WHAT HAVE WE LEARNED?

Key lessons from more than a decade of Concern's DRR programmes

CONCERN worldwide

1 INTRODUCTION

The Disaster Risk Reduction (DRR) documentation project

The research brief was to document what Concern has been, and is doing, in more than ten years of DRR programming.

The research was conducted by Aaron Clark-Ginsberg, a PhD student from University College Dublin, during 2013 and 2014.

Five contexts were chosen to study: mountains, rivers, coasts, drylands and urban areas; with ten country visits as shown in the table below.

COUNTRY	Mountains	Riverine	Coastal	Dryland	Urban
Afghanistan					
Bangladesh					
Ethiopia					
Haiti					
Kenya					
Mozambique					
Niger					
Pakistan					
Sierra Leone					
Zambia					

Methods included secondary information reviews, site visits, focus group discussions and key informant interviews with community members, academia, government officials and Concern staff.

Five context papers and eight country reports (one for each of the countries other than Kenya and Niger) were produced. A sixth paper was written synthesising the work of the project and outlining how Concern's DRR programming contributes to building community resilience.

How Concern approaches DRR and community resilience

Concern's work focuses on two core areas: humanitarian response to emergencies, and eliminating extreme poverty. Concern's DRR and resilience programmes aim to span the divide between short-term humanitarian work, and longer-term development work aimed at reducing the causal factors of extreme poverty.

Concern defines DRR as **"the process of protecting the livelihoods and assets of communities and individuals from the impact of hazards".**

DRR has four major components: **risk analysis**, **mitigation**, **preparedness**, and **advocacy**.

The defin haracteristics of its approach include:

- **Hazards are understood as broadly as possible**, including both human derived hazards and natural hazards. Given the profile of countries in which Concern operates, armed conflict is also considered as a hazard.
- **Programmes are tailored to address those who are *most* vulnerable**.
- **There is an equal emphasis on intensive risk and extensive risk,** as extensive risk is highly erosive to livelihoods and keep people poor.
- **A predominantly community based approach.**
- **Climate change and climate change adaptation are both part of DRR**.
- Organisational **preparedness for emergency response** is part of DRR.

DRR is the foundation of Concern's approach to community resilience. Concern considers community resilience to be: "***the ability of all vulnerable households or individuals that make up a community, to anticipate, respond to, cope with, and recover from the effects of shocks, and to adapt to stresses in a timely and effective manner without compromising their long-term prospects of moving out of poverty***".

Concern's conceptualisation of community resilience includes the following defining characteristics:

- **An explicit community focus, which includes the vulnerable households and individuals within communities**.
- **A systems approach**.
- **An adaptive and transformative focus**. Concern recognises that resilience needs to include the ability for improvement, development and change, not just maintenance of the *status quo*.
- **A multi-sector, multi-level** approach through multiple timeframes.
- **Blurring the distinction between humanitarian response and development**, by developing the ability to switch between responses and long term programming.

2 LESSONS LEARNED

General Lessons

The four components of DRR are appropriate to all contexts and all hazards.

Some of the mechanisms used to address different hazards may not traditionally be called DRR – but may be labelled WASH, preventative health, protection, or peacebuilding.

Risk analysis is the fundamental starting point for DRR and community resilience programming in all contexts, and the process is largely the same wherever it is performed.

When working to reduce risk, it is important to take into account where risk is created as well as where it is realised. They are not necessarily the same place.

Uncertainty is central to an understanding of risk and, with climate change, growing population pressure and other stresses, must increasingly be accounted for.

Taking a multi-hazard approach is important as the extreme poor are affected by multiple hazards, some of which may be human derived (such as conflict).

The hazards that communities deem most important are not necessarily the ones that kill the most people; community members often consider higher likelihood hazards to be more important. People at risk must be given the final informed decision over which hazards to prioritise and address, and NGOs should help in this regard by ensuring that easily understood, scientifically accurate information is provided to the community members to support the decision making process.

Governance – whether it is formal or customary – is very important in ensuring that risk is adequately addressed at the community level.

Introducing fast maturing rice varieties into the *haor* region of Bangladesh helps reduce the risk of harvests being damaged by early onset floods.

Lessons from the contexts

MOUNTAINS

Topography heavily influences mountains and their hazards. Hazards include flash floods, landslides, soil erosion and, in some cases, earthquakes and volcanic eruptions.

