Disaster Risk Reduction for Community Resilience:

A synthesis of lessons from more than a decade of Disaster Risk Reduction Programming

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Acknowledgements

This publication is a synthesis of lessons from than a decade of Concern Worldwide's disaster risk reduction programming looking at the area of community resilience. The publication is part of a series documenting Concern's approach to disaster risk reduction. The series consists of five context papers focusing on DRR approaches in mountainous, dryland, coastal, urban, and riverine contexts.

The success of our programmes is largely due to the invaluable insights and commitment of thousands of programme participants, community leaders, local government officials and other community members. It is our great honour and privilege to partner with local organisations, communities and ministries. We would also like to acknowledge Concern's dedicated field staff, who have devoted countless hours ensuring that our programmes are constantly striving to reach the most vulnerable with the highest quality of programming possible. Special thanks are due to devoted teams leaders, programme managers, advisers and country directors that have championed Concern's work on disaster risk reduction.

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Cover Image

A slope in Dessie Zuria, Amhara, Ethiopia, which has been terraced, planted with leguminous and fodder crops, and open grazing prohibited. Part of a broader watershed management initiative within a community resilience building programme, the work on this slope has reduced surface run-off that leads to floods, soil erosion and landslide risk. The water holding capacity of the soil is improved to the extent that there is a second spring at the base of this hill, for the first time in living memory. Photo by Dom Hunt, 2013.

Contents

Acronyms and Abbreviations

CA	Contextual Analysis
CRIS	Community Resilience Indexing System
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
EWEA	Early Warning Early Action
EWS	Early Warning System
HCUEP	How Concern Understands Extreme Poverty
HFA	Hyogo Framework for Action
NARRI	National Alliance for Risk Reduction Initiatives
NRM	Natural Resource Management
PEER	Preparedness in Emergency Response
RAG	Risk Analysis Guidelines
UNISDR	United Nations International Strategy for Disaster Reduction

Executive Summary

Disaster Risk Reduction (DRR) is the foundation of community resilience.

The fundamental starting point in designing a programme for DRR, or to build community resilience, is a robust, multi-hazard risk analysis. It is important to analyse all of the hazards that might impact the extreme poor. Concern's broad conceptualisation of hazards as equally focusing on human derived and natural hazards is important in this regard, and existing risk analysis tools function well in all contexts.

The capacity of multiple actors needs to be strengthened if the underlying causes of risk and vulnerability are to be addressed. Coordination with these and other stakeholders is important. Strategic partnerships with other organisations with different skills add value and bring in different capacities. Coordinated approaches also require integrating short- and long-term interventions and to work in multiple sectors. Engaging with the community, and linking the community to all stakeholders, including government, is a crucial step, although it takes time.

Generally, the higher the level from which a hazard originates, the more difficult it is for Concern to reduce its scale, intensity, or frequency. Neither Concern nor any other organisation can prevent hazards from occurring that are purely natural in origin. Instead, the focus must be on reducing their impacts.

Natural resource management (NRM), often combined with some engineered elements like check-dams and weirs, shows great promise in addressing drought, floods, and landslide hazards. It is important to allow plants to establish themselves by deliberately planting them and excluding livestock from grazing them until they are well established. Conservation of existing natural vegetation can also be an effective strategy for risk reduction. Engineered structures designed to prevent hazards or limit the scale of their impact can also often work to reduce hazards, including high intensity hazards. Engineered preventative or scale limiting solutions are expensive and should only be used when hazard exposure is high enough to warrant the expense, and when they cannot be sufficiently reduced with NRM.

While it is not always possible to reduce hazard scale, intensity, or frequency, it is often possible to reduce the vulnerability of people to these hazards. Key to the reduction of vulnerability is understanding and addressing its causes, which are usually socially constructed. Poverty is a leading cause of vulnerability, and countering this by assisting the extreme poor to accrue assets is critical for reducing risk. Similarly, improving access to government services is important for reducing vulnerability. As such, many interventions aimed at reducing vulnerability fall into the categories of poverty reduction and addressing inequality.

Inequality is a causal factor of vulnerability. Most communities have groups of marginalised people within them. Programmes must be designed based on a robust analysis of power dynamics and inequalities as part of the analysis of the causes of vulnerability, must work specifically with the most vulnerable sections of society, and must address the underlying reasons for specific vulnerability. This means moving away from a 'one size fits all' programme towards an approach that takes into consideration the vulnerability profiles of marginalised groups.

Coping and recovering capacity are the capacities to 'live through' a disaster, and then return back to the pre-disaster situation or, hopefully, a better one. Safety nets, contingencies, and social protection may act as mechanisms to stop people falling into crisis without resorting to harmful behaviour or negative coping strategies. Vulnerable people should be linked to national social protection mechanisms where they exist, but safety nets can also be community based such as grain and fodder banks or saving circles.

Coping capacity can be significantly improved if vulnerable people can anticipate an event which allows them to take appropriate action such as seeking shelter, and safeguarding their productive assets.

There will always be hazards whose impacts overwhelm community resources, requiring an emergency response. Early Warning Systems (EWS) are extremely important and form the cornerstone for early warning early action (EWEA). Early warning systems should be linked to wherever possible, allowing for the anticipation of hazards, and allowing for emergency responses to happen, if possible, before a crisis occurs (the principle of EWEA). An internal organisational preparedness process which ensures links to EWS are made is essential for being able to respond in a timely and effective manner.

Strengthening institutions is a major component of Concern's approach to DRR and community resilience. This involves directly and indirectly providing institutional bodies with greater economic, physical, political, or social resources to implement DRR. Community committees must be recognised by meso and macro level institutions, and the degree of 'buy-in' from the wider community will influence how well a community committee will function. In some cases, it is better to use established community governance institutions for DRR, rather than creating new DRR-only institutions, although government policies should be followed if they exist.

Ensuring that DRR received adequate support from government, and a DRR institutional structure is in place and functioning, often requires high degrees of advocacy at national level, and consortium approaches can be beneficial in this regard. A consortium can be a platform for a unified voice, messages, and sets of practices, and can improve the chance that approaches get adopted by governments at either local or national levels.

Developing an exit strategy from the outset is a way of ensuring that programmes focus on supporting institutions to become fit for purpose in taking on the challenge of resilience building. This is a critical component of sustainability. Fostering a culture of innovation and learning is equally critical. The social, political, economic and environmental contexts change, and institutions and the people that they represent need to keep up with these changes, address the unexpected, and learn from experiences. This is especially important when considering the impacts of climate change and uncertainty regarding the future.

Poor and vulnerable communities face numerous, often cyclical shocks and stresses. Concern has found that DRR is a cornerstone of community resilience building and goes far to help communities cope with these shocks and stresses, adapting to changes and transforming the risk context; making it a critical component of sustainable alleviation of extreme poverty.

