

## Helpdesk Research Report

# Subnational disaster risk management involving communities in Nepal

Emilie Combaz

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## Question

*Please provide an overview of the literature on subnational disaster risk management that involves communities in Nepal. Identify successes and failures (including with regard to social inclusion), and key factors of success and failure. Where possible, consider variation among districts, engagement with local and district government, and the types and methodologies of interventions supported. Focus on disaster preparedness and risk reduction, with resilience and response as complementary considerations.*

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## 1. Overview

Nepal is exposed to a variety of natural and human-made hazards, both rapid- and slow-onset, at small and large scale. These challenges for disaster risk management (DRM) are heightened by widespread corruption, stark political, economic and social conflicts and inequalities, and the legacy of tensions from the civil war (1996-2006). In a bid to better tackle risk (exposure and vulnerabilities) and its management (capacities and resilience), domestic and foreign actors have promoted DRM that involve communities at the levels of regions, districts, municipalities, wards, or smaller-scale units such as schools. But have these programmes truly been effective? This rapid literature review looks at the evidence, primarily on preparedness and disaster risk reduction (DRR), and secondarily at resilience and response.<sup>1</sup>

It finds limited but rigorous evidence, which shows a mixed record. The key findings are as follows:

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<sup>1</sup> At DFID's request, it does not examine recovery, nor community action with no external intervention.

- Successful interventions have had notable **impact**, including: lives saved and injuries avoided, livelihoods preserved or improved, public goods like schools protected, better preparedness of populations and local government, empowerment (including for women) in some communities, and greater resilience. A number of well implemented programmes have been very efficient. Conversely, interventions that have partially or entirely failed have led to opposite impacts.
- **Factors typically associated with positive impact** have included:
  - Carrying out **effective programming** for local preparedness and response, with a mix of interventions like physical protections against floods, capacity-building, and strengthening of local institutions for DRM and their links to various levels of government. For instance, external evaluations document good programming in local DRR led by ECHO and its NGO partners, and in local DRM in the Tarai led by Nepalese and international actors. Strong local leadership for DRM is also widely noted as a significant factor.
  - **Adapting DRM to urban areas**, for example by taking into account mobility, domino effects leading to sequential crises, and the need for local leadership skilled in complex urban DRM.
  - **Embedding DRR in schools**, with a combination of physical and community interventions.
  - **Empowering disadvantaged groups**, such as the poorest, women, children, persons with disabilities, and members of lower castes.
  - Drawing on **enabling laws and norms** (e.g. “Mandatory Rules of Thumb”, forestry groups).
- **Factors typically associated with negative impact** have included:
  - **Inaction and problems in formal DRM policies, laws and implementation.** There are gaps in laws and regulations (e.g. on land use). All levels of government have displayed limited action, capacities, coordination and consultation on subnational DRM. Some programmes for community- and school-based DRM had deficiencies.
  - **Lack of learning from other disasters and DRM** (e.g. across regions, hazards or projects).
  - **Adverse implications of international, national and local political economy.** Major factors include political constraints on decision-making (e.g. elite capture), inequalities and divisions (e.g. gender, caste), and technical framings and silos that neglect the connections between broad issues such as livelihoods, governance, equity, conflict, environment and hazards.
- **Some factors have had contradictory effects on DRM:** linkages between communities and local government, and migration. Some effective DRM activities have also generated unintended negative consequences (e.g. false sense of safety due to embankments, numbing to risk).

## 2. State of knowledge

A limited segment of the literature on disasters in Nepal published in the past five years examines DRM that takes place at subnational levels and that involves communities. A number of references on subnational DRM document inaction, but this report focuses on existing interventions. The evidence base identified through this rapid review has several strengths. Most references were rigorous and the evidence base is informed by diverse quantitative and qualitative methods, found in a range of academic, practitioner and policy sources. On the whole, all aspects of DRM receive attention, from DRR to response and resilience. So do the different subnational levels, and the major types of hazards in Nepal. The literature also covers a variety of geographic areas within Nepal, from remote rural areas to urban locations. Findings are largely consistent (though there is some disagreement on certain points – see

sub-section on contradictory factors). Many findings establish strong correlations, and a few demonstrate causalities. Frequently established findings seem conclusive, while isolated findings are indicative.

However, the knowledge base also has weaknesses. There is no systematic, comparative or meta-review of the evidence on subnational DRM in Nepal: all findings stem from case studies. Many references, especially in grey literature, document and discuss outputs and outcomes, much less results or impact. The literature as a whole gives some consideration to socio-economic class, caste, gender, ethnicity, age, and migration. Yet, it often does so through basic descriptors rather than critical analysis (e.g. discussion of women rather than gender). Individual references do not systematically consider social inequalities or their interplay. There are nearly no detailed rigorous discussions of (dis)ability.

