any heavy rainfall of sufficient intensity to test the system. Other communities without flood early warning systems could see the potential benefit of such systems. For

*Figure 4.5: Rain gauge and solar panel in Dolakha District.*

example, in Dailekh, the Community Forest User Group and CDMC suggested that a communication system should be set up between the upstream catchment of Humla and the lower hills. As a member of the Mother's Group explained: "*It would be easy if we get to know about flood earlier so that we can move ourselves and our belongings to the safer areas.*" However, for an early warning system to be effective, it was recognised that the mobile phone network would need to be improved. This was also an issue in Dolakha.

Some focus group participants highlighted the subjective component of early warning systems as a potential limitation. They remained unconvinced that if a siren sounds, action will be taken by community members to evacuate. For them, whether people decide to evacuate or not depends on their own judgment regarding the possibility of a disaster. For example, a landslide early warning system had been established in one of the case study communities in Dolakha, but participants remained unconvinced about the reliability of the warnings. This underscores the necessity of appropriate early warning system technology and effective community engagement.

### 4.3 Local implementing partners' views on the usefulness of the Nine Minimum Characteristics in building community resilience to disasters

For the local NGOs implementing the CBDRR projects, all Nine Minimum Characteristics were considered important. Awareness raising was identified as a key component and first step (Characteristic 2), with a number of local implementing partners highlighting the impact that the 2015 earthquakes has had on people's awareness and willingness to engage in DRR in both rural and urban areas.

For the local implementing partners engaged in the research, the problem was not the focus of the Nine Minimum Characteristics but the scope and extent of the activities that could be undertaken within the budget and timeframe of the CBDRR project. For example, a project coordinator in Achham highlighted the need for further support and resources including additional funding, the construction of mitigation measures such as dams and early warning systems as "[i]*n the absence of these resources, the community will* [be] *vulnerable despite having knowledge*." In Dailekh, a local NGO representative raised the issue of short-term projects, which do not allow the Nine Minimum Characteristics to be sustainably embedded within communities. In addition, the role of local and district level government was also raised in terms of resource provision, technical capacity and ensuring sustainability, with local implementing partners highlighting the need to work across scales from the community to the district levels. As noted by a local NGO representative in Dolakha: "*The work of NGOs is limited with time and certain geographical areas but for the sustainability it* [needs] *all the community and local government to make the DRR/M success.*" The importance of livelihood strengthening for resilience building was also raised by local implementing partners in rural Achham and Dailekh, reflecting the everyday concerns of the rural poor.

### 4.4 Summary and reflections

The case study communities involved in Phase 2 have been dealing with disasters for generations, developing their own response and coping strategies. High levels of poverty and isolation mean that DRR is not a priority concern for many of the rural communities involved in this study, while in urban areas DRR is often seen as the responsibility of government and the security forces and not the communities themselves. As summarised by a participant from a focus group discussion with a tole level organisation in Pokhara: "*Our efforts are like ants working – it is very small scale. It is the government who should be responsible for DRR activities*."

Despite these challenging contexts, the findings suggest that the CBDRR projects informed by the Nine Minimum Characteristics have helped to increase awareness of hazards and risks at the community level, and provided guidance on how to prepare and respond, resulting in a number of positive outcomes. For example, in Kirtipur and Thimi, community people trained in search and rescue saved the lives of a small number of people trapped under rubble following the 2015 earthquake. Both pre-identified safe spaces, and stock-piled search and rescue materials were used by communities following the 2015 earthquake. In Dailekh, local people benefitted from the introduction of a particular type of maize which was more resilient to the frequent windstorms experienced. In Pokhara, the construction of a dam was successful in protecting property from floods.

The effectiveness of community preparedness was, however, seen to depend on the magnitude of the disaster. For relatively small scale disasters, such as the landslide in Dolakha, the preparedness measures such as task forces and stock-piled resources were useful and effective. However, there was a limit as to what trained community volunteers could do, with the resources available, in response to the 2015 earthquake.

The Nine Minimum Characteristics have had a positive impact in a number of respects, although this is not necessarily seen in people's responses to formal institutions, assessments and plans. There appears to be considerable local flexibility and innovation in the hazards considered, the leveraging and use of funds, and in the teams established. These innovations reflect pre-existing community strengths that the Nine Minimum Characteristics have at least partly built upon. More could be done to align the implementation of the Nine Minimum Characteristics with this latent enthusiasm and innovation in order to maximise the benefits to the communities.

# 5. Discussion

While the Nine Minimum Characteristics informed the design of the CBDRR projects included in this Review, the majority of local implementing partners were unfamiliar with the Nine Minimum Characteristics as a framework or tool. However, they were aware of, and could talk knowledgably about, the individual characteristics that were being widely implemented. Reference was made to the LDRMP or '*The pink book*' which was considered the main guideline for CBDRR in Nepal, as well as to project log frames which guided project implementation at the community level. This suggested that the project officers and social mobilisers had limited flexibility in carrying out the projects, which were often designed by the INGOs in Kathmandu who secure the project funding. The focus of projects was pre-determined in almost all cases, with project communities identified based on the level of exposure to the hazard and their vulnerability.

We focus here on the lessons that can be drawn from the implementation of the Nine Minimum Characteristics of a Disaster Resilient Community across the different geographical settings and hazard contexts in Nepal, with a view to informing future CBDRR programming. We structure the discussion around the three geographical contexts in which this research was conducted: the Terai, rural hill and mountain districts, and urban Nepal.

### 5.1 Positive outcomes from the Terai

In Phase 1, which focused predominantly on rural[2] flood-affected communities in the Terai, we observed many positive and tangible outcomes associated the implementation of the Nine Minimum Characteristics in the context of seasonal floods. The effective implementation of early warning systems, the introduction of DRR measures including safe houses and raised water pumps, and the establishment and training of task forces in preparedness and response, were well received by communities across the case study districts. A key impact of the Nine Minimum Characteristics was a move towards collective, community level preparedness, in addition to the traditional practices which were often undertaken at the individual and household levels (for example, storing valuables in high places, selling rice before the monsoon and storing grain with relatives). High levels of poverty in the case study communities meant that householders could rarely afford to build elevated concrete houses or houses on bamboo stilts. As a result, they benefited from the community shelters or safe houses and community grain stores, which were better able to withstand the seasonal flood waters. While these resources and measures performed well during seasonal flood events, participants were unsure how effective they would be in the event of a higher than normal flood event. An additional constraint was limited DRR resources including, for example, limited availability of life jackets, first aid kits and boats.