1.0 Concern's understanding of DRR and Community Resilience

Concern Worldwide is an international humanitarian organisation focusing on the eradication of extreme poverty. Working in more than 25 countries, it responds to emergencies and works to address the underlying causes of extreme poverty through long term development programming.

Extreme poverty is understood by Concern to be the lack of or poor returns on assets, and is caused and maintained by inequality and risk and vulnerability. Mechanisms designed to address risk and vulnerability include disaster risk reduction (DRR) and the building of community resilience.

Since DRR is a means of reducing the impact of shocks and stresses, and resilient communities are those that are able to prevent, withstand or bounce back better from shocks, community resilience can be considered an *outcome* of Typical DRR activities, such as constructing an embankment to reduce the probability of flooding, or establishing a flood early warning system to give communities time to escape from floods if they occur, can help build community resilience.

Risk analysis underpins DRR and leads to risk informed programming including:

- **Mitigation** of the impact of hazards, either by reducing their scale, intensity or frequency, or by reducing the vulnerability of the exposed population.
- **Preparedness** for when disaster events occur, by improving communities' ability to anticipate, respond to, cope with and recover from disasters.
- **Advocacy** to influence the wider context and underlying risk factors.

Concern takes an explicit local level focus that helps reduce risk for the poorest individuals, households, and communities, ensuring their involvement and participation.

Concern takes a deliberately wide view of hazards recognising the complex interaction between human derived and natural hazards; including the impact of conflict and of an absent or poorly regulated policy environment.

For Concern, Community Resilience programming implies:

- **DRR, climate change adaptation, social protection, and linking relief, rehabilitation and development**.
- **A systems approach**; complex interactions between institutions, line ministries and others make it important that in spite of the community focus, actions to link with the meso and macro levels are included. The building of community resilience is everybody's business – all sectors and institutions and implicated and needed. It is important that each actor within a system (like Concern) is aware of, and works with other actors as part of a 'resilience building package' that is not limited to one area or sector. This implies intervening in both the short and long-term, using stand-alone and mainstreaming approaches.
- **An approach that can provide rapid or even early emergency responses,** and then switch back to longer-term development programming as soon as possible afterwards.

- **An adaptive and transformative focus**. For Concern, resilience is not just about communities being able to absorb shocks, only to have them happen again (absorptive capacity), but also entails the ability to adapt to a changing context and learn from experience (adaptive capacity). In some cases it may be necessary to change the system if it proves to be untenable for dignified human survival (transformative capacity). This implies that Concern must also endeavour to reduce the scale, intensity or frequency of hazards themselves, as well as the systemic causes of risk.

Concern believes that **holistic analysis** is an essential pre-requisite for **all programme interventions** – both development and emergency responses, but can be challenging. It requires trying to escape the silo thinking of sectoral interventions and understanding how, for example, health and livelihoods relate to each other, how hazards interact with them, and how the local context and national contexts shape each other. This requires interdisciplinary expertise and the ability to think systematically and develop activities in ways that are complementary to each other.

Concern has developed the following **principles** to guide how **community resilience** can be strengthened:

- **Systematically undertake risk analysis**, including analysis of future uncertainty and extreme conditions.
- **Ensure programming is coordinated** with other actors for delivery of the whole 'resilience building package'.
- **Reduce the scale, intensity, frequency of shocks and stresses** – wherever possible.
- **Reduce vulnerability and its causes**, including through building assets and diversifying livelihoods.
- **Address drivers of inequality**.
- **Build coping and recovering capacity** - including enhancing access to safety nets, contingencies and social protection.
- **Build and enhance response capacity** for effective and timely emergency responses when needed.
- **Build institutions** for efficient and equitable governance and influencing of the wider context.
- **Ensure sustainability** by developing a culture of innovation and learning and designing your exit strategy from the outset.

This document uses the nine principles as the structure for examining how DRR contributes to the building of community resilience, and shows that DRR is the foundation of community resilience building.

2.0 DRR in the Nine Principles for building Community Resilience

2.1. Systematically undertake risk analysis, including analysis of future uncertainty and extreme conditions

Risk analysis is "a methodology to determine the nature and extent of risk by analysing the potential of hazards and evaluating the existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend"[1]. The fundamental starting point in designing a programme to build community resilience is a robust, multi-hazard risk analysis.

Concern uses a variety of approaches and tools for risk analysis. They differ in terms of their coverage (single or multiple hazards) and whether the information sought is from the community or external. As indicated in Figure 2, each of these approaches has its own strengths and weaknesses.

Contextual Analysis (CA) and Community Risk Analysis are the two principal tools employed. Concern is also developing the Community Resilience Indexing System (CRIS) for measuring resilience.

CA is based on the core organisational document *How Concern Understands Extreme Poverty* (HCUEP)[2], and was developed to obtain a holistic understanding of the particular contexts within which the poorest people live so as to inform programme options and choices. CA tends towards the identification of 'broad sweep' factors that give rise to risk and vulnerability.

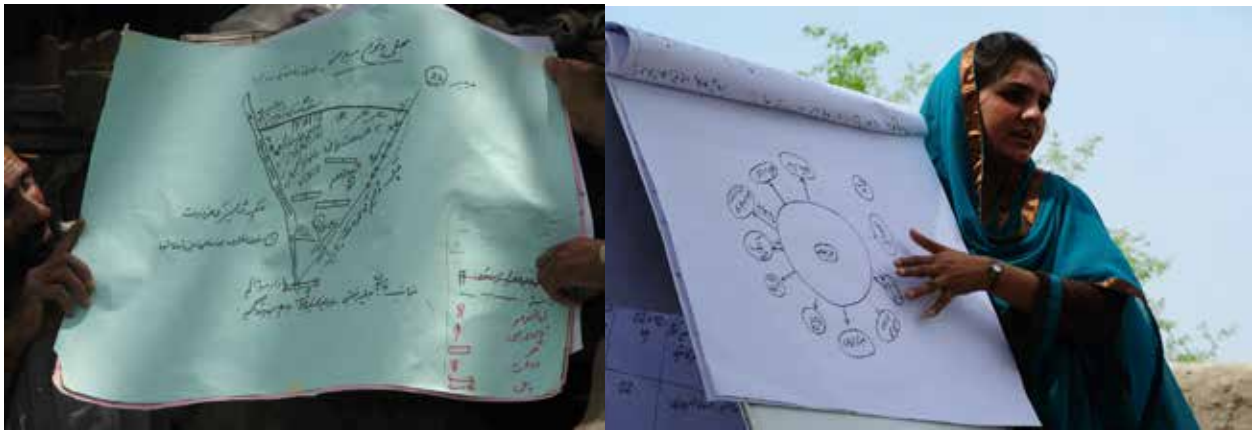
Strengths and Weaknesses of Community and External Information Sources