Preparedness must take remoteness into account, focusing on activities such as improving access to communities or developing alternative transport, and stockpiling response materials with high capacity DRR committees. Mountain topography lends itself to a watershed approach to natural resource management, which should be combined with structural measures and behaviour change. Watersheds often span several administration areas, so addressing upstream-downstream impacts and benefits is crucial.

Reclaiming land along river banks in Rustaq district, Takhar, Afghanistan, is made possible after the construction of river bank defences. Photo by Kieran McConville.

Mountain hazards are intense, and with a high likelihood of earthquakes, engineered structures need to be designed to withstand peak dynamic loads, which can be expensive. This needs to be factored in to programme design and budgeting.

Large-scale early warning systems do not take into account the geographical complexity of mountains. Small-scale, community based early warning systems are more appropriate for mountain contexts.

COASTS

Coastal areas are dynamic; climate change and sea level rise is expected to increase the exposure to many coastal hazards, such as cyclones, storm surges, salinisation, and coastal erosion. DRR must be correspondingly adaptable.

Preparing for cyclones and tsunami through early warning systems, ensuring that warnings reach every vulnerable person, putting simple evacuation plans in place, and providing adequate shelter for all are necessary areas of focus for coastal DRR.

DRR measures suit an integrated approach of environmental conservation, structural measures, climate smart livelihoods and preparedness measures. For integrated approaches to be successful, with a multitude of competing interests and stakeholders, they must be underpinned by robust multi-stakeholder representative platforms working at different scales and administrative levels.

Instead of engaging in shrimp farming, which is degrading to the environment, Marufa in Kaligunj, Satkhira, Bangladesh, is constructing a plinth for his family's house, raising it above flood levels. Making a plinth is done by constructing ponds for rainwater harvesting, which are used for vegetable growing, an environmentally benign alternative to shrimp farming. Photo by Mahmud.

RIVERS

The dynamic characteristics of rivers can be both a blessing and a curse for the extreme poor in riverine areas. Seasonal floods provide fertility and water to agriculture alongside rivers, but can turn into disasters when they are exceptionally intense or when vulnerability is high.

Adapting to seasonal floods can be the most effective approach to DRR in riverine areas, complemented with natural resource management and structural measures implemented together in high risk areas. Traditional livelihoods are often well-adapted to seasonal flooding. Relocating people and their livelihoods away from floodplains is highly contentious and should only be considered as a last resort.

Rivers need to be considered from a systems perspective, with upstream-downstream linkages clearly considered.

Pictured: Community members clear canals in the flood plain of the Zambezi River, in Western province, Zambia. Canal clearing is done to delay the onset of floods and speed up the retreat of flood waters, making conservation agriculture in the region less hazardous.

DRYLANDS

Water fundamentally shapes dryland hazards, with droughts, variable weather, floods and conflict being important hazards..

Early warning early action (EWEA) is an important area of work for drylands. Early action often includes cash transfers, but can also include scaling up services such as health services or providing early support to livestock.

EWEA systems need to be delivered alongside longer-term interventions that address the underlying causes of vulnerability, including land management, water supply improvements, better access to services, and livelihoods support.

Vaccinating goats and sheep in the drylands of Kenya is an essential part of preparing for the dry season as, when animals get thirsty, they are more vulnerable to disease. Livestock are the cornerstone of dryland economies.

Ensuring an adequate supply of water for livestock as well as people can alleviate some of the causes of conflict. Other livestock related interventions can include early vaccinations, fodder and fuel subsidies and fodder banks.

Governance is fundamentally important to dryland risk management, linking community institutions to higher levels of government, and engaging with multiple stakeholders for a shared responsibility in managing dryland risks.

URBAN AREAS

Risks in urban areas are disproportionately human derived, and include various types of conflict and criminality, price spikes, discrimination and marginalisation, and unemployment, although natural hazards also exist – depending on where the urban area is situated. The density of population exacerbates disease risks.

Living conditions in Kroo Bay, Freetown, Sierra Leone are difficult. Situated at the mouth of a river, the slum is exposed to floods both from the river and sea, exacerbated by large amounts of rubbish that wash down the river from other parts of the city. The city council prohibits the building of permanent structures in the slum area, but even low cost temporary drainage solutions using sand bags can help reduce seasonal flooding.

Urban characteristics that shape urban DRR include the density of urban populations, heterogeneity of community, the orientation of livelihoods towards the market, and the complexity of politics and institutions.

Given the complexity and dynamism of urban areas, a risk analysis needs to place additional focus on institutions, power dynamics, and the underlying causes of risk.