### 3. Achievements and positive factors

This section starts with an overview of achievements documented in the literature, before sub-sections details factors associated with positive impact.

The literature identifies a variety of interventions in subnational DRM as successful. **Results of successful interventions** mentioned in many references include: lives saved and injuries avoided, livelihoods preserved or improved, protected public goods such as schools, improved preparedness of populations and local government, empowerment (including for women) and social cohesion in some communities, and changes towards lesser vulnerability and more resilience on the long term. There is no clear pattern of intervention type or method emerging as a marker of success or failure – rather, other variables, discussed in the sub-sections below, seem significant.

In addition to the results above, a number of well implemented DRR programmes are found to have good **efficiency**. For example, one cost-benefit analysis looked at DRR initiatives in Kailali carried out in 2007-2009 by Mercy Corps Nepal and the Nepal Red Cross Society, within ECHO's DIPECHO programme (White & Rorisk 2010). The NGOs helped selected communities prepare for severe annual flooding. The authors' statistical model showed that, for every Euro spent, the project yielded a minimum of 3.49 Euros in economic and social benefits, i.e. a cost-benefit ratio of 3.49. This ratio does not even include the economic, social and environmental benefits to the community that were not quantified, such as: fewer deaths and injuries from floods; protection of livestock, agricultural tools and seeds, and clean water; empowerment, notably for women; collective action among and between communities (including towards government); continuity in schooling; fewer men migrating out; saved costs due to lessened need for disaster response (*idem*: 4, 8-9, 20-21).

#### Carrying out effective programming for local preparedness and response

**Strong leadership** in local programmes is widely cited as an essential factor of success for community action (e.g. Jones, Aryal & Collins 2013: 463).

##### *Local DRR in EU ECHO's programmes*

A 2010 external evaluation, commissioned by the European Commission's ECHO, assessed ECHO's action in Nepal (Willitts-King, Morris-Iveson, & Dhungana 2010: 15-18). Among others, the review examined ECHO's DRR programmes between 2006 and 2009, looking at projects implemented by Oxfam GB in Saptari district, ActionAid in Sunsari, Mercy Corps in Kailali, Care in Kailali, and Mission East in Humla and

Mugu. All projects entailed community-based preparedness and mitigation, capacity-building for Community Disaster Management Committees (CDMCs), and some local disaster management.

In terms of **appropriateness and coordination**, the projects were well targeted and coordinated, in consultation with national and district government (*idem*: 15-17). Targeting on the basis of need was generally achieved, including for women, marginalised communities, people with disabilities, and children (*idem*: 23). Projects were well planned, well designed, and well implemented, with strong bottom-up approaches and learning. The projects reduced communities' vulnerability (*idem*: 15-17).

Projects that linked mitigation and livelihoods were most likely to achieve long-term **sustainability** (*idem*: 17). One example was plantation bio-engineering, where bamboo nurseries will also generate income through sales. Forming links between CDMCs and government also enhanced sustainability. For example, NGOs informed CDMCs that budgets from the central government were available in village development committees (VDCs). CDMCs could then request funds for disaster preparedness from VDCs (*ibidem*).

The projects had a wide-ranging **impact**, including: lives saved during flooding thanks to effective search and rescue (e.g. during the 2008 Koshi floods); changes in attitudes on deforestation and soil erosion; and better community cohesion thanks to CDMCs and collective decision-making (*idem*: 17-18, 24). Projects strengthened livelihoods, and improved governance in districts with no representative government (e.g. CDMCs lobbying local government for funds), and contributed to women's empowerment. One project also improved access to clean water and hygiene practices (*ibidem*).

### ***Local DRM in the Tarai region during the 2014 floods***

An independent review, produced by the Institute for Social and Environmental Transition (ISET), Practical Action, and Zurich Insurance Company, assessed how effective DRM had been in the record-breaking 2014 floods of the Karnali and Babai rivers in the Tarai region (MacClune et al. 2015). The review found that **early warning systems** were instrumental in saving lives and assets (e.g. livestock), despite complications and points of failure. Practical Action had collaborated since 2008 with local, regional and national stakeholders to implement these systems (*idem*: 4, 27).

The **local disaster response** was effective, and essential in ensuring a positive impact and responding to local needs (*idem*: 4). CDMCs were instrumental in targeting aid. They also helped organise and distribute relief, assisted security personnel from the districts with search and rescue, and conducted health campaigns to minimise the spread of diseases. However, political pressure complicated the response and the selection of beneficiaries, ultimately leaving the most vulnerable behind (*idem*: 4-5).

### ***Local DRM in Panchkhal (central region) and Dhankuta (eastern region)***

An action research established two 'risk and resilience committees' (RRCs), one in Panchkhal and the other in Dhankuta (Jones, Aryal & Collins 2013). The RRCs were embedded in municipal government. In Panchkhal, activities, though limited by funding, focused on strengthening livelihoods. In Dhankuta, the RRC obtained additional funding, developed strong links with institutions above and below it, and assessed local government's responsibilities against DRR goals (*idem*).