		Coverage	
		Single hazard	**Multi-hazard**
Data used	**Community based**	**Strengths**: provides a detailed assessment of selected hazards from a community perspective. Might motivate communities to change. **Weaknesses**: does not cover all hazards, leading to gaps in understanding of causality or linkages between hazards. **Utility**: a means of deepening the understanding of a certain hazard, especially around vulnerabilities and capacities. Advocacy/change within communities. **Example**: Concern's conflict analysis in Port au Prince.	**Strengths**: provides an overall 'big picture' assessment of the risks from a community perspective. Forces prioritisation of which hazards to address. Might motivate communities to change. **Weaknesses**: can be time consuming so often provides only a cursory view of hazards not considered immediate priorities. **Utility**: overall picture can help identify hazards for additional analysis. Advocacy/ change within communities. **Example**: Concern's risk analysis guidelines.
	External	**Strengths**: provides a detailed assessment of a hazard using an external, often scientific, perspective. Can shed new light on the hazard context. Can be more influential for some people than community perspectives are. **Weaknesses**: does not build agency of the community. Data requirements can be high. Only covers one hazard. Often weak in understanding community vulnerability and capacity. **Utility**: a means of deepening understanding of the dynamics of a certain hazard. **Example**: earthquake fault maps.	**Strengths**: provides an overall assessment of a hazard using an external, often scientific, perspective. Expert opinion on which hazards pose the greater risk. **Weaknesses**: does not build agency of the community. Data requirements can be high and do not often transfer to community level. Often weak in understanding vulnerability and capacity. **Utility**: at international level, can be used for advocacy. At community level, can be used to guide community risk analysis. **Example**: INFORM (http://inform.jrc.ec.europa.eu)

Figure 2: Typology of risk assessment approaches (Source: authors)

Community Risk Analysis describes the set of techniques that utilise community-level knowledge and can identify and understand hazards, vulnerabilities, and capacities; assess seasonality, trends, and frequencies; and gain a better understanding of future changes, unpredictability, and the wider context.

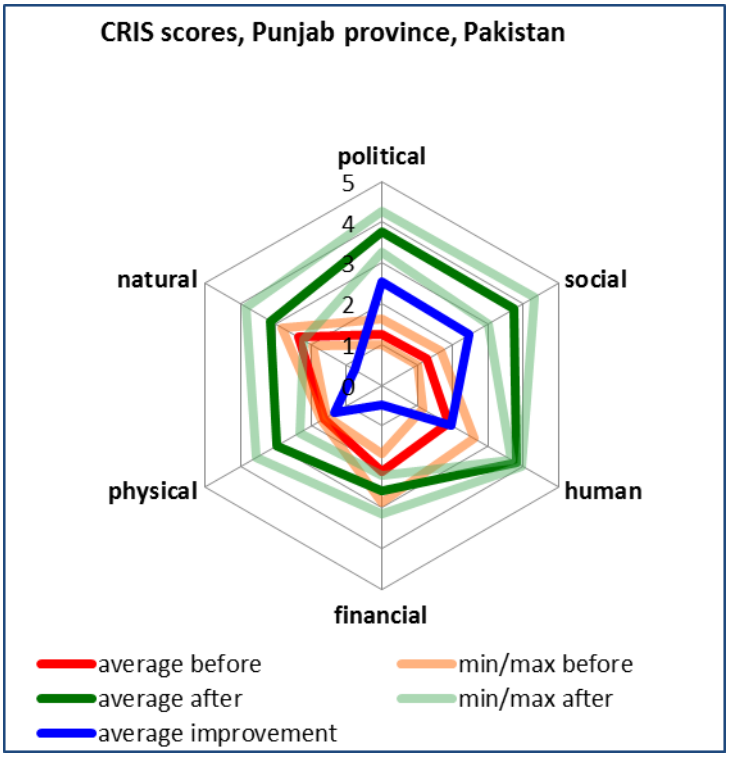
Analysing vulnerability[3] identifies who is most impacted by the result of a hazard event and why. This identifies who become the primary beneficiaries in subsequent DRR or community resilience building programmes. Specific tools include participatory methodologies such as interviews, focus group discussions, timelines and hazard ranking. It can produce very detailed information for that community and capture risk at the level of the individual household and its associated assets.



Hazard mapping (left) and institutional assessments (right) are two community risk analysis tools Concern uses in Pakistan. The photograph on the left shows a village hazard map created in Kashmir, in 2007 (taken by Peter Crichton). The photograph on the right shows Xille Rubab Gillani, a disaster risk reduction facilitator working for Concern's partner organisation Layyah in Lodhran, running through a Venn diagram of relevant institutions for DRR (taken by Syed Sulaiman, 2013). Both diagrams were created using participatory techniques involving all members of the community.

The Community Resilience Indexing System (CRIS) is a set of indicators which, when scored and aggregated, quantifies the level of resilience within a community. CRIS covers a range of issues and utilises 53 indicators grouped according to a set of characteristics of resilience at the community and national levels. It uses the six livelihoods assets or capitals (political, social, human, physical, financial and natural) as a framework.

The CRIS is aimed at being used as a baseline-endline comparison tool, and a method for identifying the broad next steps in building resilience that can be regarded as a "resilience road map". CRIS offers a means of comparing resilience levels between communities, which can help in deciding where to intervene. Standardisation also ensures that some components are not overlooked in assessments due to individual or organisational bias.



CRIS was tested in a workshop in Pakistan involving 14 senior Concern staff with knowledge of the programme context. Each participant reviewed indicators within one or two asset classes, giving around 15-20 indicators in total, and estimated scores for the Punjab Province, an area in which Concern is implementing community resilience programmes.

The results of the test, its accuracy, clarity, and utility of individual indicators, and of the CRIS were discussed. Staff found the scores to be a generally accurate representation of resilience for the area and of Concern's influence in building resilience. They showed that Concern positively affected community resilience across all asset classes, with average scores of 1.75 before and 3.34 after, with an average improvement of 1.59, and that the organisation was particularly effective in building social, political, and human assets.

Figure 3: Community Resilience Characteristic Scores

Urban areas pose a challenge in the conceptualisation of community – slum areas, for example, are heterogeneous areas with multiple ethnic groups, beliefs and places of origin. There is not necessarily a feeling of belonging or cohesion, and 'community' can sometimes be found in interest groups including religious, youth and livelihoods groups. Notwithstanding this issue, once a community is adequately defined, existing community risk analysis methods can be applied. Given the complexity of institutions, actors and political forces, a strong power and institutional analysis is extremely important for urban risk analysis.