The most useful Characteristic identified by participants from across the case study communities was the flood early warning system, which provided advanced warning to enable householders to evacuate their livestock and themselves before the flood waters arrive. In this instance, scientific and local knowledge came together, and a communication mechanism was in place that linked the communities with local and national government. Traditional practices used to monitor flood risk were still followed (for instance, monitoring the rivers during periods of intense and prolonged rainfall and observing changes in the colour and flow of the rivers), along with low-tech community level monitoring (for example, using a colour-coded gauge on the buttress of a bridge). However, these measures were supplemented with the monitoring of the height of the river upstream and warnings issued through a clearly defined monitoring and communication network that involved the Department of Hydrology and Meteorology, the district and local government and the community. People were aware of the problems associated with relying on one approach alone. There had been experiences with poor mobile phone coverage and network disruption as well as key early warning messengers being out of contact, unable to receive and communicate warnings. Annual drills involving all members of the community meant that there was a high level of awareness of the community response protocol. The need to prioritise and assist vulnerable groups, in particular the elderly, pregnant women, and children, was well recognised, with plans in place across the majority of communities.

[2]As noted in Section 2.1 while seven of the twelve case study wards had recently been amalgamated into municipalities, and were therefore officially 'urban', they were found to be rural in nature.

In some cases the Disaster Management Committee (DMC) structure worked well. For example, in Kailali, strong links were observed between the LDMC at the VDC level and the five ward–level CDMCs which sit under it. This may be attributed, at least in part, to the appointment of a Planning Sub-Committee at the VDC level which was responsible for engaging with the CDMCs and acting as a conduit to ensure integrated planning across the different scales. In other cases, the CDMCs were less successful, reflecting a range of factors including the outmigration of committee members for employment and the saturation of community groups resulting in the same active community members spending their limited free time sitting on multiple committees. In contexts where there are already established and active community groups (for example, women's groups and community forest user groups), it may be more appropriate for these groups to take on the role of organisational base for CBDRR, rather than establishing a completely new committee.

A main challenge faced in the Terai related to the usefulness of assessments and plans. The Nine Minimum Characteristics assume that community people plan in the same way that those who are formally trained, often to a largely Western model, do. VCAs and disaster management plans which are promoted through the Nine Minimum Characteristics may be counter to the way people traditionally rationalise problems and plan for the future, for example, separating 'natural' hazards such as floods from other livelihood shocks. What is important here is that communities are supported to identify the hazards and risks faced, what actions they can take to prepare on their own, and what outside support they require, and this process should be as inclusive as possible. How they do this can be guided by the Nine Minimum Characteristics, but it should not be rigidly prescribed.

The participatory approach used by local implementing partners, and set out in the LDRMP guideline, is important as it allows local people to '*express, enhance, share and analyse their knowledge of life and conditions*' (Chambers 1994: 1253). However, it is important that the VCA process is owned and led by local people rather than information being '*elicited and extracted by outsiders as part of a process of data gathering*' (ibid: 1253) which research participants often perceived to be the case. The findings from this Review suggest that formal written reports are ineffective at communicating the key outcomes of an assessment and planning process to the community. Community people rarely see the final report and often, as a result, felt that the process was for the NGO or government's benefit and not their own. Identifying a small number of key actions and displaying this information in the community, holding dissemination meetings, or working through established communication channels, such as task forces responsible for information sharing or village leaders, may be more effective. The aim here, as summarised by Chambers (1994) in the context of participatory rural appraisal, is to produce a visible agenda and checklist which is owned by the community and which is acted upon and followed through by the community themselves. If participants can see that the planning has resulted in, for example, the delivery of a training course for masons on earthquake safe construction or the community purchasing two rescue boats, it increases the likelihood of community ownership and further action.

***5.1.1"Preparedness and response is not yet resilience"***

Overall in the Terai, the Nine Minimum Characteristics provided a very useful framework for guiding and facilitating preparedness and response efforts. This reflects the salience to locally perceived priority needs (flood risk reduction) and the availability of good applied science and technology in the form of early warning systems. However, we argue that the Nine Minimum Characteristics are not yet achieving resilience, which is concerned not only with preparedness and response but also recovery and ultimately with the underlying risk factors that need to be addressed in order to prevent or reduce losses from disasters. This point was clearly articulated by the communities themselves, and the project implementing partners, across the case study districts in the Terai. Being resilient means that communities have the capacity to bounce back or even forward following a disaster and this requires livelihood security and enhancement. At the simplest level, in the context of the case study communities in the Terai, this means access to employment or income generating opportunities that will enable householders to build stronger houses that are able to withstand seasonal and more extreme floods, and even to relocate to safer areas. In Phase 1 we saw some very promising examples of livelihoods-centred CBDRR projects that were successfully integrating income generation and flood risk reduction through the farming of sugarcane, grasses and bananas in river beds in Kanchanpur and Saptari.

Achieving resilience also requires the commitment of local government. MoFALD's commitment to DRR in Nepal is impressive, with the introduction of guidelines and performance criteria to guide the implementation of DRR. However, we highlight concerns about the capacity of local government units to implement MoFALD's vision. The research team has met with proactive and engaged VDC Secretaries who are simply overworked and who cannot prioritise DRR. We have also observed gaps in local government linked to the amalgamation of VDCs into municipalities. It is clear from the findings from this Review that communities can only achieve so much on their own and that without local government support, community resilience is unlikely to be achieved. Steps have been taken with the introduction of the LDRMP and the Minimum Performance Criteria but all too often these exercises are completed in a 'tick box' manner without meaningful engagement, the DDRMP being one such example. The process itself is often led by international organisations resulting in limited government ownership, with very few examples of implementation.

**5.2 Positive outcomes and challenges in rural hill and mountain communities**

A key challenge faced in the rural hill and mountain communities related to the scale of the disasters being faced. Unlike the Terai, where flooding was more germane to daily concerns and interests, in the hill communities we observed a mismatch between local priorities and the perceived benefit of disaster preparedness. In the remote Mid and Far West, drought was a significant hazard, with some householders reporting that they had been unable to harvest crops for more than two years. Landslides and floods posed further hazards, destroying and damaging farmland in Achham and Dailekh. As a result, while Disaster Management Committees had been established, their purpose and role were often unclear to community members.

