GUIDANCE ON

Livelihood

Tsunami Global Lessons Learned Project

DISASTER RECOVERY TOOLKIT

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The Disaster Recovery Toolkit comprises of the following:

1) Handbook for Disaster Recovery Practitioners
2) Training Manual – Learning Workshop on Recovery and Reconstruction
3) Guidance on Critical Facilities
4) Guidance on Housing
5) Guidance on Land Use Planning
6) Guidance on Livelihood

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FOREWORD

Ten years have passed since the Indian Ocean Earthquake and Tsunami of December 2004. The consequences of this disaster have continued to unfold in the minds of individuals, the collective lives of affected families and communities, and within the framework of nations and the region as a whole. Indeed, the memory of this great tragedy is imprinted on the global mind. The loved ones of the more than 228, 000 people who perished look back on this disaster every day. For the rest of us, the 10th anniversary provides an opportunity to reflect on the memory of these departed souls, and to think of those who were left behind in devastated families, communities and environments.

The recovery of the affected areas in the months and years since the event itself is an affirmation of human resilience and creativity in building solutions- and finding ways out- of the most challenging situations. It is out of respect to those who perished or suffered that we should take what lessons we can from such experiences, and use them to design better strategies for disaster response and recovery in the future.

With climate change proceeding apace, the notion of environmental vulnerability is becoming increasingly broad and hard to pinpoint: everybody is vulnerable, and because of this, our incentive to learn from what came before should be heightened.

The Tsunami Global Lessons Learned Project (TGLLP) was created with a view to gathering, learning from and sharing experiences relating to the 2004 earthquake and tsunami, and other disasters in the region that occurred between 1993 and 2013. The project sought

to deliver three principle outcomes: a global lessons learned study, a Discovery Channel documentary tracking the recovery, and a disaster recovery toolkit for recovery practitioners.

The first of these outcomes was a report entitled *The Tsunami Legacy: Innovations, Breakthroughs and Challenges* which was officially released on 24 April 2009 at a ceremony at the United Nations Headquarters in New York. A few months later, in December 2009, a documentary on lessons learned, produced independently, was aired on the Discovery Channel.

At the launch of *The Tsunami Legacy* in 2009, an announcement was made regarding the development of a suite of handbook and guidance notes targeted specifically at recovery programme leaders and practitioners. The Disaster Recovery Toolkit forms the third deliverable, and it is this that has been developed by the Tsunami Global Lessons Learned Project Steering Committee (TGLLP-SC) in partnership with the Asian Disaster Preparedness Centre (ADPC). The 'Toolkit' is targeted at practitioners responsible for implementing recovery programmes, its objective to provide a 'how to' guide on development, implementing and managing complex post-disaster recovery programmes.

This document, *Guidance on Livelihood*, has been framed as a reference document to provide strategic guidance on incorporating DRR measures into livelihoods during the post-disaster phase. It also aims to accompany and enrich the handbook and the learning workshop module with key considerations on 'why and how' to bring DRR into livelihoods recovery and reconstruction interventions.

By introducing this Guidance, the TGLLP Steering Committee hopes it will help enhance the capacities of government agencies, especially the central level agencies who are engaged in policy and strategy formulation for livelihoods in recovery and reconstruction and who support local level agencies. The TGLLP-SC also hopes that the Guidance will serve as a reference tool for development partners who work alongside the above agencies in livelihoods recovery and reconstruction.