Including uncertainty within the risk analysis process is important because risks are complex and can change. Wider context processes and stresses are often difficult to predict, like climate, policy, economic or demographic change, on hazards, livelihoods and the community context. While there have been certain methodological improvements in predicting many of the impacts of these processes (such as climate change) uncertainty still exists. These predictions and uncertainties must be incorporated into risk analysis to ensure that risk informed plans are 'future proofed', and that community resilience building is good enough to deal with extreme conditions.

Addressing uncertainty involves: 1) acknowledging when and where uncertainty might be present; 2) taking the best predictions of change drivers into account, using them to improve understanding of the risk context; 3) designing interventions that are beneficial regardless of uncertainties; 4) designing flexible interventions that can be modified in later years if needed; 5) ensuring that institutions and people are able to learn and adapt to unpredictable and changing conditions; and 6) regularly re-analysing risk to understand changing conditions.

Pastoralists under enormous skies, Marsabit, Kenya. Livestock are the cornerstone of dryland economies, being well suited to the dry and changeable conditions in arid areas – as long as there is mobility, so that animals can find water and pasture. Livestock are also useful as a saving plan, as they can be sold when times are hard. Photo by Aaron Clark-Ginsberg, 2013.

Conclusions and lessons to be learned from risk analysis

- Risk analysis is the fundamental starting point of any programme, including community resilience building programmes.
- It is important to analyse all of the hazards that might impact on the extreme poor. Concern's broad conceptualisation of hazards as equally focusing on human derived and natural hazards is important in this regard.
- Concern's risk analysis methodology includes contextual analysis, community risk analysis and the Community Resilience Indexing System (CRIS). Each has its own purpose.
- Contextual analysis tends to be broad-sweep only, and often misses deeper issues like the influence of change drivers such as demographic or climate change.
- Community risk analysis should be done systematically for every programme, every community and every intervention; and should be repeated regularly to understand changes to the risk context.
- Uncertainty is an important feature of risk analysis but is rarely adequately accounted for.
- Community risk analysis allows the community to prioritise certain hazards according to their criteria, and allows specific groups to prioritise their needs, but the needs of marginalised people (such as those of women, children, youth, those with disabilities, etc.) can easily be 'dropped' from the process if the facilitators are not careful to ensure their inclusion.
- Urban areas are suitable for already-existing risk analysis approaches, but require a greater focus on power dynamics and an urban specific understanding of community.
- Measuring resilience through proxy indicators, as CRIS does, is useful for measurement but is limited as an analytical tool.
- Analysing vulnerabilities and capacities using the six livelihoods asset classes is useful for driving a holistic risk analysis.
- Plans that are derived from risk analysis need to be shared and utilised by meso level government administration and by communities and Concern.

2.2. Ensure programming is coordinated with others

Building community resilience is too big a challenge for any one agency to tackle on its own. Multiple actors need to work together if the underlying causes of risk and vulnerability are to be addressed. Concern is only one piece in this larger resilience-building puzzle. Coordination helps to identify weaknesses and the 'right' stakeholder to address these issues, avoids duplication, and helps share lessons and successes across the system.

Concern does not have all of the skills required to address all risks, but partners with other organisations with complementary skills. To address high rates of violence and gang related conflict and criminality in the slums of Port au Prince, Haiti Concern partnered with the Glencree Centre for Peace and Reconciliation, an Irish organisation that specialises in peacebuilding. As a continuation of this work, Concern is today brokering multiple organisations, such as an architect firm and other NGOs, to participate in the redevelopment of depressed inner city slums of Port au Prince, none of which could have been possible without having engaged in a multi-stakeholder consultative process from the outset.

Work in coastal areas also shows the importance of coordination. The Sunderban mangrove forest in India and Bangladesh is an important source of biodiversity, natural economic resources, and protection against erosion and cyclones. Preserving the Sunderbans has required many stakeholders at multiple levels, including internationally, to engage in dialogue and decision making for risk reduction and conservation. It also required a multitude of complementary interventions, including natural resource management, structural measures, the construction of evacuation shelters, preparedness measures and livelihoods support.

The integration of the community in multi-stakeholder decision-making is essential, and is unlikely to happen without significant support. In Kenya, Concern uses the Community Conversations methodology to enhance community decision-making, and supports the community to share decisions and points of view with government institutions. It takes time to build up trust and dialogue, but Community Conversations is an effective method of encouraging participatory development.

In Bangladesh, Concern has entered into a consortium, the National Alliance for Risk Reduction Initiatives (NARRI), which increases each individual agency's influence and voice at the national level, while harmonising approaches at the local level. NARRI has proved to be an influential body, working closely with government to develop manuals on different aspects of DRR, training courses and writing policy. In 2013 NARRI won the Sasakawa award for 'for demonstrating the scale of impact which can be achieved through working in collaboration'[4].

Lastly, the private sector has an enormous influence on the lives and livelihoods of the extreme poor. Apart from some work in Port au Prince engaging with traders and shopkeepers on peacebuilding initiatives, Concern's track record in engaging with the private sector is limited and more consideration is needed as to how such interactions might be developed.

Conclusions and lessons to be learned from coordinating with others

- The scope of activities needed for effective community resilience building, and very often DRR, is too big for any one agency to address.
- Partnership with other organisations with complementary skills adds value and brings in different capacities.
- Much of DRR and community resilience programming benefit from integrated interventions, including engagement with multiple institutions, as illustrated by Concern's DRR work in coastal, dryland and urban contexts.
- Coordination ensures that gaps in resilience building are addressed, a better sharing of lessons and helps avoid duplication.
- Establishing thresholds on various indicators used for surveillance, and for determining when a response should be carried out, is a political process that requires all stakeholders to engage.
- Coordinated approaches also require the integration of short- and long-term interventions, as well as work in multiple sectors.
- Engaging with the community, and linking the community to all stakeholders, including government, is a crucial step, but it takes time and this must be factored in to the programme design and development stages.
- Consortia and unified approaches help initiatives to go to scale, and have the potential to magnify advocacy influence.
- Ways need to be found to more effectively involve the private sector in community resilience building.

2.3. Reduce the scale, intensity, frequency of shocks and stresses

Reducing the impacts of shocks and stresses can be achieved in two distinct ways – reducing the shocks and stresses themselves, or reducing vulnerability related to shocks and stresses. Some hazards, such as flash floods, erosion or local level conflict, are amenable to being significantly reduced in terms of their:

- **scale** - how big they are
- **intensity** - how strong they are
- **frequency** - how often they occur

Others, such as earthquakes, cannot be directly influenced although it is possible to reduce their impacts through addressing vulnerability. In some cases, hazards can be prevented completely - cholera can be prevented with proper sanitation, and the scale and frequency of conflict can be reduced through peacebuilding.