The status of the committees in the case study communities in Dolakha in Central Nepal was much the same. There, task forces were mobilised following a landslide, but the 2015 earthquake overwhelmed the preparedness measures that had been put in place under the Nine Minimum Characteristics, and which was barely functioning in any event following the end of the CBDRR project. The community preparedness and response teams and DRR resources were not perceived to be particularly useful by community members across all six rural case study communities in the hills. In some cases, local level risk reduction measures were seen, such as a landslide drainage scheme in Dolakha, but we did not see as many concrete examples as we did in the Terai, reflecting perhaps the state of knowledge on particular hazards.

In Phase 1, there was also a good deal of knowledge and expertise about flood risk reduction including local community knowledge and scientific and technical knowledge that has been fed in through NGOs and government. This was not found to be the case in the rural hill communities. This may be attributed to a lack of (global) scientific knowledge in some cases and the challenge of diffusion of scientific information in others. For example, approaches to landslide risk reduction focused largely on bioengineering, drainage and the construction of gabion walls, which may not always be the most appropriate means to manage slope failure, often due to the scale of the landslide experienced. The science of landslide early warning systems is underdeveloped in comparison to flood early warning systems; a problem that extends beyond Nepal. While there was some evidence of applied agricultural science helping communities to deal with wind storms (for instance, the introduction of wind resistant maize in Dailekh), it seems that more could be done, such as the provision of advice on how communities could respond to drought with alternative crops or tillage methods. It may be possible to build on the model of the successful partnerships observed in the Terai, for example between the District Agricultural Offices, local sugar mills and communities. Such work may already be underway within climate change projects, but the siloed nature of DRR and climate change adaptation, stemming from international structures and frameworks which are shaping donor programming and project implementation on the ground, may mean that this knowledge is there but is simply not being shared.

It is clear that there is a good deal to be learned from the way the NGO community is taking hold of, and implementing, flood science in the Terai. Flooding was an issue for some of the valley bottom communities in the hill districts too, yet the early warning systems did not seem to be as well established. This may be a function of isolation and poor mobile phone coverage, and may also reflect the expertise of the NGOs implementing the

Nine Minimum Characteristics in these locations. Of particular interest here are the NGO consortia that have been formed to undertake collaborative CBDRR projects in the Terai. Such consortia recognise the different expertise held by different NGOs, for example, in designing and implementing flood early warning systems and working with marginalised groups. This model offers potential benefits for other hazards in rural hill communities, such as drought and landslides.

**5.3 Positive but mixed outcomes in urban areas**

The urban case studies illustrate a recognition of the importance of DRR amongst community members and a clear upsurge of interest since the 2015 earthquake. However, the issue of scale was present here too, with communities asking how they could realistically prepare for and respond to a high magnitude earthquake on their own. Instead, they saw the problem as an issue for government, involving urban planning, infrastructure development, and building code enforcement. On the other hand, a number of smaller, more tractable problems were highlighted by research participants, ranging from waste collection and river bank erosion to power outages. These are problems that the wards could work to address with DRR funding from the municipal government. An 'urban attitude' was certainly noted, whereby community members had high expectations regarding the role of the government in disaster preparedness and response, and indeed wider development planning.

The case studies in the Kathmandu Valley highlight some of the difficulties that can be expected in the transition from rural to urban settlements as new municipalities are established across Nepal. This urbanisation is likely to result in increasingly heterogeneous communities with different languages and understandings of cooperation and governance, as we have seen in two of the case study wards in Thimi and Kirtipur. This can result in exclusion from community groups, illustrated for example by farmers in Thimi municipality being excluded from the local social network and groups such as the CDMC because of language barriers and lack of time to meet.

There were positive actions in response to the 2015 earthquake in the case study communities in the Kathmandu Valley. People engaged in self-protection and also helped each other. Some CDMC trained teams functioned well (although others did not). Many people heeded public awareness messages such as to turn off the gas in their homes and to assemble in safe zones, despite what had seemed like only moderate successes in training and outreach in a community that relies more on television and other sorts of individual information sources. These positive responses to the challenge of the earthquake response were largely organic and based on pre-existing social networks rather than the CDMCs, despite attempts to formalise CBDRR through the implementation of the Nine Minimum Characteristics. For example, in one of the case study wards in Thimi municipality, in the absence of the formal task forces engaging in search and rescue, people not affiliated with the CDMC broke into a store where the response equipment was kept in order to carry out response and relief activities. In another example from Kirtipur, a community-based organisation emerged out of an ad hoc post-earthquake relief coordinating body. In the same ward, a women friendly safe space was established after the earthquake, providing refuge for women fleeing domestic violence and also those who suffered from lack of privacy in temporary post-earthquake accommodation. The women have been taught literacy, income generation skills, and how to get marriage certificates and had sessions on women's rights and domestic violence. In addition, the women shared their stories and built new relationships across caste groups and wards, and felt that they had more say on community matters. These innovations show the potential for social protection and DRR based on the ideas and creativity of urban residents themselves.

In Pokhara, the case study communities provided an example of an urban situation with social and economic diversity that nevertheless had managed to pull together and achieve a great deal – including the construction of small scale dams to reduce the risk of flooding. However, the CDMC stopped meeting after the project implementer left, and some of the trained task forces no longer met. Aspects of the project have only taken root where they were aligned with community priorities and needs. In particular, the early warning task force was very active, and participants perceived that flood losses have been avoided as a result.

Implementation of the Nine Minimum Characteristics in an overly prescriptive way did not seem to provide the focus that the case study communities needed or were looking for in the urban wards in the Kathmandu Valley or Pokhara. The structures created did not tap the potential of the vibrant and creative social networks suggested in the examples given here. In wards where CDMCs had been established, these committees are now largely moribund. This suggests that, for areas with growing urban social characteristics, more flexibility in implementing the Nine Minimum Characteristics is needed.