- Steering Committee of The Tsunami Global Lessons Learned Project

CONTENT

ABBREVIATIONS

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ADRM	Aceh Disaster Risk Map
ARTF	Afghan Reconstruction Trust Fund
ASEAN	Association of Southeast Asian Nations
BMTPC	Building Materials Technology Promotion Council
BRR NAD-Nias	Badan Rehabilitasi dan Rekonstruksi NAD-Nias (Indonesia) *(Agency for the Rehabilitation and Reconstruction of Aceh and Nias)*
CBA	Community Based-Assessment / Communication-based Assessment
CBO	Community-based Organization
CCA	Climate Change Adaptation
CFAN	Coordination Forum for Aceh and Nias
CSO	Civil Society Organization
CZMA	CZM Authority
DAD	Development Assistance Database
DALA	Damage and Loss Assessment
DRMS	Disaster Risk Management Strategy
DRR	Disaster Risk Reduction
DRR-A	"Making Aceh Safer Through Disaster Risk Reduction in Development"
ECHO	European Commission for Humanitarian Aid and Civil Protection
EIA	Environmental Impact Assessment
ERRA	Earthquake Reconstruction & Rehabilitation Authority (Pakistan)
GFDRR	Global Facility for Disaster Reduction and Recovery
GIS	Geographic Information System
GoTN	Government of Tamil Nadu'
GPS	Global Positioning System
GSDMA	Gujarat State Disaster Management Authority (India)
HRNA	Human Recovery Needs Assessment
IASC	Inter-Agency Standing Committee
ICT	Information and Communication Technologies
IRP	International Recovery Platform
KPI	Key Performance Indicator
LIFT	Livelihoods and Food Security Trust Fund
MDF	Multi Donor Fund for Aceh and Nias
MDTF	Multi-Donor Trust Fund

M&E	Monitoring and Evaluation
MHJ	Ministry of Health
MoU	Memorandum of Understanding
MPTF	Multi-Partner Trust Fund
NCRC	NGO Coordination and Resource Centre (Nagapattinam, India)
NDRF	National Disaster Response Force (India)
NDRF	National Disaster Response Framework (USA)
NWFP	North-Western Frontier Province
OCHA	Office for the Coordination of Humanitarian Affairs
ODA	Official Development Assistance
OSD	Officer of Special Duty
OSDMA	Orissa State Disaster Mitigation Authority
PAK	Pakistan-Administered Kashmir
PDNA	Post Disaster Needs Assessments
PHC	Primary Health Centre (India)
PONJA	Post-Nargis Joint Assessment
PONREPP	Post-Nargis Recovery and Emergency Preparedness Plan
PR	Periodic Review
RADA	Reconstruction and Development Agency (Sri Lanka)
RAN	Recovery Aceh-Nias Database (Indonesia)
RIAS	Recovery Information and Accountability System
R&R	Recovery and Reconstruction
SAARC	SAARC South Asian Association of Regional Cooperation
SIFFS	South Indian Federation of Fishermen Societies
SIM	Social Impact Monitoring
SLF	SL framework or SLA framework (according to IFAD)
SNEHA	Social Need Education and Human Awareness
TCCC	The Coca-Cola Company
TCG	Tripartite Core Group
TGLL	Tsunami Global Lessons Learned
TGLLP	TGLL Project (UNDP publications never wrote TGLLP)
TGLLP-SC	TGLL Project Steering Committee
TRIAMS	Tsunami Recovery Impact Assessment and Monitoring System
UN ECHA	United Nations Executive Committee for Humanitarian Affairs
UNF	United Nations Foundation
UNISDR	United Nations International Strategy for Disaster Reduction
UNORC	United Nations Office of the Recovery Coordinator for Aceh and Nias
USD	United States Dollar
VTC	Volunteer Technology Community

INTRODUCTION

1 BACKGROUND

The recent past has seen some of history's greatest disasters, including the 2011 East Japan earthquake and tsunami, the 2010 Haiti earthquake, the 2008 Sichuan earthquake, the 2008 Nargis cyclone, the 2005 Pakistan earthquake, the 2004 Indian Ocean tsunami, the 2003 Bam earthquake, the 2001 Gujarat earthquake, and the Orissa Super Cyclone of 1999. The increased exposure of populations and assets in vulnerable areas, partially as a result of climate change, is reconfiguring risks. Over the past few decades there has been an increase in the number of disaster events. These disasters, apart from claiming precious lives, destroy the development gains from the previous years, decades and even centuries. Livelihoods are badly affected in most of these disasters, and impacts on livelihood have multi-fold implications.

Countries and organisations striving to meet global, regional and national commitments on risk management are demanding smarter, more integrated approaches that address the causes of vulnerability in a coherent and effective way across various sectors including livelihoods. For example, the goal of the government of Myanmar's national action plan is 'to make Myanmar safer and more resilient against natural hazards, thus protecting lives, livelihoods and developmental gains'.