## Adapting DRM to urban areas

A qualitative learning review commissioned by the Nepalese and British Red Cross Societies gathered lessons from a **Red Cross programme** for urban preparedness to earthquakes that both societies had been conducting in Kathmandu since 2012 (Grünewald & Carpenter 2014). Lessons include (*idem*: vi-viii):

- **Do not simply transfer approaches from rural programmes.** Instead, understand the specific risks and opportunities of urban space, land, and the built environment, especially the “physical and social differences between and within urban areas” (vi).
- **Understand mobility and its practical implications** for DRM. For example, daily and seasonal mobility to, from and within the city affects people’s participation in assessments and preparedness, and the gender of first responders. Disasters raise complex issues of land rights.
- **Plan to deal with a sequence of crises** that happen through domino effects. In urban areas, an earthquake has a higher risk of triggering secondary crises such as fires or chemical contamination, as well as “social unrest” and mass displacement (viii). **Be agile and alert** to respond effectively to a range of unpredictable scenarios.
- **Invest time and resources in institutional analysis and coordination**, because Nepal’s urban disaster management “is crowded, complex and continually evolving” (vii). Knowing in advance where to seek guidance and to coordinate is critical. When developing this, address priority sectors and topics in turn. Responses will be complex, so be ready to coordinate, co-operate and prioritise with multiple and diverse national and international actors.
- **Ensure there is clear and skilled leadership for urban DRM.** Leaders must be trained and knowledgeable about their staff and the population. They must have clear lines of authority and communication, and adequate physical means to operate (this will preserve their credibility in a crisis). Ensure that local leadership can deliver the first phase of response: limited search and rescue, first aid, evacuation, and linkages to health structures that would still function.
- **Information and communication:** for preparedness, **raise the population’s awareness.** With plentiful information in cities, ensure that DRM messages are heard, understood and effective at changing behaviours. Reach groups with different education, gender, and demographics. Before and during disasters, make the best of technology (e.g. raising awareness, mapping), while acknowledging its limitations. In a disaster, technology must be fully mastered, or more traditional methods be used. During a disaster, **manage communications effectively** about needs, planning, first response and public information.
- **Prepare to respond in a degraded mode.** Use investments and training to have fall-back systems for communications, transportation, logistics, media, and skilled response participants.<sup>2</sup>

## Embedding DRR in schools

**ActionAid Nepal** implemented a project to advance DRR through several vulnerable schools in the districts of Banke, Makwanpur, Rasuwa and Kathmandu between 2006 and 2009 (Gautam 2010). Child-to-parent and child-to-child activities built capacities and produced analyses of contexts. The project empowered socially inclusive DMCs and children groups to lead, resulting in effective education, mobilisation and accountability. It also linked school initiatives and DMCs with local and national civil

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<sup>2</sup> Also see EMI (2010: 13-19) for the self-reported outcomes of a DRM programme with Kathmandu City.

society groups and policymakers. It was inclusive for children and persons with disabilities. An external qualitative review documented lessons, including the following (*idem*):

- **Mainstreaming education to DRR in school** curricula opened new avenues for DRR, with community-wide changes in knowledge, attitudes and behaviours. The dissemination of education to children and the wider community was essential to reducing risks at the local level. Child-to-child and child-to-parent learning were effective for this in schools and communities.
- **Building stakeholders' capacities** was fundamental to setting local priorities and implementing action plans. Local DMCs proved to be effective vehicles for reducing disaster risks, because they were socially inclusive, were transparent, and promoted local accountability. All this increased the effectiveness of DRR and the mobilisation of local resources for DRR.
- Analysing vulnerability with a **participatory approach** helped people claim their rights and act. Participatory video was a very effective tool. It was very useful for educating and empowering women and children on climate change. It promoted follow-up and tangible action at local and district levels. It made advocacy and campaigning easy for the poor, women and children.
- **Improving physical infrastructure** was essential in making communities safer. Retrofitting made schools safer. The training of masons benefited safe construction more widely.
- **Coordination and collaboration** between and among DRR projects minimised duplication and confusion among stakeholders. The implementation of tested approaches saved time, energy and resources, and reduced failures. Partnerships created policy synergies and joint learning.

The 25 April 2015 earthquake has been a test of the **impact of past interventions for school safety**. Paci-Green, Pandey and Friedman (2015) conducted a qualitative comparative study of 12 public schools across four districts affected by the earthquake - Bhaktapur, Kathmandu, Rasuwa and Sindhupalchowk. They compared schools with standard construction, schools that had received only technical interventions to make them earthquake-resistant, and schools that had benefited from technical interventions as well as substantial community engagement. Retrofitted buildings generally performed better. Education had had a positive impact: "Community engagement built trust in the projects" (*idem*: 4). With engagement, communities had better knowledge of risk and of earthquake-resistant construction. Some new housing even reflected this knowledge. In communities that had been engaged, some school staff had also become advocates for safer construction (*ibidem*).