**5.4 Summary: Future positive outcomes of a flexible framework**

The Nine Minimum Characteristics were never intended to be a rigid framework or guide; indeed, according to the Flagship 4 website, '[t]*he characteristics do not suggest any specific modalities, activities or processes for how each CBDRR project should achieve these Characteristics*' . However, we have documented increasing formalisation, largely linked to the LDRMP. For example, Characteristic 1 is concerned with the establishment of an organisational base at the community level. This has become a CDMC in the majority of projects examined, in line with the LDRMP guidelines. As the findings from this Review have shown, while a CDMC might be the most effective organisational base in some communities, it may not work in others where it may be more appropriate to build upon existing community groups (e.g. women's or youth groups or forest users' groups) or even to work through the ward citizen forum. The findings from this Review suggest there may be benefit to returning to this more flexible framework at the local ward or community level, which is more open to local innovation. Identifying what each Characteristic is designed to achieve, but letting the communities, with support from local NGOs and local government, determine the mechanisms through which each of the Nine Minimum Characteristics will be achieved, may offer a more promising way forward. This will ensure that DRR interventions are more effectively aligned to community priorities and needs.

The Nine Minimum Characteristics provide a stable foundation for building community resilience in Nepal, but the positive outcomes to date are concerned with strengthening preparedness and the ability to respond, and not with resilience. Four factors were identified as the keys to successful implementation: (1) relevance of the characteristics to perceived priority threats and needs at the community level (including livelihood security and enhancement); (2) community access to useful applied scientific and technological information; (3) community ownership and connection with local government; (4) access to adequate funding through clear funding channels. In short: relevance, knowledge, connection, and cash.

# 6. Recommendations

We make specific recommendations for different stakeholder groups, including the Flagship 4 Advisory Committee and Consultation Group, the Government of Nepal (in particular, the Ministry of Federal Affairs and Local Development, MoFALD), the international donor organisations that are funding CBDRR activities in Nepal, and NGOs that are designing and implementing CBDRR projects informed by the Nine Minimum Characteristics of a Disaster Resilient Community. These recommendations were co-produced with Flagship 4 partners - including government representatives from MoFALD, MoHA, the Ministry of Urban Development and the National Planning Commission, donor organisations, the UN, NGOs and the IFRC - at the Research Dissemination Workshop held in Kathmandu in August 2016 and in follow-up meetings. We encourage all stakeholders to read all recommendations to increase understanding of the wider context for CBDRR implementation.

The recommendations reflect the four factors that this Review has highlighted as being key to the successful implementation of the Nine Minimum Characteristics:

- **relevance** - relevance of the Characteristics to the perceived priority threats and needs at the community level;
- **knowledge** - community access to useful applied scientific and technological information;
- **connection** - community ownership and connection with local government; and
- **cash** - access to adequate funding through clear funding channels.

### 6.1 Recommendations for the Flagship 4 Advisory Committee and Consultation Group

The Nine Minimum Characteristics of a Disaster Resilient Community provide a useful starting point for all CBDRR projects in Nepal including projects being implemented in the mountains, hills and Terai, across both rural and urban areas. However, the Nine Minimum Characteristics should be used in a flexible manner and adapted for different geographical and hazard contexts to ensure their relevance to specific communities. As the findings from this Review have shown, there can be no one-size-fits-all approach to CBDRR, even within the same geophysical setting or rural/urban context.

There are opportunities to condense the Nine Minimum Characteristics to remove some overlap. For example, Minimum Characteristic 9 (early warning systems) is a risk reduction measure and could therefore sit under Characteristic 8. Minimum Characteristic 4 (community preparedness and response teams) could sit under Characteristic 7 (community managed DRR resources). In addition, many of the Characteristics are linked to, and will be determined by, the outcomes of Minimum Characteristic 3 (multi-hazard risk and capacity assessments) and 5 (DRR/M Plan at the VDC/municipal level). For example, the ways in which Characteristic 8 (local level risk/vulnerability reduction measures) is achieved will depend upon the outcomes that are produced in addressing Characteristic 3 and 5. In light of this, the Flagship 4 Advisory Committee and Consultation Group may wish to consider the order in which the Nine Minimum Characteristics are presented.

More important than condensing the Nine Minimum Characteristics is the need to clearly articulate what each Characteristic is aiming to achieve and the key questions that need to be asked to guide their implementation. The overall aim should be to provide a flexible framework, where the communities themselves are responsible for identifying their own needs and the most appropriate means of implementing the Nine Minimum Characteristics that are relevant to them. Based on the findings from this Review, a series of example questions have been developed for each Characteristic (see Table 6.1). This should not be taken as a definitive checklist. Rather, we recommend that the Flagship 4 Advisory Committee and Consultation Group works with Flagship 4 partners to add to and refine these questions, drawing on partners' experiences of implementing the Nine Minimum Characteristics in a range of community contexts.

The overall aim of the Nine Minimum Characteristics is for the communities themselves to identify their own needs in relation to DRR, the support they require and the most appropriate means of realising that support

*Table 6.1: Example questions to guide the implementation of the Nine Minimum Characteristics*

| CHARACTERISTIC | AIM | GUIDING QUESTIONS |
|---|---|---|
| **Characteristic 1 Organisational base** | To establish a functional and sustainable organisational base at the community level | • How is the ward organised? Are there sub-communities? Are some sub-communities more at risk than others? Does the ward need a single organisational base or more than one? If the ward needs more than one organisational base, how will these organisational bases be linked?<br>• Are there existing groups already working towards DRR that could take on the role of the organisational base or is a new committee required? If a new committee is required, how should this be organised to minimise the burden on community members?<br>• How can the organisational base(s) be most effectively linked to local government e.g. through the Ward Citizen Forum? |
| **Characteristic 2 Access to DRR information** | To facilitate access to DRR information | • What DRR expertise (including local knowledge and scientific/technical expertise) are available at the community, VDC and district levels e.g. within local government, universities, research institutes and local businesses?<br>• Are there any gaps in knowledge or expertise? If yes, what are these gaps and how can these knowledge gaps be addressed?<br>• Does the CDMC or equivalent have access to the technical information required to enable them to identify the hazards and risk faced, and to design and implement their local disaster risk management plan? If no, how can the CDMC or equivalent be supported to access, interpret and use this information? |
| **Characteristic 3 Multi-hazard risk and capacity assessments** | To understand the hazards and risks faced at the community level, and the capacity of communities to respond, including their need for outside support. The VCA should inform the DRR plan. | • Does the community see value in undertaking a VCA? If not, why not and how can their concerns be addressed to ensure that the process is useful and beneficial to the community?<br>• Who should lead and be involved in the VCA process? How can the process be made as inclusive as possible?<br>• Does the community have access to the scientific and technical information they need to undertake an informed assessment of the hazards and risks faced (this includes rapid-onset hazards and slow-onset events linked to climate change)? If no, how can they be supported to access this information?<br>• How can the findings from the assessment be effectively communi cated to the wider community? |
| **Characteristic 4 Community preparedness / response teams** | To establish, train and equip preparedness and response teams, as required at the community level | • Based on the multi-hazard risk and capacity assessment undertaken, would the community benefit from the establishment of preparedness and response teams/task forces? If yes, in which thematic areas?<br>• What existing human resource exists within the community that could be drawn upon in establishing these task forces? Do new groups need to be established? How will the community deal with the loss of members?<br>• What training is required? Who should deliver the training and how often should the training be provided?<br>• What resources do the task forces require? How will these resources be maintained? |
| **Characteristic 5 DRR/M plans** | To prepare a DRR/M plan at the VDC/municipal level, which builds on the community level multi-hazard risk and capacity assessments undertaken | • Does the plan address the needs and actions identified by the communities themselves as part of the multi-hazard risk and capacity assessments? Has this been communicated back to the communities?<br>• How will the plan be implemented? Have roles and responsibilities been identified? Does the VDC/municipality have access to technical expertise that they may require to implement the plan? Has funding been identified for the actions and activities identified? |