The importance of livelihoods' resilience and recovery strategies is being recognised and included in a more coherent, integrated approach to managing and adapting to disaster risks, particularly during recovery and reconstruction. This presents a new window of opportunity for risk reduction, which is reflected in the UNISDR's definition of "recovery" as the restoration, and where appropriate improvement of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors. This definition gives centrality to livelihoods and puts forward the notion that recovery is not all about the restoration of assets and existing livelihoods. Instead the aim is to improve livelihood strategies and possibilities enhancing people's capacities to adapt to new disaster risks and to improve their living conditions (physical, social and financial resilience).

Thus the overall aim is to develop sustainable livelihoods during recovery and reconstruction processes.

2 PURPOSE OF THIS GUIDANCE

Within the overall stated aim, this document provides strategic guidance on incorporating DRR measures in livelihoods recovery and reconstruction process through key considerations. It draws on valuable lessons from previous experiences, in particular the efforts following the 2004 Indian Ocean tsunami.

3 STRUCTURE OF THE GUIDANCE

This document aims to:

- Identify the nexus between livelihoods and disasters and identify critical elements of sustainable livelihoods.
- Give a rationale for integrating DRR in livelihoods recovery and reconstruction strategies and
- Outline key DRR considerations for livelihoods recovery and reconstruction to support the overall Build Back Better objective.

4 TARGET AUDIENCE

This guidance is primarily targeted at central level government agencies traditionally involved in policy and strategy formulation for livelihoods revival processes, but also to support local level agencies undertaking livelihood recovery and reconstruction. These include agencies working in agriculture, fishery, industry, infrastructure, tourism, economic development, labour and DRR. Development partners can also use the document as a reference for DRR inclusion in livelihoods recovery policy and strategy. Additionally, this guidance expects to provide basic information to donor agencies that are interested in and committed to funding (livelihoods) recovery programmes in order to formulate effective and appropriate strategies, and to monitor and evaluate livelihoods projects.

5 SCOPE

- This document focuses on the recovery of sustainable livelihoods in both rural and urban settings. The livelihoods referred to in this document cover the sectors of agriculture, fishery, forestry, tourism, energy, construction, cottage industry and local level small and medium businesses.
- It offers key considerations for integrating DRR to revive sustainable livelihoods in disaster-affected communities.
- It has limited application for agencies at the grass roots level and communities engaged in rebuilding sustainable livelihoods.

LIVELIHOODS AND POST-DISASTER IN R&R

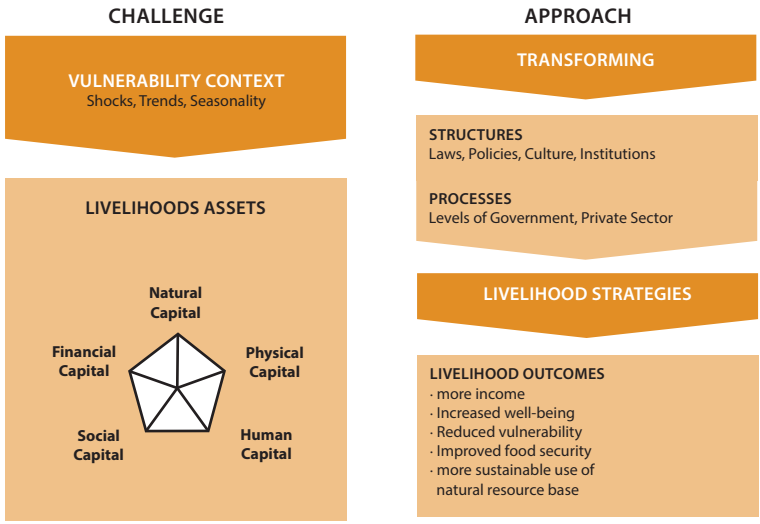
1 THE SUSTAINABLE LIVELIHOODS FRAMEWORK

A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable if it can cope with and recover from stress and shocks while maintaining or enhancing its capabilities both now and in the future, while not undermining the natural resource base.[i]

The Sustainable Livelihoods Framework (SLF) *(see Figure below)* helps explain and analyse the household economic systems of the poor.
It includes:

- The livelihood assets held by households and communities, generally categorised as human, natural, financial, physical, and social capital (H, N, F, P, S).
- The vulnerability context for households, which helps frame the effectiveness of livelihood assets.
- The processes, structures, institutions and policies that create an enabling environment.
- The structures and policies that shape different livelihood strategies.
- The combination, assignation and adaptation of assets and strategies to create livelihood outcomes.