## Empowering disadvantaged groups

### *Empowering women*

The external evaluation of DRR funded by ECHO found women's participation to have been strong across projects, sectors, and stages of the project cycle (Willitts-King, Morris-Iveson & Dhungana 2010: 20). Women were well represented in committees that designed projects, and in groups tasked with maintenance. Participatory learning committees, promoted by Oxfam, empowered women to both discuss projects and improve their literacy (*ibidem*). CDMCs were more likely to function in the long term when they had strong involvement from women, such as women chairpersons or secretaries (*idem*: 17).

### *Empowering children*

An external evaluation commissioned by Plan International and Plan Nepal assessed an 11-month child-centred project for DRR conducted by **Plan Nepal** and Human Development and Environment

Protection Forum, a local NGO, in three villages in Sunsari district (Gautam 2012: 5-7). The project combined capacity-building, mitigation and preparedness. The evaluation found the project to have been relevant, effective and efficient. Two factors were key to effectiveness: engagement with multiple stakeholders at community, village and district levels; and strong participation and transparency, which gave stakeholders trust. The project was found likely to be sustainable (*ibidem*).

The project was also deemed to have made a significant positive impact (Gautam 2012: 5-7). It increased awareness of DRR among government officials and communities, and improved the capacities and planning of government officials and children in DRM and children's rights. It established participatory DMCs, youth groups and children's clubs for DRR, all of which were inclusive for women and various minority groups. The mobilisation led to communities showing greater internal solidarity. The project also empowered participants to speak out, as they gained the confidence to express their needs and demands. Lastly, with some contributions from the communities, the project built two shelters and one resource centre, and established three youth cooperatives that offer credit (*ibidem*).

The external evaluation of DRR funded by **ECHO** found that several of these projects achieved meaningful participation by children (Willitts-King, Morris-Iveson & Dhungana 2010: 20). Projects with children's groups mobilised communities more successfully. Learning activities from children to adults effectively raised awareness, even where many parents could not get involved in other activities. Children were especially receptive to and active on messages about long-term environmental conservation (*ibidem*).

### ***Empowering the poorest and members of the lower castes***

The external evaluation on **ECHO** found that some projects successfully targeted and mobilised lower caste groups and their participation (Willitts-King, Morris-Iveson & Dhungana 2010: 20).

### **Drawing on enabling laws and norms**

A case study commissioned by the International Federation of Red Cross and Red Crescent societies (IFRC) examines Nepalese legislation on DRR, particularly at community level (IFRC 2011).<sup>3</sup> Nepal's policy framework for DRR is well developed, but its legal framework is incomplete. In particular, the many years of civil war have hampered the full implementation of its Local Self-Governance Act (IFRC 2011).

One good practice is the "**Mandatory Rules of Thumb**" (MRTs), a set of voluntary guidelines to assist owner-builders in constructing small buildings that are safer against earthquake and fire (IFRC 2011). In the absence of binding building codes for smaller homes, the National Society for Earthquake Technology-Nepal developed the MRTs, which the Department of Urban Development and Building Construction has disseminated. The MRTs recognise that most owner-builders have no access to engineering advice, especially in rural communities, and that local materials will be used (*idem*).

Another good practice has been to register **DRR committees as community-based organisations** (IFRC 2011). This improves committees' accountability and sustainability. It also gives them access to government assistance, and allows them to participate formally in local governments' DRR (*idem*).

A third good practice has been the **management of certain forest areas by community user groups**, under the Forest Act and the National Parks and Wildlife Conservation Act (IFRC 2011). User groups have

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<sup>3</sup> The full study is Picard (2011); IFRC (2011) is a summary of the study focused on the community level.

the right to “use timber, fruits and animals sustainably and to guard against illegal encroachment” (*idem*: 2). Conversely, they must carry out programmes to prevent floods, landslides and soil erosion (*ibidem*).

## 4. Failures and negative or contradictory factors

This paragraph gives an overview of failures documented in the literature, before sub-sections detail factors associated with negative or contradictory impact. Where subnational DRM has failed entirely or partially, many references identify various types of negative impact, including: lost lives or injuries, damaged livelihoods, a continuation or worsening of low preparedness of populations and local government, reinforced inequalities, increasing risks of tensions, and reduced long-term resilience, among others through weakened basic services. The efficiency of some projects, even effective ones, has also been affected by the costs, unreliability and low capacities of transportation to remote communities (Willitts-King, Morris-Iveson, & Dhungana 2010: 23-24).