| CHARACTERISTIC | AIM | GUIDING QUESTIONS |
|---|---|---|
| **Characteristic 5 DRR/M plans (continued)** | | • How will the plan be integrated into the local level annual and periodic planning processes?<br>• How will the community be involved in the monitoring and evaluation of the plan?<br>• How will the VDC/municipal plan feed into, and inform, the district level plan? |
| **Characteristic 6 DRR/M plans** | For communities to have access to adequate funding through clear funding channels at the ward and VDC levels | • Does the community have a pre-existing community level emergency fund? Do all members have access to the fund? If no, would an emergency fund be of benefit to the community? How should this be organised to ensure maximum benefit to all and sustainability beyond the project?<br>• Does the community have access to a DRR fund? Is the community aware of the 5% budget for DRR available at the VDC/municipal level? Is the community aware of other funding sources such as the Constituency Development Fund? Do they understand what the fund is allocated for? Does the community know how to access and have the capacity to access the DRR fund? What support do they require to access this resource?<br>• Have sufficient funds been identified to address the actions specified in the DRM plan? |
| **Characteristic 7 Access to community managed DRR resources** | To ensure the community has access to human and material resources for DRR | • What human resources exist at the community level? What opportunities are there to mobilise this human resource to reduce disaster risk? What DRR-related initiatives are already underway which could be capitalised on?<br>• What technical expertise and resources exist at the VDC/municipal and district levels e.g. trained engineers or other technical experts? What support does the community need to access these resources?<br>• What material resources e.g. equipment does the community have access to? What material resources would the community benefit from? How can this equipment be funded? Where can the equipment be stored and how can the equipment be most appropriately managed to ensure equitable usage? What training is required? |
| **Characteristic 8 Local level risk/vulnerability reduction measures** | To identify, prioritise and implement the local level risk/vulnerability reduction measures identified through the VCA and DRR planning processes | • Does the community have access to the technical/scientific information required to support them in identifying and prioritising local level risk/vulnerability reduction measures for the hazards identified in the VCA?<br>• What actions need to be taken to implement these measures? What support is required from local government? Has funding been identified through government or other sources? |
| **Characteristic 9 Early Warning Systems** | To develop inclusive, community-based early warning systems which are integrated within VDC, district and national level systems | • Is an early warning system possible for the hazard identified? If yes, would the community benefit from the establishment of a community level early warning system? What technical/scientific expertise is available to support the development of an early warning system?<br>• How will the system be embedded within the community and within national level monitoring and early warning systems, if available?<br>• Once established, is the whole community aware of the early warning system and have they participated in drills/simulations? |

*(N.B. This should not be viewed as a definitive checklist but should be used a starting point for discussion amongst Flagship 4 partners. We particularly encourage the input of local partners who have the experience of implementing CBDRR projects informed by the Nine Minimum Characteristics.)*

The Flagship 4 platform provides an excellent mechanism for knowledge and experience sharing between partners. We recommend that the Flagship 4 Advisory Committee and Consultation Group capitalises on this and collates examples of good practice from Flagship 4 partners and prepares a series of case studies highlighting how the Nine Minimum Characteristics have been flexibly applied in different community contexts for dissemination between partners.

In order to move beyond disaster preparedness and towards resilience there is a need to begin to address underlying poverty through the strengthening of livelihoods. However, it was agreed by partners involved in the dissemination workshop that including livelihoods strengthening as an explicit Characteristic was not the correct approach. Rather, there should be an effort to link DRR wherever possible to on-going livelihood enhancing activities as a way of beginning to address the root causes of vulnerability as well as minimising disaster losses or damage to development activities. This position reflects a strong assertion amongst workshop participants that DRR is the responsibility of the development/humanitarian community as a whole and not just those specialised in DRR; and that stand-alone CBDRR projects are less likely to be effective than development projects that mainstream DRR. Recognising the current funding model - which is likely to continue to support CBDRR projects - and the wider development goal of DRR mainstreaming, the Flagship 4 Advisory Committee and Consultation Group should consider developing two sets of guidance notes:

- The first should target Flagship 4 partners designing and implementing CBDRR projects and draw on the expertise of livelihoods experts. The guidance note should provide examples of how the DRR and economic development/livelihoods communities could work together for a more livelihoods-centred approach to DRR, for example through the establishment of partnerships involving government (e.g. the District Agriculture Development Office) and the private sector (e.g. insurance companies).
- The second guidance note should target the development community and set out how the Nine Minimum Characteristics could be used within wider development projects e.g. road construction and water, sanitation and health.

This Review highlighted the scientific and technical knowledge that exists on flood hazard and flood risk reduction in Nepal. However, there is a need to strengthen expertise in other hazards. We recommend that the Flagship 4 Advisory Committee and Consultation Group explores opportunities for Flagship 4 partners to collaborate with the newly established Landslide Management Centre led by the Department of Soil Conservation and Watershed Management, and other hazard-specific working groups, for example, on drought. The aim here would be to explore what is already known about the hazard, the DRR measures that could be put in place to reduce risk and build resilience, the additional research required to better understand the hazard and risk management options, and the technical capacity gaps that exist and which need addressing at the VDC, municipal and District Government levels. There also presents an important opportunity for hazard experts to learn about community needs from Flagship 4 partners engaged in CBDRR.