Two main factors influence whether Concern can reduce the scale, intensity, or frequency of shocks and stresses:

- The **level** at which a hazard is created - e.g. local, national or international
- The **nature** of the hazard – i.e. whether it is 'natural' or 'human' in origin or, as is commonly the case, a mix of both.

Generally, the higher the level of hazard creation, the more difficult it is for Concern to influence it. For example, Concern can use conflict sensitive and peacebuilding approaches to prevent resource conflict between two villages or to reduce the incidence of criminality, but it does not have the capacity to resolve national or international level conflicts.

Neither Concern nor any other organisation can prevent hazards from occurring that are purely natural in origin. Instead, the focus must be on reducing the impact of these hazards when they do occur. Droughts in the Sahel will always occur, due simply to natural climate variability. However, few hazards are purely natural, and most hazards classified as 'natural' have, or are compounded by, factors that have social or human origins. Deforestation and climate change caused by humans, can increase the prevalence, severity and impact of drought and floods, for example.

Concern uses the following interventions to address the scale, intensity and frequency of the following shocks and stresses:

		Hazard					
		Drought	Flood	Disease	Landslide	Criminality and resource conflict	Technological hazards
Intervention type	Ecosystem approaches	X	X	X	X	X	
	Peacebuilding					X	
	Health interventions			X			
	Agriculture	X	X	X	X		
	Engineering	X	X		X		X

Figure 4: interventions to reduce hazards

Earthquakes, tsunami and volcanic eruptions are the only hazards that Concern cannot directly influence in any way. This is because both are completely geological in origin. For hazards that are of greater scale or magnitude (such as widespread drought, for example) Concern only would have limited influence, although this can be magnified through collective action and advocacy.

Natural resource management (NRM) such as reforestation, slope stabilisation, controlling grazing, and the sustainable collection of firewood, often combined with some engineered elements like check-dams and weirs, helps address drought, floods, and landslide hazards by reducing water run-off and improving soil stability. Concern is using this approach in Ethiopia, Niger and Afghanistan.

Conservation of existing natural vegetation can be an effective strategy for risk reduction. Conservation agriculture[5], with no tilling and less soil disturbance, while maintaining vegetation cover and utilising mulch layers, can significantly reduce soil erosion and depletion of soil fertility. It also conserves soil moisture, which in turn acts as a water store, delaying the onset of the impacts of drought.

Engineered structures designed to prevent hazards (such as using terraces to prevent erosion) or limit their scale (such as using embankments to channel floods) can often work to reduce hazards, including high intensity hazards. As a guide, Concern assesses structures according to their dynamic loads and the magnitude of impacts should the structure fail. These guidelines are part of Concern's Standard Operating Procedures for engineering. Structures in areas with a high dynamic load and high risk status are designed to higher specifications.

Two examples of addressing urban hazards directly show how innovative solutions are sometimes required to address risk. In slums in Port au Prince and Nairobi, waste disposal is hugely problematic, leading to a range of diseases and contributing to flooding. In both cases, Concern has assisted in making waste collection and recycling a profitable business. In Port au Prince, gangs have been assisted to collect waste – a service for which they charge a fee. This has allowed Concern to negotiate with the gangs to relinquish control over water points, making water more available to the wider population. In Nairobi, waste products like scrap metal and wood products are recycled for profit. In both cases, a more traditional approach of community engagement was undertaken to clean up these urban communities through voluntary labour, but in Nairobi this took an enormous amount of time, and failed in Port au Prince. Urban areas are fundamentally linked to markets and market based solutions could have great promise.

Conclusions and lessons to be learned from reducing the scale, intensity or frequency of hazards

- Many hazards can be directly influenced, but less so if they are of greater scale or magnitude.
- Hazards that are purely natural in origin cannot be prevented.
- Natural resource management can reduce risks associated with drought, flood, erosion, and landslide, and concurrently improve livelihoods.
- Conservation agriculture can reduce the scale and intensity of soil erosion and fertility depletion.
- Natural resource management often works better when combined with engineering interventions, but most important is to allow plants to establish themselves by deliberately planting them and excluding livestock from grazing them until the plants are well established.
- Engineered preventative or scale limiting solutions are expensive and should only be used when hazard exposure is high enough to warrant the expense, and when they cannot be sufficiently reduced with NRM.
- Unless designed to withstand peak hazard dynamic forces, engineered structures can fail; a substantial up-front investment in engineered structures saves money in the long term.
- While in rural contexts communities, voluntary work managed by community governance structures can work well, urban efforts at preventing disasters may need to be more market based.

2.4. Reduce vulnerability and the causes of vulnerability, including through building assets and diverse livelihoods

Hazard events become disasters because of vulnerability. While it is not always possible to reduce the scale, intensity, or frequency of hazards, it is often possible to reduce vulnerability and its causes, and so reduce impact.

Understanding and addressing the causes of vulnerability is key to reducing vulnerability. Causes are usually socially constructed. Poverty is a leading cause of vulnerability, and countering this by assisting the extreme poor to accrue and maximise return on assets is critical for reducing risk. Similarly, improving access to government services such as health or water is important for reducing vulnerability.

Another key cause of vulnerability is inequality. It is described in the next section.

For agriculture, vulnerabilities can be limited by selecting suitable crop varieties that are better able to withstand hazards such as salinisation, waterlogging, or extended dry spells. Early maturing crops can be used to avoid crops being damaged by early floods. Non-agricultural or off-farm income generation also reduces poverty and improves livelihoods diversity which, by extension, reduces vulnerability. Savings circles can further diversify livelihoods. In Bangladesh, self-help groups collectively save money, which they invest into small enterprises. They also engage in organic farming with crop varieties selected to tolerate local conditions.

The aftermath of a disaster is often an opportunity to build back better – both when rebuilding infrastructure and when improving institutional preparedness and awareness to reduce future vulnerabilities. After disasters, awareness of the importance of efforts to limit damages related to disasters is high, presenting a key opportunity to garner increased enthusiasm for, and investment in DRR.

Concern is not always able to secure the funding necessary to hazard-proof interventions to the extent that it deems appropriate. In Pakistan, for example, it designed a number of houses that could resist major hazards including floods, storms, and earthquakes. Unfortunately, the construction costs for these houses were beyond the allocated budget, and so houses had to be built to withstand only low to medium intensity hazards.

Tensions can arise over prioritising vulnerability reduction, particularly in situations where relocation is being proposed. In Haiti, Concern built houses on higher ground away from the coastline as part of its reconstruction efforts following Hurricane Sandy in 2012. Some residents were upset at being forced to choose whether to live close to their coastal livelihoods in poor facilities or in new structures further away. Some have chosen to abandon their newly constructed houses and persist in living in higher risk areas by the sea.