### Inaction and problems in formal DRM policies, laws and implementation

#### *Gaps in laws and norms*

Preparedness and DRR are widely noted to be a relatively new inclusion to Nepal’s **policies, laws and regulations** on DRM, with important gaps for DRR at community level (IFRC 2011). Small buildings are not regulated. Planning for land use is not clearly regulated, and institutional responsibilities on this are divided. Frameworks for community-based early warning are lacking, although some *ad hoc* co-operations have been successful. No comprehensive or adequately resourced mechanism implements the National Building Codes. Rules for high-risk buildings are not implemented at community level (*idem*).

#### *Limited action, capacities and coordination at all levels of government*

The various **levels of government have taken limited action** to effectively reduce risk (MacClune et al. 2015: 17, 26, 28). Laws, policies and governmental programmes are not consistently enforced, implemented or monitored. It is difficult to ascertain that activities are carried out, and to determine which ones succeed. Officials’ capacities for DRM are also limited. For example, chief district officers are meant to coordinate response at district level. But they are appointed in Kathmandu and frequently transferred from place to place. They often lack local knowledge and institutional memory, and have poor local connections. They are often unable to advance risk awareness, preparedness and response (*ibidem*).

Nepal **lacks coordinated national and local resources and financing** for DRM (MacClune et al. 2015: 17, 26-27). Even where implementing actors coordinate well among each other and with the national government, this cannot make up for gaps in national DRM and in the connections between levels of government (Willitts-King, Morris-Iveson, & Dhungana 2010: 16). National funding to the local level has been limited and earmarked for relief, with insufficient support for preparedness. The national government has relied on international donors to fill funding gaps (MacClune et al. 2015: 26, 28).

At local levels too, coordination is often lacking, which results in confusion over roles and responsibilities, duplication, or contradictory initiatives. For example, district preparedness and response plans and local disaster risk management plans exist, but tend not to be implemented, leading to *ad hoc* action (MacClune et al. 2015: 17, 26-27). At district and local levels, decision-making power in an emergency can be unclear. In the 2014 Karnali and Babai floods, coordination in the response “was poor within and

across all levels and sectors” (*idem*: 28). Relationships between and within response organisations were weak, leading to low trust. This contributed to the breakdown of the cluster system and of communication and coordination, impeding the distribution of relief, and decreased efficiency (*idem*: 28).

**Decision-making is hierarchical**, with policies and actions directed from Kathmandu (MacClune et al. 2015: 26-28). Within organisations, hierarchies leave regional and district staff out of decisions and impede the exchange of information. Both local staff and community members are typically excluded from decision-making about DRM. Governments, NGOs and other agencies at national level may not fully know local conditions and capacities, which results in inadequate choices. The top-down approach also limits innovation. Districts officials often depend on their national superiors for solutions (*ibidem*).

The **exchange of information is slow or lacking**, both from the top down and from the bottom up (MacClune et al. 2015: 26-28). In the management of flood risks, there is little coordination between upstream and downstream, and right bank and left bank. Turnover among trained CDMC members, due to migration, complicates DRM and learning (*ibidem*).

The Nepalese government’s **dependency on other Nepalese and foreign actors’ assistance** has a mixed impact (MacClune et al. 2015: 17). For example, a variety of DRR initiatives, supported by international funding, have taken place in Bardiya and Kailali districts, such as increasing local awareness and capacities, setting up CDMCs, establishing early warning systems, diversifying livelihoods, and mainstreaming DRR into development. These activities have strongly reduced the impact of disasters. Nonetheless, as government has failed to provide the services needed to advance DRR, communities have been dependent on new systems they do not have the means to maintain (*ibidem*).

### **Deficiencies in community-based DRM**

As a critical examination of community management of natural resources in eastern Nepal shows: **“Community ownership is not a silver bullet”** (Vivekananda 2010: 14). Some local users in participatory community forestry make decisions based on short-term self-interest. For example, communities have not regulated and controlled the growing market for illicit timber. Different local groups can also have conflicting interests, such as forestry and water users. Local and national arrangements need to combine, and to draw on a deep understanding of social context and livelihoods (*idem*: 14-16).

The independent review of DRM in the 2014 floods found that the **early warning systems** performed less effectively than their potential, for several reasons (MacClune et al. 2015: 27). They depended on a single person to access the gauge and communicate water levels downstream. Some communication protocols failed (e.g. electrical power, use of radio). The new chief district officer lacked local knowledge and failed to act promptly on the flood alert. Some trained CDMC members were difficult to reach at short notice. People only had very short lead times, so they could not save their livestock or property.