There is a need for the Flagship 4 Advisory Committee and Consultation Group to support MoFALD in developing a clear guideline for local government officials about how the 5% development budget should be used to support the implementation of the Nine Minimum Characteristics at the community level (see recommendations for MoFALD below). However, this alone is unlikely to lead to the implementation of local government-funded DRR activities. There is also a need to strengthen the capacity of VDC, municipal and district government to support CBDRR, for example through access to DRR knowledge and technical support (see recommendations for MoFALD and the donor community).

### 6.2 Recommendations for MoFALD

We recommend that MoFALD continues to promote the flexible uptake and use of the Nine Minimum Characteristics by development partners to support disaster preparedness in all contexts (rural and urban; mountains, hills and terai). However, MoFALD should explicitly encourage the funding and implementation of

projects informed by the Nine Minimum Characteristics in the mountain and hill districts which have not been the traditional focus of CBDRR activities in Nepal, and in urban areas where more research and practice is needed in order to understand how to effectively adapt and apply the Nine Minimum Characteristics.

Linked to this, we recommend that MoFALD promotes the use of the Nine Minimum Characteristics within the National Reconstruction Authority, which is coordinating the reconstruction effort following the 2015 earthquakes. For example, the CDMCs may offer a suitable platform for engaging with communities on reconstruction issues, removing the need to create a new consultation body. When working in communities that are new to CBDRR, implementing partners should also be encouraged to flexibly implement the Nine Minimum Characteristics are part of their earthquake reconstruction activities, to ensure they take a broad and holistic view of DRR.

There is also a need to develop a more appropriate and focused monitoring and evaluation mechanism to assess the role of the Nine Minimum Characteristics in enhancing community resilience. For example, some partners engaged in project monitoring and evaluation felt as though the Characteristics were lacking clear, agreed-upon output and outcome indicators. This relates to the above recommendation for the need to clearly articulate what each Characteristic is aiming to achieve and the key questions that need to be asked to guide their implementation (see recommendations for the Flagship 4 Advisory Committee and Consultation Group).

As well as encouraging the reporting of outputs in relation to the Nine Minimum Characteristics (e.g. the number of committees established, plans developed and people trained), partners should also be encouraged to report how the Nine Minimum Characteristics were adapted for use in different community contexts in order to address community needs and to ensure community ownership and sustainability, and the outcomes that have resulted from the intervention (i.e. the evidence suggesting that resilience has been increased). The aim here is to measure impact more holistically. As a first step, we recommend that MoFALD develops a series of questions for partners to address which focus on the outcomes associated with the Nine Minimum Characteristics as well as the outputs. We also recommend a repeat of this Review in 3-5 years' time to explore the ongoing impact of the Nine Minimum Characteristics, particularly in light of the recommendations made here. As well as being valuable for internal monitoring purposes, this will also assist the Government of Nepal in their reporting to the UNISDR under the Sendai Framework for Disaster Risk Reduction.

While MoFALD has demonstrated its commitment to CBDRR at the national level, there is a need to strengthen VDC, municipal and district government capacity in DRR so that, ultimately, CBDRR can be implemented by local government. MoFALD should encourage all CBDRR projects to include a local government capacity building component. For example, in the context of landslide risk reduction, this may involve building the capacity of the District Soil Conservation Office through training programmes involving landslide experts from universities and the Department of Soil Conservation and Watershed Management. This is likely to involve cross-government coordination.

The allocation of 5% of the VDC/municipal level development budget to DRR is an important step towards mainstreaming DRR into development planning. However, as this Review has shown, the funds are rarely used for their intended purpose, with the funds often held back for disaster response. Clear guidelines need to be prepared for local government officials to ensure that the funds are used for their intended purpose, along with examples of how the funds could be spent and sources of technical advice and information. This is also an opportunity to raise awareness of other sources of government funding which could be used to support the implementation of the Nine Minimum Characteristics e.g., the Constituency Development Fund.

There was recognition amongst the workshop participants that CBDRR projects alone cannot be expected to build community resilience. MoFALD should therefore encourage the use of relevant Characteristics within wider development projects, for example, within rural road construction and health (see recommendations for

the Flagship 4 Advisory Committee and Consultation Group and the donor community). Developing some examples of how the Nine Minimum Characteristics could be used in these different contexts would be helpful.

At present there is some confusion regarding the role of the Nine Minimum Characteristics in relation to the LDRMP Guideline and the annual 14-step development planning process. The LDRMP guideline sets out a very prescriptive approach to local disaster risk management planning, which begins at the district level with detailed instructions for municipal, VDC and community level consultation and engagement. When revising the LDRMP guideline, there is a need to clearly articulate the role of the Nine Minimum Characteristics within this process. For example, having selected the most hazard prone/vulnerable municipalities and VDCs within a given district, the Nine Minimum Characteristics could inform a more flexible approach to community (ward) level DRR, the outcomes of which would then feed into and inform the VDC, municipal and district level DRM plans.

There is also a need to clearly articulate the links between the LDRMP Guideline and the National Framework for Local Adaptation Plans for Action (LAPA) (GoN 2011), which guides local level climate change planning, to avoid duplication and the development of multiple plans which do not link up. Consideration should also be given to the role of the Nine Minimum Characteristics within the LAPA, given the obvious synergies between the frameworks being promoted (climate change sensitisation, vulnerability and adaptation assessment, prioritisation of options, development of a plan, implementation of the plan, and assessment of progress (Watts 2012)).

### 6.3 Recommendations for Donors

Donors should continue to promote the flexible use of the Nine Minimum Characteristics within donor-funded CBDRR projects, with the aim of enhancing community preparedness and response capacity.

There is a need to encourage the implementation of the Nine Minimum Characteristics in the hill and mountain districts - where fewer CBDRR projects have been implemented to date - as the European Commission of Humanitarian Aid is doing across four of the earthquake-affected districts in Central Nepal. While the findings from this Review suggest that the Nine Minimum Characteristics have relevance in the mountain and hill districts, efforts are needed to understand how to effectively support communities to prepare for mountain hazards including rapid-onset landslides and floods, and slow-onset events such as drought, and to adapt what has been learnt from working with flooding in the Terai. There was recognition amongst many of the international NGO and local NGO partners that projects in the mountain and hill districts present additional logistical challenges associated with geography and physical isolation. It may therefore be necessary and beneficial to extend the time frame for CBDRR projects being undertaken in these locations to accommodate these logistical challenges.