Urban surveillance systems can be adapted to function as early warning systems, but thresholds need to be established by multiple institutions who are then held to account for early emergency responses. Cash transfers generally work better than other forms of emergency responses that address urban food insecurity.

Structural measures for controlling natural hazards are extremely important in urban areas, given the density of population and the built environment.

Urban dwellers can be more willing to provide money than time to urban services such as waste disposal and collection. Private sector approaches present opportunities for DRR success.

In places where criminality and conflict are rife, these must be addressed before further DRR work can be considered, through a process of peacebuilding and seeking livelihoods alternatives to violence.

The heterogeneity, politicisation, and complexity of urban areas place considerable importance on multi-stakeholder platforms. Advocacy and long-term approaches to address social exclusion aimed at alleviating some of the systemic risk factors such as the constant threat of eviction, severe marginalisation, or the manipulation of conflict for political ends must also be a central component of urban DRR.

"THE HETEROGENEITY, POLITICISATION, AND COMPLEXITY OF URBAN AREAS PLACES HIGH IMPORTANCE ON MULTI-STAKEHOLDER PLATFORMS."

HOW CONCERN ADDRESSES KEY HAZARDS

Standard activities for addressing hazards include:

- Undertaking a thorough risk analysis
- Establishing and/or strengthening the capacity of local and meso-level DRR governance institutions
- Linking to available early warning systems
- Conducting preparedness planning for multiple hazards
- Carrying out DRR planning, and embedding them in community planning processes
- Implementing Concern's internal preparedness mechanism, Preparedness for Effective Emergency Response (PEER)

Certain hazards require specific mitigation and preparedness approaches:

HAZARD	MITIGATION	PREPAREDNESS
Earthquakes	Earthquake tolerant essential infrastructure, build back better	
Landslides	Retaining walls, reforestation, terraces	
Flash floods	Embankments, flood walls protecting essential infrastructure, check dams, weirs, reforestation	Early warning systems
Seasonal flooding	Plinths, raised wells, embankments, adaptable livelihoods, early maturing crop varieties	Early warning systems, household level preparedness
Cyclones	Embankments, forestation on embankments, conservation of existing forests	Cyclone shelters, evacuation plans, linking to early warning systems, household level preparedness
Salinisation	Rainwater harvesting, ponds, saline tolerant crop varieties	
Erosion - slope	Reforestation, weirs, check dams, terraces	
Erosion – river bank	Forestation, grass plantation, conservation of existing forest	Household level preparedness
Drought	Land reclamation and management, boreholes, wells, ponds, sand dams, conservation agriculture, drought tolerant crop varieties	Link to early warning systems, early cash transfers, fodder and fuel subsidies, CMAM surge, saving circles
Contagious diseases	WASH	Surveillance
Price shocks	Savings circles	Surveillance
Criminality and local level conflict	Peacebuilding, alternative / improved livelihoods, provision of sufficient water	Early warning system, security training

The table only displays activities unique to these hazards. Empty boxes do not necessarily indicate that nothing is being done by Concern in its current programmes, only that nothing unique to those hazards is being done.

RISK ANALYSIS

CONCERN USES TWO KEY mechanisms for analysing risk: contextual analysis and community risk analysis. The former is useful for gaining an overview of hazards, and who is most vulnerable, but cannot be seen as a replacement for in-depth community risk analysis. The latter tends to go much deeper into the causal factors of risk and vulnerability, and also allows for the community to prioritise the hazards they consider most important.

Conducting a risk analysis with a disaster management committee in Tcharow village, Gos Beida, Chad. It is vitally important to understand hazards – and what could be done about them – from the community perspective.

Concern has found selecting priority hazards to analyse at depth should be done early in the risk analysis process. This means only the hazards held to be most important to the community are delved into. How communities prioritise hazards is not necessarily the same as how experts or governments prioritise them, with communities tending to focus on those that are most likely to occur.

It is a good idea to integrate risk analysis into other types of analysis where possible; for example incorporating risk analysis and land use analysis in a watershed management project so that decision making is influenced by livelihoods demands, topography characteristics, *and* hazards or areas of vulnerability.

The participation of women and other potentially marginalised groups is extremely important. All efforts must be made to allow women, disabled, elderly or certain social groups to participate in the way they prefer, or their specific needs may go unaddressed. This process does not stop at the analysis stage, but must be carried forward into planning.

Including older people in a risk analysis can help in building an understanding of how hazards change through time. Concern is learning that plans that are aimed at those who are most vulnerable are highly likely to suit the less vulnerable too.