The external evaluation of **ECHO** found that the effectiveness of small-scale interventions was uneven (Willitts-King, Morris-Iveson, & Dhungana 2010: 15-16). Bio-engineering – such as using bamboo on river banks – led to tangible benefits, linkages with livelihoods, and promises of change to deforestation. On the other hand, some plans were fragmented and based on communities’ demands rather than an adequate mapping of risks and technical knowledge (e.g. emphasis on search and rescue, but little on public health risks during floods). Information and education had not integrated disability (*ibidem*).

The **child-centred project** for DRR in Sunsari had some shortcomings in its training, with problems in timing, contents, sequencing, materials, and choice of trainers within the community (Gautam 2012: 6-7).

DRR institutions also lacked some responsibilities – and hence some accountability – as well as some training, and were not inclusive enough of all community groups (*ibidem*).

### ***Deficiencies in DRM for school safety***

The qualitative comparative study by Paci-Green, Pandey and Friedman (2015: 4) identified a number of shortcomings in the impact of programmes for school safety:

- **Education on DRR and resilience:** projects without community engagement led communities to misunderstand the projects. School staff’s advocacy for safer construction was limited where staff “did not share cultural and language ties with parents”. Across sites, the impact of the projects faded over time. Safer buildings lacked displays to educate new families about earthquake-resistant retrofitting or features in new constructions.
- **School disaster management:** in retrofitted schools that had received no community engagement, many students and staff suffered unnecessary injury or death because they ran *out* of their safe schools. In schools with load-bearing stone walls, neither evacuation nor procedures of ‘drop, cover, hold’ would have protected students. There, staff now distrust ‘drop, cover, hold’. With unsafe stone buildings, some children and adults incorrectly ran into the schools and were killed. Schools lacking non-structural mitigation lost computers and science supplies.
- **Facilities:** Buildings that were meant to be resistant but that were constructed without masons receiving adequate training or technical oversight performed poorly. Stone walls generally collapsed, regardless of features. Moderate shaking damaged unreinforced walls made of brick and stone infill, making affected buildings unusable and dangerous.

### **Lack of learning from other disasters and DRM**

Formal learning from disasters and DRM has been poor, and mistakes get repeated, for example in new structures and upgrades (MacClune et al. 2015: 26-29). The government’s lack of monitoring and evaluation makes it hard to generate lessons. Similarly, several groups’ assessments of the 2014 flood response have not been published. Further, available data are rarely applied beyond their one context. In addition, the exclusion of district and local staff from decision-making hampers institutional learning. There is local learning between communities, but it is not transferred to higher levels (*ibidem*).

### **Adverse implications of political economy**

#### ***Political constraints on decision-making***

The independent review of DRM in the 2014 floods found that the “**politicisation** of flood response further complicated coordination, particularly in Bardiya” (MacClune et al. 2015: 28). This played a major role in the breakdown of the cluster system and distribution of relief. The government banned the distribution of shelter to people it deemed landless, leaving the most vulnerable with insufficient or no relief (*ibidem*). Similarly, socio-political issues can make data difficult to obtain. For example, maps with flood scenarios have not been distributed because they might degrade land values (*idem*: 29).

When analysing the political economy of DRM, it is useful to use the **distinction between elite capture and elite control** made by Dasgupta and Beard (cited in Jones, Aryal & Collins 2013: 464). In the Panchkhal RRC, elites did capture resources, and the mere inclusion of women and members of

scheduled castes into the RRC could not counter this. However, in Dhankuta, elite control of the agenda did not necessarily lead to elite capture of resources (*ibidem*).

Gaps in the coverage of vulnerable districts are attributable to the **remoteness** of some areas, but also their lack of political clout (Willitts-King, Morris-Iveson, & Dhungana 2010: 16). Remoteness implies complicated and costly logistics and, typically, the absence of NGO partners on location (*idem*: 23-24).

### ***Inequalities and divisions***

Ingrained social and political divisions in community-based DRR can thwart progress (Jones, Aryal & Collins 2013: 463). Jones and Boyd (2011) discuss **several types of barriers** to climate change adaptation, based on a qualitative case study of two village district councils (VDCs), in Humla and Kailali (Western Nepal). Natural, financial or technological hindrances have been widely identified in the literature and do hamper adaptation. In addition, Jones and Boyd emphasise the importance of a series of cognitive, and normative and institutional barriers (see table below, from Jones and Boyd 2011: 1270).