There is also a need to better understand how the Nine Minimum Characteristics should be adapted for use in urban settings. While this Review offers useful insights from six urban case study wards, further research and piloting is required across a range of urban settings, including rapidly urbanising areas with heterogeneous populations, which characterise many of the newly emerging cities.

A key challenge faced in the implementation of the Nine Minimum Characteristics relates to the limited technical capacity at the local and district government levels. Donors should encourage the inclusion of local government capacity building within CBDRR project proposals to help to address this technical capacity gap and to ensure the sustainability of CBDRR interventions. This should include, for example, training district engineers in slope stabilisation practices, so that communities have access to the expertise required to fully and sustainably implement the Nine Minimum Characteristics.

In order to move beyond preparedness and response, and towards resilience, donors could look to establish cross-sector funding calls on resilience, which are informed by the Nine Minimum Characteristics and involve, for example, the DRR, climate change, and economic development and livelihoods sectors. Looking beyond these CBDRR-focused projects, donors should encourage the use of relevant Characteristics within wider development

and humanitarian projects. This requires further consultation with DRR experts and the wider development/ humanitarian community to see how the Nine Minimum Characteristics might be applied and, if necessary, adapted for these different contexts, for example, infrastructure development projects (see the recommendations for the Flagship 4 Advisory Committee and Consultation Group and MoFALD).

We encourage donor organisations to take a more holistic approach to monitoring and evaluation which looks beyond more reductionist output and outcome indicators and considers longer-term outcomes which may not be captured through conventional monitoring and evaluation processes (see the recommendations for MoFALD above). The donor community may find the "stocktaking evaluation" approach developed by McCusker for USAID to monitor the impact of natural resource management in Malawi useful here (see: https://blog.usaid.gov/2014/01/uncovering-success-a-holistic-approach-to-taking-stock-of-natural-resource-management-interventions/).

### 6.4 Recommendations for international NGOs

International NGOs should be encouraged to use the Nine Minimum Characteristics as a starting point when designing their CBDRR projects in all contexts. The Characteristics should be used in a flexible way, using the questions in Table 6.1 as a starting point. These example questions have been informed by the findings of this Review, with the aim of addressing some of the challenges faced and ensuring their effective and flexible implementation. International NGOs are encouraged to feed into and help to refine these questions in consultation with their local implementing partners based on their experiences of designing and implementing CBDRR projects informed by the Nine Minimum Characteristics, particularly in rural hill and mountain communities, and urban settings.

We recommend that international NGOs continue to share their experience, technical knowledge and expertise to further strengthen the Nine Minimum Characteristics by feeding into:

- the hazard-specific working groups;
- the guidance note on livelihood-centred approaches to DRR; and
- the guidance note on applying the Nine Minimum Characteristics within wider development/ humanitarian projects.

### 6.5 Recommendations for local implementing partners

Local implementing partners should be briefed on the Nine Minimum Characteristics by the international NGO with which they are working, including the overall aims of each Characteristic and the example guiding questions (Table 6.1). They should be encouraged and given space to apply the Nine Minimum Characteristics in a flexible way, with the communities themselves identifying their own needs in relation to CBDRR and the most appropriate mechanism for implementing the relevant Characteristics. It is important that local implementing partners recognise their primary role in supporting and empowering communities to: identify their priority threats and needs at the community level; access useful applied scientific and technological information; connect with local government; and, access funding (relevance, knowledge, connection, cash). Drawing on their extensive field experience, implementing partners should be encouraged to feed into and help refine the example questions to guide the implementation of the Nine Minimum Characteristics.

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# Appendix A

## Summary of Community level interviews and focus groups, Phase 1

| District | VDC / municipality | Ward / community | Interview / focus group | Interviewee / community group |
|---|---|---|---|---|
| Kailali | | | Interview | Project implementing partner |
| | VDC1 | | Interview | Coordinator of the VDC level Planning Sub-Committee<br>VDC Secretary |
| | | Ward A | Interview<br><br>Focus Group | President of the CDMC<br>President of the Agricultural Group<br>CDMC<br>Early Warning Task Group<br>Mixed Community Group<br>Mothers' Group |
| | | Ward B, Community 1 | Interview<br>Focus Group | Village Headman<br>CDMC |
| | | Ward B, Community 2 | Focus Group | Community Awareness Committee |
| | | Ward B, Community 3 | Focus Group | Mothers' Group |
| Kanchanpur | VDC1 | | Interview | VDC Secretary<br>Project implementing partner<br>LDMC representative |
| | | Ward A | Interview<br>Focus Group | Gauge reader and member of Agriculture Group<br>Cooperative<br>Mothers' Group<br>Sub-community CDMC |
| | | Ward B | Interview<br>Focus Group | Representative of the Ward Citizen Forum<br>CDMC<br>Youth Club<br>Agriculture Group |

| District | VDC / municipality | Ward / community | Interview / focus group | Interviewee / community group |
|---|---|---|---|---|
| Bardiya | Municipality 1<br>Project 1 | | Interview | Executive Officer of Municipality |
| | | Ward A | Interview<br><br><br><br>Focus Group | Principle of Primary School<br>Member of Search and Rescue Committee<br>Village Headman, DMC Chairperson, member of Ward Citizen Forum<br>CDMC<br>Representatives of the Dalit Community<br>Task Force Group<br>Women's Agriculture Group |
| | | Ward B, Community 1 | Focus Group | CDMC<br>Tharu Women<br>Community Forestry Group |
| | | Ward B, Community 2 | Focus Group | CDMC |
| | | Ward B, Community 3 | Focus Group | Task Force |
| | Municipality 1<br>Project 2 | | <br>Interview<br>Interview | Women's Agriculture Group<br>Local implementing partner (project officer)<br>Local implementing partner (social mobilizer) |
| | | Ward A | Focus Group<br>Focus Group | CDMC<br>First Aid and Search and Rescue Committees<br>Principal, Lower Secondary School |
| | | Ward A, sub-community | Interview<br>Focus Group | Sub-community<br>Women's Agriculture Group |
| | | Ward B | Interview<br><br><br>Focus Group | Village Headman / Secretary of the CDMC<br>Coordinator of Ward Citizen Forum<br>CDMC<br>Saving and Cooperative Group<br>Mothers' Group |