There are alternatives to eviction and relocation. Concern's work in the riverine contexts of Zambia, Pakistan, and Bangladesh provide examples of these alternatives. Communities in these areas continue to live in high-risk areas prone to seasonal flooding by modifying their livelihoods and adapting certain DRR measures. Seasonal agricultural patterns co-exist with some flood control measures including embankments, plinths, drainage, and natural resource management where needed.

Development and DRR should be based on traditional livelihoods patterns, or adaptations of them, taking seasonal differences not only into account, but harnessing them. For example, in Pakistan, Concern used to support embankments around agricultural land, but has since abandoned this approach as it was found that embankments prevented natural depositions of fertile silt onto floodplain fields. Plinths and embankments are still used to protect houses, and farming patterns and are adapted to take seasonal flooding into account, viewing it as positive – as long as harvests are in before the floods come – easily achieved through the introduction of fast maturing varieties of crops.

Settlement on a riverine island in northern Bangladesh. Houses are built on raised plinths to keep them dry during the months of high water. Concern also assists people to to develop vegetable gardens and plant fruit trees on the plinths, as well as installing latrines and wells. Photo by Aaron Clark-Ginsberg, 2013

Conclusions and lessons to be learned from reducing vulnerability

- Many interventions aimed at reducing vulnerability fall into the categories of poverty reduction and addressing inequality.
- Ensuring that livelihoods are hazard resilient is an important component of vulnerability reduction.
- Engineering inputs can be used to reduce exposure to hazards, including protecting essential infrastructure from being damaged by hazards.
- It is challenging to find sufficient funding for making structures strong enough to withstand peak intensity hazards.
- Build back better is a key opportunity to reduce future vulnerabilities.
- Relocation of people should be considered a measure of last resort only and should be on a voluntary basis.
- Adapting livelihoods and risk reduction measures to prevailing conditions is generally considered to be a better approach than relocating people.

2.5. Address drivers of inequality

Inequality is a causal factor of poverty and vulnerability. Most communities have groups of marginalised people within them. Often they are women, children, the disabled and the elderly, but they can also be the poor or a specific ethnic or social group. These groups often have less access to DRR benefits and their voices are sometimes not included within local DRR committees. For example, 80% of fatalities in the 1991 Bangladesh cyclone were women; at the time, they were less likely to have been taught how to swim and were less likely to receive early warning messages[6], among other factors. Similarly, people living further from health centres find it harder to access medical assistance that would allow them to address illness, and poor people often find it harder to access education or state services such as health support. Regional and national level DRR governance structures might favour richer districts over poorer ones.

In Concern's DRR work, equality is addressed by:

- Ensuring that the most vulnerable, many of who are marginalised or poor, are properly represented in disaster management committees.
- Understanding and addressing the specific needs of different groups in DRR analysis and plans.
- Addressing the needs of the most vulnerable as priorities.
- Addressing the underlying causes of inequality, many of which are differences in access to social or political assets.

Membership in DRR committees is, in many countries, not clearly specified, allowing Concern to lead on the selection of representatives from the community. Beyond the technical positions necessary in DRR committees, like leadership and health centre members, Concern advocates for all vulnerable groups to be represented. These positions that may represent groups such as the elderly, disabled or women, are normally filled through an election process.

Programmes must be designed based on a robust analysis of power dynamics and inequalities as part of the analysis of the causes of vulnerability, must work specifically with the most vulnerable sections of society, and must address the underlying reasons for specific vulnerabilities. This means moving away from a 'one size fits all' programme toward an approach that takes into consideration the vulnerability profiles of marginalised groups.

The social context can sometimes make inequality difficult to address directly. Afghanistan consistently ranks low in terms of gender equality and Concern is limited in the work that it can do there regarding gender. It is not, for example, able to conduct community meetings where women and men attend at the same time, and men remain the main decision-makers within most communities. However, it targets women in focus group discussions (using female staff members to run sessions) and includes their needs in community development plans.

Urban areas tend to be better off than rural ones, but the urban poor often have little ability to access urban support resources, as these tend to be privatised or only available in wealthier locations. Concern works to improve livelihoods, and through that, improve the access of the poorest to money, and therefore, support services.

Concern frequently uses its community-level work to address higher level inequality: in Bangladesh, Mozambique, and Kenya, for example, Concern's work with local DRR committees is partly focused on improving how community members access government support. In Kenya, committee members will, with Concern's support, go to government officials to demand services. They state that they are often able to access services because, as a group, their voice is stronger than it would be if they went individually.

Concern also works at the national level to address inequality. In Bangladesh, it works with pavement dwellers - long-term urban homeless who tend to be amongst the poorest in the city. It has worked with members of parliament to mobilise an All Party Parliamentary Group (a non-partisan parliamentary issue based group) on extreme poverty to modify its focus to include pavement dwellers and published a book '*Pavement Dwellers' Right To Survive'* (Shil, 2013).

Addressing inequality can be a slow and difficult process. People already in power often have an interest in maintaining existing power structures, both at local and national levels. In Zambia's Western Province, for example, women are included in DRR planning, decision-making, and implementation activities, but gender roles remain the same in daily life. The burden of clearing canals – an activity that reduces flooding, improves agriculture land, and reduces malaria – has fallen largely on women. With these women already burdened with the daily demands of child care, housekeeping and on-going agricultural labour, their greater participation in the physical labour required to keep canals open has arguably not assisted them. Concern prioritises gender equality alongside other programmes objectives to address this issue.

Despite these issues, Concern and other NGOs can often act as neutral mediators in various situations so are well positioned to address inequality. In Haiti, Concern was able to implement a peacebuilding programme because it positioned itself as a neutral actor. Importantly, it also used local staff as peace builders, as they knew the social context and were able to understand the dynamics between neighbourhoods.

Waste being sorted in the Korogocho slum, Nairobi, Kenya. Concern has developed a surveillance system of urban food insecurity in Nairobi, which highlights some of the underlying causes of food insecurity in this urban area, which include unemployment and insecurity. Alongside this Concern assists people to keep their environment clean while seeking improved income generation. Photo by Aaron Clark-Ginsberg, 2013

Conclusions and lessons to be learned from addressing drivers of inequality

- Some groups – such as women, the disabled and the elderly – suffer disproportionally larger impacts than others in times of disaster.
- Many of the underlying causes of vulnerability stem from inequality.
- Inequality can be directly addressed through DRR programming by ensuring marginalised and vulnerable groups are well represented on DRR committees, the specific needs of marginalised are identified and addressed in risk analysis and plans, and the underlying causes of inequality are also addressed.
- Advocacy can be an important tool in improving equality, aimed at improving national or local governance and access to services.
- Increasing the participation of women in DRR activities can lead to an increased burden on them if other gender roles are not rebalanced.
- Objectivity and neutrality are important for facilitating changes to social dynamics, as well as constant monitoring to ensure that specific needs of marginalised groups are not neglected.