Risk analyses are normally done with a community representative group, such as a disaster management committee, which is fine as long as it is truly representative, and can make decisions on behalf of the wider community.

While the risk analysis process and necessary information remains the regardless of context or scale, the urban context requires another look at the definition of 'community'. In small and discreet urban slums, communities might be considered geographically, but even in these cases there can be a greater sense of community among other groups, such as religious groups, youth groups or livelihoods groups.

It is important that risk analyses and risk informed plans are documented and shared with higher levels of the chain of administration. Sharing helps contextualise their decisions and forces them to address the specific differences in each area under their remit.

MITIGATION

MITIGATION SHOULD ADDRESS BOTH the causes of hazards and of vulnerability. The most effective mitigation methods are those that combine multiple initiatives in an integrated 'package' – such as natural resource management, engineered structural measures, livelihoods interventions and behaviour change.

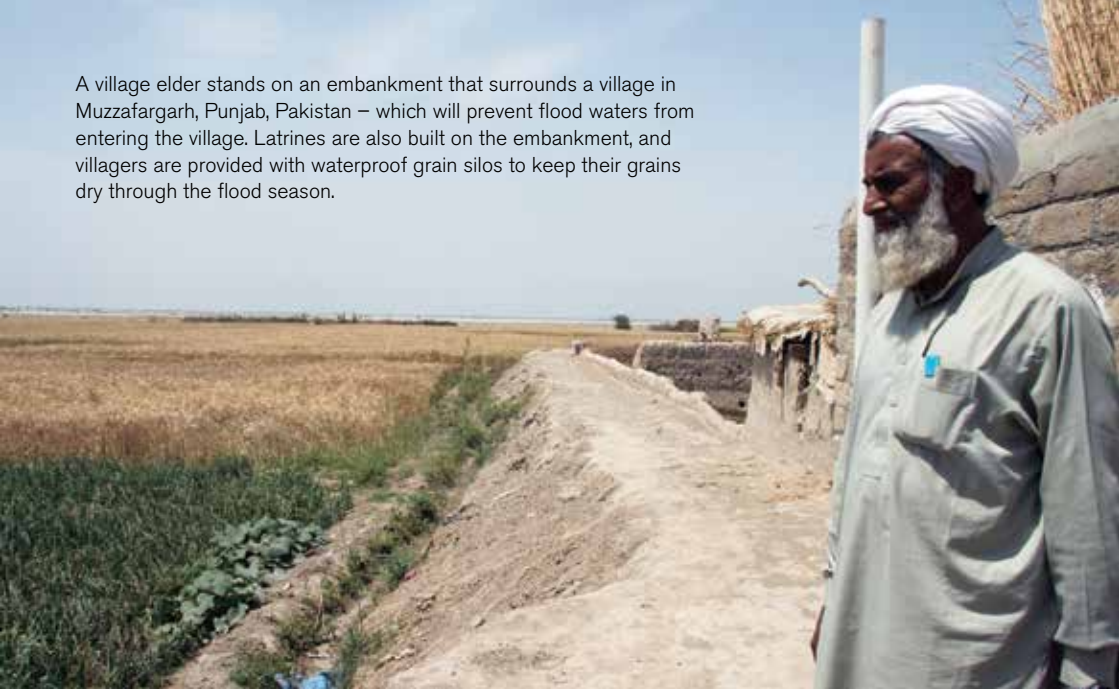
Examples of mitigation include:

- Slope rehabilitation in the mountains of Ethiopia, which takes a watershed management approach, combining terracing supported by the Public Safety Net Programme (PSNP), fodder development, prevention of open grazing of livestock, hazard tolerant crops, and upgrades to irrigation and water supply systems.
- Watershed management in the mountains of Afghanistan, which includes gully control, weirs, and check-dams to slow water and reduce erosion and downstream sedimentation; terraces and reforestation with exclusion of open grazing; protection walls around essential infrastructure and built environments; and livelihoods improvements.
- Coastal zone DRR in Bangladesh, which combines embankments, ponds, household level preparedness, and climate smart saline tolerant livelihoods improvements.
- Riverine DRR in Pakistan, which includes seasonal flood tolerant houses and the use of plinths, drainage system upgrades, environmental management, raised wells, and livelihoods improvements.
- Drought management through land reclamation in the drylands of Niger, which includes reforestation with the exclusion of open grazing, supported by the state safety net; water efficient and soil improving livelihoods methods; and upgrades to water supply including that for livestock.