| District | VDC / municipality | Ward / community | Interview / focus group | Interviewee / community group |
|---|---|---|---|---|
| Saptari | | | Interview | Project implementing partner<br>VDC / municipal ward secretary |
| | Municipality 1 | Ward A | Interview | Municipal social mobiliser<br>CDMC Chairperson<br>VCD-DMC President |
| | | | Focus Group | CDMC<br>Seach and Rescue Team<br>Ward Citizen Forum |
| | VDC1 | Ward B | Interview | Chairman, CDMC<br>Ward Secretary<br>Social Mobilser |
| | | | Focus Group | CDMC<br>Early Warning Team<br>First Aid Team<br>Search and Rescue Team |
| Mahottari | | | Interview | Project implementing partner |
| | Municipality 1 | Ward A | Interview | Ward Secretary<br>Head Teacher<br>Social Mobiliser |
| | | Ward A (Tole 1) | Focus Group | Community Forest User Group |
| | | Ward A (Tole 2) | Focus Group | Women's Group<br>Youth Group |
| | Municipality 2 | Ward B | Interview | Youth Group<br>Ward Secretary<br>Social Mobiliser<br>Participant in the LDRMP workshop / member of District Early Warning System Committee |
| | | | Focus Group | Community representatives who participated in a DRR workshop organised by the implementing NGO<br>Women's Saving and Credit |

# Appendix B

## Summary of Community level interviews and focus groups, Phase 2, rural

| District | VDC / municipality | Ward / community | Interview / focus group | Interviewee / community group |
|---|---|---|---|---|
| Achham | | | Interview | Local implementing partner |
| | VDC1 | | Interview | VDC Secretary |
| | | | | VDC Social Mobiliser |
| | | | | Teacher, member of Red Cross Chapter |
| | | | Focus Group | LDMC (VDC level) |
| | | Ward A | Focus Group | Ward Citizen Forum |
| | | | | Women's Savings and Credit Cooperative |
| | VDC2 | | Focus Group | LDMC (VDC level) |
| | | Ward B | Interview | Member of Ward Citizen Forum and former social mobiliser of the LDMC (VDC level) |
| | | | | School Teacher |
| | | | Focus Group | Community Forest User Group and Ward Citizen Forum |
| | | | | Women's Group |
| Dailekh | | | Interview | Local implementing partner |
| | VDC1 | | Interview | VDC Secretary |
| | | Ward A | Interview | President of the CDMC |
| | | | | Coordinator of the Ward Citizen Forum |
| | | | Focus Group | Community Forest User Group |
| | | | | CDMC |
| | | | | Members of the Dalit community |
| | | Ward B | Interview | Political party representative and chairman of cooperative |
| | | | | Coordinator of the Ward Citizen Forum |
| | | | | Principal of the secondary school |
| | | | Focus Group | Mixed group including representatives from the CDMC, Farmers' Group, Local Forest Users' Group, Cooperative |

| District | VDC / municipality | Ward / community | Interview / focus group | Interviewee / community group |
|---|---|---|---|---|
| Dolakha | | | Interview | INGO representative<br>Local implementing partner |
| | VDC1 | | Interview | VDC Social Mobiliser<br>President of the LDMC |
| | | Ward A | Interview | CDMC member and Early Warning System Team Leader<br>Member of community cooperative and former President of the Community Forest User Group |
| | | | Focus Group | Women's Group<br>CDMC<br>Community Forest Group |
| | | Ward B | Interview | LDMC President (VDC level)<br>President of Community Forest User Group |
| | | | Focus Group | Ward Citizen Forum<br>Women's Group |

# Appendix C

## Summary of Community level interviews and focus groups, Phase 2, urban

| District | VDC / municipality | Ward / community | Interview / focus group | Interviewee / community group |
|---|---|---|---|---|
| Kathmandu | Kirtipur | | Interview | Local implementing partner<br>Municipal DRR Focal Person and Engineer<br>NGO Social Mobilser |
| | | Ward A | Interview<br><br>Focus Group | Coordinator of the CDMC<br>Ward Secretary<br>CDMC<br>Executive members of a CBO<br>Executive Committee of Women Friendly Space<br>Group of women taking shelter and classes in the Women Friendly Space |
| | | Ward B | Interview<br><br><br><br>Focus Group | Social Mobiliser<br>General Secretary of the ward DM Committee<br>DMC member<br>Ward Secretary<br>Women's Group<br>CDMC |
| Bhaktapur | Thimi | | Interview | Local implementing partner |
| | | Ward A | Focus Group | CDMC<br>Ward Citizen Forum<br>Youth Club |
| | | Ward B | Interview<br>Focus Group | President and Secretary of Red Cross Chapter<br>Women's Group<br>CDMC<br>Youth Red Cross Circle |

| District | VDC / municipality | Ward / community | Interview / focus group | Interviewee / community group |
|---|---|---|---|---|
| Kaski | Pokhara | | Interview | Local implementing partner |
| | | Ward A | Interview | School principle<br>Ward Secretary |
| | | | Focus Group | Mothers' Group which also functioned as the CDMC<br>Mother's Group<br>CDMC |
| | | Ward B | Interview<br>Focus Group | Ward Secretary<br>CDMC (ward level)<br>CDMC (community level)<br>Tole Level Organisation |

# Appendix D

## Summary of District-level interviews. Phases 1 and 2

| Phase | District | Stakeholders interviewed |
|---|---|---|
| Phase 1 | Kailali | Social Development Officer and DRR Focal Person<br>INGO representative at the district level<br>Nepal Red Cross Society district representative |
| | Kanchanpur | District Local Development Officer<br>INGO representative at the district level |
| | Bardiya | District Local Development Officer<br>Nepal Red Cross Society district representative |
| | Saptari | Senior Programme Officer and DRR Focal Person<br>Nepal Red Cross Society district representative<br>Social Development Officer<br>Nepal Red Cross Society district representative |
| Phase 2 | Achham | District Local Development Officer<br>Nepal Red Cross Society district representative |
| | Dailekh | DRR Focal Person<br>Nepal Red Cross Society district representative |
| | Dolakha | Planning Officer and DRR Focal Person |
| | Kathmandu | Engineer and DRR Focal Person |
| | Kaski | City Development and Public Works Department |

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