2.6. Build coping and recovering capacity

Coping and recovering capacities are the capacities to 'live through' or survive a disaster, and then return back to the pre-disaster situation, or even a better one. Safety nets, contingencies, and social protection act as mechanisms to stop people falling into crisis without resorting to harmful behaviour or negative coping strategies.

- **Social protection** is largely government supported proactive assistance to people listed as vulnerable
- **Safety nets** are normally reactive support to vulnerable people when certain crisis thresholds are passed[7]
- **Contingencies** are resources set aside for use for emergency response, and can include pre-positioned resources for initiating responses

For example, the government of Ethiopia's Public Safety Net Programme (PSNP) guarantees 60 days of paid labour for those identified as vulnerable. The proceeds from this labour are then used by the recipient to assist in coping with food crises.

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Some of Concern's activities to improve coping and recovering capacity include:

- Constructing grain stores/seed banks in agro-pastoral dryland areas (Niger and Kenya), which can be used during drought.
- Restocking/destocking herds in dryland pastoral areas as a means of reducing drought impact.
- Canal clearing (Pakistan and Zambia) which decreases the duration of floods by speeding up the retreat of floodwaters.
- Saving circles in Ethiopia, Bangladesh, and Kenya, which residents use both for improving livelihoods and as a source of cash during emergencies.
- Community saving or quick collection of donations from community members by DRR committees in the wake of small disasters (common in Afghanistan and Zambia).
- Supporting government-managed social protection mechanisms by assisting with the identification of vulnerable people and linking them to the state social protection scheme (Niger and Ethiopia).
- Improving early warning systems, or the communication of warnings to vulnerable people, and preparedness planning, so that people know when disasters are imminent and how to cope when they strike.
- Developing evacuation plans and shelters for floods, tsunami, earthquakes, and other sudden onset life-threatening hazards, which enhance coping capacities and survival (all locations); including upgrading houses and schools into shelters and extending shelters for livelihoods assets live livestock, reducing the burden of recovery.
- Developing household level contingency plans (in Sierra Leone and Bangladesh – such as by putting important documents in plastic bags to protect them from floodwaters).
- Rapidly moving from the provision of life saving emergency response into shelter rebuilding and livelihoods recovery in the aftermath of disasters.
- Micro-insurance has been trialled for small-scale weather-based livestock insurance in Kenya.

Coping capacity can be significantly improved if vulnerable people can anticipate an event which allows them to take appropriate action such as seeking shelter, and safeguarding their productive assets. Timeliness is important as illustrated by case studies from Ethiopia and Niger, where cash for work programmes had to be concluded before the rains and busy agricultural season. In Niger, the provision of cash resulted in better dietary diversity, and the payment of school and medical fees, and worked even when the market was depressed by bulk buying on behalf of a larger group from distant markets.

Conclusions and lessons to be learned from improving coping and recovering capacity

- Where national social protection mechanisms exist, vulnerable people should be linked to them as an important mechanism for improving coping and recovering capacity.
- Safety nets can be community based such as grain and fodder banks or saving circles.
- Preparedness measures including awareness raising, preparedness planning, evacuations and the construction of storm shelters contribute to increasing coping capacity.
- NGOs can deliver safety nets in emergency responses – such as early or predictive cash transfers, or livestock support to pastoralist communities.

2.7. Build and enhance response capacity

There will always be hazards whose impacts overwhelm community resources and require an emergency response. In view of the importance of this, communities, government and humanitarian agencies must be prepared to respond in a timely and effective manner, saving lives and alleviating suffering. If possible, emergency responses can also contribute to the reduction of future vulnerabilities by ensuring that people do not slide further into extreme poverty as a result of disaster events. Some activities that Concern uses to enhance responses are:

- **Early Warning Systems** (EWS) that allow for timely preparedness and response from communities, Concern and other humanitarian actors. EWS must be communicated in language that is easily understood by the target communities and are only useful when a community based preparedness and response plan is in place.
- **Early Warning Early Action** (EWEA) focuses on building the institutional systems required for timely response. Concern is working with EWEA particularly in areas with cyclical, slow-onset emergencies such as the dryland areas of Niger and Kenya.
- **Preparing for Effective Emergency Response** (PEER), an organisation-wide mechanism to:
    - Monitor and adapt to changes in the humanitarian context each of our countries of operation.
    - Ensure that the country team and partners have sufficient capacity to effectively respond to emergencies in terms of people, money and materials.
    - Ensure Concern has the right mix of skills within country teams and is actively learning from its own and others' experiences.
- **Community Preparedness Planning**, including having the community institutions such as disaster management committees and task forces trained to lead and take first responder roles on emergency assessments, responses and coordination.
- **Pre-positioning** stocks to ensure a faster response, in the case of sudden onset emergencies, both for Concern and pre-positioning of response materials with community committees.
- **Coordination Mechanisms** are engaged with to ensure gaps do not arise, and duplication is avoided.
- **Strategic Partnerships** with other agencies including Alliance2015 partners, to expand reach and programming.

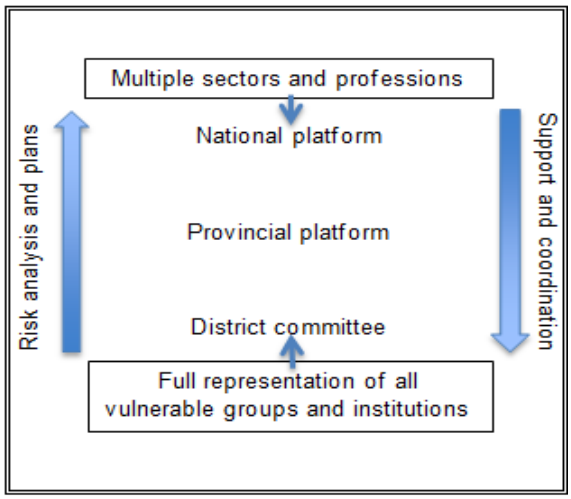
Conclusions and lessons to be learned from improving response capacity

- However successful resilience measures are, disasters will continue to happen, and emergency responses will continue to be needed.
- Concern builds response capacity through community and organisational preparedness, including establishing or linking to early warning systems, responding early, preparedness planning with communities and committees, and an internal preparedness process.
- EWS are extremely important and should be linked to wherever possible – and form the cornerstone for early warning early action (EWEA).
- The PEER process is essential for being able to respond in a timely and effective manner.