Successful natural resource management requires a component of behaviour change, be it the exclusion of grazing to allow young plants to mature, or addressing and reducing deforestation and unsustainable resource extraction and developing alternative livelihood mechanisms.

Bioengineering for mitigation is not necessarily straightforward, and requires technical knowledge to select the right species mix, planting methods, and accompanying structural elements. There are limits to this approach. For example, planting to control erosion where water flow is high, may not 'take', but already established forests can be conserved to good effect.

The importance of technical engineering inputs cannot be underestimated. Designing structures to withstand peak hazard intensity, when forces are at their greatest, helps in the future-proofing of structures. Climate change and the increasing intensity of some hazards must be accounted for in the design of these structures. Under-engineering structures increases the risk that these structures will fail at critical moments, posing a threat to life and requiring re-investment to rebuild them.



A village elder stands on an embankment that surrounds a village in Muzzafargarh, Punjab, Pakistan – which will prevent flood waters from entering the village. Latrines are also built on the embankment, and villagers are provided with waterproof grain silos to keep their grains dry through the flood season.

PREPAREDNESS

PREPAREDNESS INCLUDES AWARENESS AND understanding; hazard anticipation through early warning systems; shelters and other mechanisms for seeking safety; and improved emergency responses.

Local committees allow for a degree of governance over preparedness actions, and should be either strengthened or established where they do not yet exist. Committees must be legitimate in their community, and not be a parallel structure to other committees, including customary ones. Committee membership should be guided by government policy where it exists. Where it does not, membership should be a blend of technical unelected positions and elected positions representative of all vulnerable groups.

Early warning systems (EWS) are crucial in enabling communities and responding agencies to anticipate hazards. NGOs should contribute with local data collection and analysis when EWS exist, and should establish them when they do not. It is also possible to have EWS for human derived hazards, including local level conflict as the Concern programme in Port au Prince, Haiti has shown.

A communication strategy to ensure vulnerable people receive and understand warnings needs to be in place. Multiple different communication methods should be employed, and care should be taken to use simple and understandable language. People living in remote areas or some marginalised groups may not receive warnings unless specifically targeted; this ‘last mile’ communication remains challenging.

Evacuation shelters can be any building strong enough to withstand the hazard in question, including houses, schools, or purpose built shelters. If schools are used, they should be reverted to normal school use as soon as possible after the hazard has passed. Drills and simulations are important in testing preparedness measures.

Household level preparedness can be useful and simple, including activities such as encouraging individuals to put their important documents in plastic bags for floods and cyclones, and outlining family member roles in saving household assets.

Response agencies such as Concern also need a preparedness process. This includes ensuring that skills and systems are suitable for handling surges, and monitoring changing contexts. A large network of prepared local and national NGOs under emergency partnership arrangements can be used to identify needs and start responding before agencies based in regional or national centres can get there. This also greatly expands response coverage.

In slow onset disasters such as food crises, early responses can be mounted before a crisis deepens into an emergency. This often involves cash. In Kenya, Concern has been working with the health services to scale up and down malnutrition treatments during food crises. In Nairobi, Concern has developed a surveillance system for monitoring urban food insecurity that can be used to galvanise early response.

Remote areas need to have additional focus on the capacity of committees as it is less likely that response agencies will get to the area in a timely fashion, especially if roads are impassable. Remote area stockpiling and road system upgrades should be considered.

Pictured: A leaflet in Haitian Creole that explains household disaster preparedness measures. Designed by the Haitian government's Department of Civil Protection with support from Concern, Oxfam, Handicap International and UNDP, this initiative points to the importance of working in collaboration with others, as well as ensuring that households resettled after the 2010 earthquake are kept as safe as possible.

ADVOCACY

ADVOCACY IS USED TO engage with other stakeholders, encouraging them to participate in risk reduction initiatives, hold them to account, and alleviate some of the underlying risk factors from the wider context. Campaigning at the local level can also be used to change patterns of behaviour and discrimination within communities that give rise to risk.

Complex programmes with projects in a variety of sectors and areas need to be governed and managed by multiple stakeholders. This is a crucial part of DRR that guarantees sustainability. In many cases, policy needs to support local-level risk reduction initiatives. For example, conserving the Sunderban forests in India and Bangladesh requires policy and the engagement of multiple stakeholders at multiple levels and locations, including internationally. Significant amounts of time and resources must be invested in bringing stakeholders together.