<b>Form of social barrier</b>	<b>Examples common to both locales</b>	<b>Illustrative examples in Shreenagar VDC</b>	<b>Illustrative examples in Phulbari VDC</b>
Cognitive behaviour	<ul style="list-style-type: none"> <li>- Differences in perceptions of risk and self efficacy amongst men and women</li> <li>- Low self-efficacy and perception of inability to effectuate change amongst Dalit groups</li> </ul>	<ul style="list-style-type: none"> <li>- Traditional hostility towards outsiders and a reluctance to accept outside aid and assistance</li> <li>- Misperceptions and cultural stigma towards the Humli limit employment opportunities upon migration</li> </ul>	
Normative behaviour	<ul style="list-style-type: none"> <li>- Persistence with traditional forms of coping strategies in times of shock and stress</li> </ul>	<ul style="list-style-type: none"> <li>- Vocation determined by family and caste lineage</li> </ul>	<ul style="list-style-type: none"> <li>- Janajati forced to move from designated 'safe areas' during large flood events</li> </ul>
Institutional structure and governance	<ul style="list-style-type: none"> <li>- Dalit lack access to spaces of political power and representation at the community level</li> <li>- Individuals are unable to transcend caste groupings</li> </ul>	<ul style="list-style-type: none"> <li>- Dalit restricted in access and rights to natural resources</li> </ul>	<ul style="list-style-type: none"> <li>- Janajati historically unable to access land. Relocated adjacent to the river</li> <li>- Dalit lack equal access to financial loans and assistance from higher castes during times of need</li> </ul>

Complementary insights are offered in an academic study on DRR in the far-western Tarai, including the Kailali district. The study explored whether DRR interventions by international NGOs had reduced the vulnerability of households' livelihoods to flood risks (Stites, Sharma, Marshak & Dahal 2013: 67-70).

NGOs provided expertise for the construction of spurs or gabions, and any materials unavailable locally. They facilitated the creation of DMCs, and offered equipment such as lifejackets, boats and a siren. Communities were responsible for managing the programmes, doing the physical labour for construction, purchasing any additional materials, and ensuring the upkeep of the supplies (*idem*: 67-69). The in-depth mixed-method assessment showed that the DRR activities reduced households' vulnerability and losses (e.g. of houses, land, crops, livestock, or grain stores) (*idem*: 69).

However, participation in DRR activities was not uniform: while 100 percent of households participated in the DMC in some villages, fewer than 10 percent did in others (Stites, Sharma, Marshak & Dahal 2013: 69). Effectiveness very much depended on **how homogeneous the community was** regarding ethnic breakdown, distribution of wealth, distance to river, and impact from flooding. The more diverse a community was in one or several of these aspects, the lower the likelihood that it would take up the DRR activities, due to lower social control and lesser shared needs and benefits in DRR (*ibidem*).

In the face of these adverse factors, the study authors conclude that *participatory* DRR has only worked well in communities with sufficient social capital (Stites, Sharma, Marshak & Dahal 2013: 69, 93-95). Even so, participatory programming disproportionately disadvantaged poorer households. The required contributions in time, labour and resources strained these households' survival strategies. In turn, their lesser participation threatened their social capital in the community even further (*ibidem*). This echoes findings by Jones, Aryal and Collins (2013: 463) on how the lower levels of social capital in Panchkhal made efforts at DRR and resilience more challenging there.

In heterogeneous communities, DRR efforts were still needed, as poor, marginalised, small, and minority households there are the most vulnerable (Stites, Sharma, Marshak & Dahal 2013: 69, 93-95). But, where social capital was insufficient for community-level projects, NGOs could have usefully focused on livelihoods programming (e.g. agricultural inputs) and support for migration, to shore up household wealth. This is because the research showed a clear link between households' resilience and wealth – specifically, diversification of livelihoods alongside agriculture, access to markets and cash, savings, credit and insurance, and the wealth and connections outside the community to know about and obtain NGO and government support. Increasing household wealth would have the same impact on reducing risk and increasing resilience as DRR interventions (*ibidem*).

A mixed-methods study examined the **gender dimensions** of early warning systems for floods in the Hindu Kush that are implemented by the International Centre for Integrated Mountain Development (Shrestha et al. 2014). Despite positive attitudes, the integration of gender was typically confined to risk assessment, and to women's limited participation and influence in community groups and capacity-building. There were very few plans for making the tools, processes and messages gender-sensitive instead of gender-neutral, in part due to limited training. More broadly, information, institutions, and warning systems were not tailored to the needs of women, the elderly, children, people with disabilities, and other disadvantaged groups (*idem*).

In DRR funded by ECHO, NGOs had not incorporated issues of **HIV/AIDS** into their programming, despite growing infection rates (Willitts-King, Morris-Iveson & Dhungana 2010: 20).

### ***Technical framings and narrow silos disconnecting interlinked issues***

**DRM focuses too narrowly on risks from natural hazards:** households are vulnerable to numerous risks, and natural hazards simply exacerbate existing vulnerabilities (Stites, Sharma, Marshak & Dahal 2013: 95). The whole context, which combines poverty, disaster and post-conflict dynamics, is “more difficult than the sum of its very challenging parts” (*ibidem*). A qualitative study on resilience to climate change in three districts in eastern Nepal also emphasises the interconnectedness of vulnerabilities and capacities in relation to development, governance, security, justice, equity, economics, trade, and environment (Vivekananda 2010). Inappropriate interventions can do harm and lead to violence and insecurity (*idem*). In some remote areas, communities deemed hazards to be less important than pressing problems such as access to water (Willitts-King, Morris-Iveson, & Dhungana 2010: 15-16).