2.8. Build institutions for efficient and equitable governance

Strengthening institutions is a major component of Concern's approach to DRR and community resilience. This involves directly and indirectly providing institutional bodies with greater economic, physical, political, or social resources to implement DRR.

Understanding the formal and informal institutional context is the first step in institutional strengthening. The formal context can often be understood by reviewing government DRR policy to identify how DRR structures should function. It is important to use policy as a guide: following policy reduces overlap, improves coherence, enhances the potential for longer-term sustainability, and strengthens the state's capacity to respond. Figure 5 provides a general disaster management structure.



Understanding the informal context can be more difficult. Concern uses a number of tools to get a sense of this, including *Institutional Analysis and Response Capacity* which uses Venn diagrams to identify institutions, and determine their importance to DRR and their influence over community decision making. This tool has been successfully used in a number of countries, including Chad, Pakistan, Bangladesh and Sierra Leone. It is outlined in Concern's Risk Analysis Guidelines (Concern, 2012).

Figure 5: general disaster management structure

Concern will work to strengthen local DRR committees and establish them if needed. Most committees are comprised of two groups of people: elected members, often individuals whose voices are important for DRR, including community leaders and representatives from vulnerable groups; and unelected members who provide technical and administrative support such as community representatives of various government supported community institutions such as health centres, schools, or community leadership. Committee structures differ in each place, and are dependent on the broader governance contexts as well as the local risk profile. There are, however, some common principles to be aware of when seeking to strengthen committees:

- **Recognition** of the role of community committees by higher levels of administration. This is a first step to including DRR in development planning processes.
- **Difficulties of meso and macro level participation.** Line ministry officials rarely have DRR as their full time job. Participation is an extension of their normal activities, and may require incentives. This can create dysfunctional committees.
- **Incentives** for participation in DRR institutions pose challenges. The greater the incentives, the less likely it is that the committee will be sustainable.
- **The positioning of DRR platforms** at the national level can affect funding and acceptance by other line ministries. National platforms are often better housed within the office of the Vice President, President, or Prime Minister.
- **The degree of 'buy-in'** from the wider community will influence how well a community committee will function. In some cases, it may be better to use the established institutions in place, rather than creating new structures.
- **Institutionalising DRR** often requires high degrees of advocacy, and consortium approaches can be beneficial in this regard. A consortium can be a platform for a unified voice, messages, and sets of practices, and can improve the chance that approaches get adopted.
- **The level of decentralisation** influences how to engage with different stakeholders. High centralisation requires committed national engagement, while more decentralised structures require greater local level advocacy and are often easier for Concern to influence.
- **Targeting the poorest and most vulnerable** can be a source of tension within committees and communities where others feel ignored.

Conclusions and lessons to be learned from building governance institutions

- Community DRR governance committees are essential for community level DRR.
- Strengthening DRR governance institutions – such as disaster management committees – is a major component of Concern's DRR work.
- Linking community level DRR institutions to meso and macro level DRR institutions is important – Concern can and should work with all of the levels of an administration for greatest influence.
- Committee membership should be a mix of formal and informal institutional representation, with technical and elected representative positions and representation of the vulnerable groups ensured.
- Ideally, national platforms should be outside a line ministry so as to be truly multi-sectoral.
- Providing incentives to motivate attendance at committee meetings can create a precedent that will undermine its future sustainability.
- Committees need to be supported by the wider community. It is often better to use existing development committees for DRR work rather than creating parallel structures.
- More work needs to be done to ensure that the private sector is represented on committees.

2.9. Ensure sustainability by innovation, learning and exit strategies

Developing an exit strategy from the outset is a way of ensuring that programmes focus on supporting institutions to become fit for purpose in taking on the challenge of resilience building. This is a critical component of sustainability.

The earlier an exit is planned for, the sooner the appropriate procedures can be put in place for ensuring that responsibilities are handed over to the right institutions, which have the capacity to maintain the work. In Zambia's Western Province, Concern has helped strengthen DRR structures but has not found a way to fund those structures once it leaves. An exit strategy from this intervention in Zambia needs to involve strengthening and changing the political will of major actors involved in DRR, including both state and non-state actors.

Fostering a culture of innovation and learning is equally critical. The social, political, economic, and environmental contexts change, and institutions and the people they represent need to keep up with these changes, address the unexpected and learn from experience. This is especially important when considering the impacts of climate change and uncertainty regarding the future. Institutions must be encouraged to develop their own strategies to build resilience that can be implemented independently of Concern. A culture of innovation, trying out new techniques and technologies, research and learning should be encouraged through capacity building. Innovation and learning give individuals, households, and communities the tools to develop while growing and adapting to new events, the root of adaptive resilience.

Concern fosters learning and innovation in a number of ways, including encouraging learning between stakeholders. Farmer field schools allow farmers to come together and learn from each other and share practices. It also acts as a conduit for spreading new ideas between contexts, bringing them upward, downward and across countries.

Conclusions and lessons to be learned from Innovation, Learning and Exit Strategies

- Exit strategies are important and must include measures to ensure that institutions and other partners in DRR are left with enough capacity to continue the work without external support.
- It has proven to be challenging to garner enough national governmental support for ongoing DRR activities in some countries, which may point to weaknesses in advocacy.
- Fostering a culture of innovation and learning is essential for institutions and communities to keep up with the pace of change.
- Measurement of DRR work is essential for understanding what does and does not work and is an important mechanism for fostering learning.

3.0 Conclusion

Concern's work shows that DRR is a fundamental part of building community resilience. By looking at each of Concern's nine principles for programming for community resilience, it can be seen that the DRR approach is important for all of them and essential for some. Indeed, Concern sees community resilience building as an extension of DRR, bringing in components from climate change adaptation and social protection, placing a greater emphasis on reducing vulnerability and highlighting the importance of taking a systems approach.

Access to clean potable water is essential for life in the Tahoua region, Niger. These wells are designed to capture spilled water which is collected and made available for livestock, which are an essential component for resilience in the Sahel. Grain stores ensure food is available during lean months. Concern is also assisting communities to reclaim degraded pasture and agricultural land and improving agricultural practise, as well as helping the government identify the most vulnerable families for linking to the state supported social protection system. Photo by Dom Hunt, 2013.

Notes

1. UNISDR, 2009
2. HCUEP, Concern 2010
3. The set of conditions and processes resulting from physical, social, economic, and environmental factors, which increase the susceptibility of a community or an individual to the impact of hazards.
4. http://www.unisdr.org/we/campaign/sasakawa
5. Conservation agriculture is an “approach to managing agro-ecosystems for improved and sustained productivity, increased profits and food security while preserving and enhancing the resource base and the environment” (FAO, 2007).
6. Zoe Elna *et al* 2011
7. Please note that the terms social protection and safety nets are often used interchangeably.

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