Certain risk reduction policies can sometimes increase risk and extreme poverty. The policy of eviction and relocation of people living in slums in Freetown has been successfully opposed so far, and NGOs like Concern should continue to defend the rights of the extreme poor if needed.

Inequality is often one of the causes of vulnerability. Urban poor, in spite of being physically near to services, are often excluded from them. Pavement dwellers in Bangladesh lack a permanent address, which prevents them from applying for birth certificates and accessing health care and schooling. Advocating for their recognition is an important way of contributing to the reduction of their risk.

Coming together into consortia is recommended. In Bangladesh, Concern has joined with seven other NGOs to form the *National Alliance for Risk Reduction Initiatives* (NARRI), which maximises the voice and influence of the NGOs involved.

Commissioning studies builds an evidence base that shows what does or does not work for DRR, and can be a useful means for building a case for investing resources, time and effort in DRR.

Terracing in Ethiopia is linked to the government's Public Safety Net Programme, which provides paid labour to people identified as being vulnerable to food crisis. Concern works closely with the government, assisting in the identification of safety net beneficiaries, as well as collecting and analysing data for the national early warning system.

"THE MOST EFFECTIVE MITIGATION METHODS ARE THOSE THAT COMBINE MULTIPLE INITIATIVES IN AN INTEGRATED PACKAGE."

HOW CONCERN'S DRR WORK CONTRIBUTES TO THE BUILDING OF COMMUNITY RESILIENCE

CONCERN'S APPROACH TO BUILDING community resilience starts with a **risk analysis.** Concern's DRR community risk analysis processes are suitable for this purpose, as long as a multi-hazard approach in the widest sense is taken.

Concern's most successful DRR work uses integrated interventions, spanning different timeframes, communities, and sectors. Working with local, national, and international partners is critical, as Concern is just one actor and cannot address every component of resilience on its own. This **coordinated approach** is a central component of the requirement to take a systems approach to community resilience.

It is not enough to just reduce vulnerability, but also to remove some of the underlying causes of risk, which includes **reducing the scale, intensity and frequency of hazards**. Many hazards are amenable to this approach – often through ecosystem approaches and engineering – but hazards that are almost entirely natural in origin or those that occur at a large scale are largely immune to being influenced by Concern directly, although it is still possible to reduce their impacts.

Key to **reducing vulnerability** is understanding and addressing the causes of vulnerability. Causes are almost always socially constructed and often relate to poverty. Reducing vulnerability often requires multiple integrated interventions – for example, combining engineered structures to reduce hazard exposure, natural resource management to improve ecosystems, livelihoods interventions for improved access to assets, and saving circles for something to fall back on, etc.

Addressing the causes of inequality is a core component of building community resilience. Measures to address inequality within DRR programmes include representing marginalised groups within DRR committees, making sure the needs of the marginalised are addressed, improving access to government services for all, and advocating at meso and macro levels for the marginalised.

"CONCERN'S MOST SUCCESSFUL DRR WORK USES INTEGRATED INTERVENTIONS, SPANNING DIFFERENT TIMEFRAMES, COMMUNITIES, AND SECTORS."

Terracing slopes in Amhara District, Ethiopia is only part of Concern's interventions. Alongside these structural measures are the introduction of drought tolerant high value crops ('Irish' potato), irrigation, storage, livestock management improvements, establishment of saving circles and improved water, sanitation and hygiene.

When a disaster happens, safety nets and other measures to **enhance coping and recovering capacities** are needed to support the most vulnerable people through crises. Early warnings are fundamental for anticipating disasters, and if preparedness plans are in place, improve the coping ability of communities and the response capacity of government, communities, and humanitarian agencies.

Building the capacity of formal or informal governance institutions is a key component to both DRR and community resilience building. Links must be established from micro to macro levels and with different actors within levels.

Fostering a culture of innovation and learning is important to ensure that changes to the context continue to be addressed, and that institutions and the people they represent learn from experiences. Measuring the effectiveness of interventions and supporting home-grown innovation are both central to this.

Most of these activities occur during the development phase. Development funding must be increasingly devoted to resilience building, leaving humanitarian funds ring-fenced for their core intent of responding to emergencies.

Steep slopes in Dessie Zuria, Amhara, Ethiopia are terraced, after which they are planted with fodder crops, and livestock are excluded from grazing. If all of these steps are taken, the treated slopes absorb more water, offsetting drought and reducing the risk of surface run-off and landslides.

ALL PHOTOS BY **DOM HUNT** UNLESS OTHERWISE SPECIFIED

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