### **Factors with contradictory effects**

Most authors advocate greater alignment and linkages between community institutions and **local government** for DRR. However, Jones, Aryal and Collins (2013:464) caution against prescribing processes and structures for local DRM governance, because the disaster risks and the preferred institutions for DRR may differ from one community to another. One major factor explaining the better outcomes of the

RRCs in Dhankuta, compared to Panchkhal, was indeed its institutionalisation and embedding in local government. Nonetheless, support for local government remained weaker in the area of the less successful RRC (*ibidem*). In another study, user groups in community forestry were reluctant to hand over control to local government, which was considered to be unaccountable, “lacking in skills and resources, and influenced by political parties” (Bhattacharya & Basnyat, cited in Jones, Aryal & Collins 2013: 446; see also Jones, Aryal & Collins 2013).

Some **DRR activities have unintended negative effects**. The independent review of DRM in the 2014 floods found that physical systems for flood protection, while reducing short-term risk, have increased long-term risk, because they are not integrated into wider management of risk and into consultation of local stakeholders (MacClune et al. 2015: 5, 27). Plans have given little thought to the maintenance, control, and life-cycle management of embankments. They have ignored sedimentation rates, modes for safe failure, the increasing intensity in rainfall, or the development of roads and human settlements. These dynamics, combined with poor regulations on land use, exacerbate long-term risk (*idem*: 5, 27).

A qualitative field survey of people living downstream from the Tsho Rolpa glacial lake found their risk perceptions to be low, despite the probability of a lake outburst (Dahal & Hagelman 2011). This was chiefly due to “the cry-wolf effect” of an evacuation in 1997 that followed the inaccurate prediction of an outburst. Further, previous remediation structures have created a false sense of security. Partial mitigation has thus lessened perceptions of risk and increased communities’ vulnerability (*idem*).

In the child-centred project in Sunsari district, people initially resisted the idea of DRR and took some convincing (Gautam 2012: 6). They were only accustomed to DRM in the form of relief after disaster or structural mitigation like embankments (*ibidem*).

There are diverging views in the literature about the effects of **internal and international migration** (mostly of Nepalese men) on DRM. Some authors emphasise that migration from isolated or impoverished locations is a beneficial way for households to diversify their income or gain new knowledge about different DRR practices (see e.g. Stites, Sharma, Marshak & Dahal 2013). Other authors emphasise the negative side effects of migration, such as losses in community learning (e.g. in CDMCs), lack of sustainability for community-based DRR, or additional burden on remaining women’s paid and unpaid work (see e.g. Willitts-King, Morris-Iveson, & Dhungana 2010: 17).

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## Key websites

- Institute for Social and Environmental Transition - Nepal (ISET-Nepal) – Publications: <http://isetnepal.org.np/research-products>
- International Centre for Integrated Mountain Development (ICIMOD) – Information Resources: <http://lib.icimod.org/?page=info>
- International Institute for Environment and Development (IIED) – Publications – Nepal: <http://pubs.iied.org/search.php?k=nepal&t=&a=&w=&s=&c=&g=Nepal&l=eng&tdB=1&tdC=1&tdA=1&tdJ=1&tdF=1&d=c&b=d&r=a&z=Search>
- Nepal Red Cross Society - Publications: <http://www.nrccs.org/resources/all>
- Practical Action - Nepal – Learning: [http://practicalaction.org/disaster-risk-reduction-nepal#Brain\\_Widgets\\_Group\\_2\\_Group\\_3](http://practicalaction.org/disaster-risk-reduction-nepal#Brain_Widgets_Group_2_Group_3)
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- ReliefWeb – Updates – Nepal – Disaster management: [http://reliefweb.int/updates?primary\\_country=168&theme=4591#content](http://reliefweb.int/updates?primary_country=168&theme=4591#content)
- UN – Nepal Information Platform - Nepal Risk Reduction Consortium: <http://un.org.np/coordinationmechanism/nrrc>
- UNISDR (UN Office for Disaster Risk Reduction) – Publications – Asia-Pacific: <http://www.unisdr.org/asiapacific/publications>

## Expert contributors

Alex Densmore, Durham University  
Kedar Babu Dhungana, UNDP  
Dhruba Gautam, National Disaster Risk-reduction Centre Nepal  
Samantha Jones, Northumbria University  
Dave Milledge, Durham University  
Katie Oven, Durham University  
Bimal Regmi, consultant  
Hanna Ruszczuk, Durham University  
Jeevan Sharma, University of Edinburgh  
Mandira Singh Shrestha, ICIMOD  
Cassandra Star, Flinders University

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