THE SUSTAINABLE LIVELIHOODS FRAMEWORK, DFID 1999



2 IMPACT OF DISASTERS ON LIVELIHOODS

Disasters impact all the components of the SLF. Additionally climate change is reconfiguring risks. Therefore, the risks to livelihoods have increased. The potential impact of disasters on livelihoods includes:

Assets

All asset types can be negatively affected by disaster.

- **Natural assets**: by destruction, contamination and deterioration of agricultural land, forests and water sources;
- **Physical assets:** by loss of tools, animals, seeds, and loss of infrastructure such as roads, bridges and markets;
- **Financial assets:** by loss of savings, decreased sales of crops and animals, disruption of labour sources or deaths of family wage earners, decreased access to credit, decreased value of cash savings and disruption of cash flows among interdependent livelihoods groups;
- **Human capital:** by loss of life, injury, malnutrition, disease and unemployment;
- **Social capital:** by damage to social networks and normal solidarity links and possibilities.

Vulnerability context

Different hazards have different environmental impacts. Hurricanes, tidal waves, and other coastal hazards can affect sea levels and cause salt water flooding. Earthquakes and floods can cause changes to arable land and erosion patterns. All disasters have the potential to destroy flora and fauna and thus disrupt ecosystems.

Institutions, processes and socio-economic activities

Disasters affect infrastructure and resources, which in turn has an effect on social and financial structures. Human resources are disrupted and different needs and priorities arise. Disruption to markets and financial services can impact the entire livelihoods base in a community.

3 LIVELIHOODS R&R

The nature and type of livelihood interventions and strategies executed in post-disaster scenarios are determined by several factors, including the time sensitivity of urgent responses and interventions, the complexity of

needs of the affected communities, the mandates, focus and capacities of implementing agencies, the economic priorities of the government and the socio-economic environment of the impacted region. Broadly, post-disaster intervention mechanisms are categorised into three areas:

- Promotion of livelihoods. These include activities to improve household resilience such as savings and microcredit/microfinance programs, enterprise training, skills development and capacity building.
- Protection of livelihoods. These include activities to prevent decline in household livelihood security, particularly in periods of stress, such as the creation of emergency employment (cash/food for work), livelihood diversification and improvement to the social asset base.
- Provisions for livelihood improvements. These include direct provision of essential livelihood assets and the implementation of activities aimed at social, cultural and institutional changes associated with improved livelihoods and poverty reduction, including improvement of economic infrastructure and enhancement of related policies and institutions.

4 OBJECTIVES OF LIVELIHOODS R&R

The ultimate objective of livelihoods recovery and reconstruction is to restore the elements of the SLF through which sustainable livelihoods outcomes can be achieved (productive assets, livelihood strategies, context, institutions and regulations). In this way, the SLF works as an operational umbrella for the planning, coordination and implementation of livelihood recovery interventions. The SLF provides an effective way for organising interrelated actions and sectors towards the rebuilding of livelihoods and strengthening of resilience in the face of new or recurrent hazards and climate risks.

Under the SLF, the livelihoods recovery and reconstruction process could be organised towards:

- Understanding livelihood damages, needs and vulnerabilities in its context.
- Restoring and protecting productive assets.
- Rehabilitating and protecting livelihood strategies and dynamics.
- Enabling institutions, regulations and processes key to livelihood recovery.

5 RE-THINKING LIVELIHOODS R&R

Main trends in the implementation of livelihood recovery initiatives have pointed out some concerns such as:

- Some of the predetermined standard life-saving interventions in disasters have saved lives in the short term but have failed to protect, and at times have even destroyed, livelihood strategies. An example is the relocation of citizens to areas that are not conducive to the livelihoods normally practiced.

- During early recovery, the most frequent livelihood interventions are focused on replacing productive assets (through in-kind distributions or cash transfers) and rehabilitating infrastructure. Food aid and asset replacement are the main funding categories for donors, for which more experience and procedures have been developed. But these only cover one set of conditions of the livelihood framework. In isolation, these initiatives do not facilitate the restoration of livelihood security and productivity, and nor do they strengthen resilience to new and recurrent crises.

- In disasters, focusing solely on the short term is insufficient: disaster-affected populations pursue their own strategies to maximise the trade-off between lives and livelihoods in order to save the most lives over a longer time period, not just in the present. These realities should motivate relief and recovery programmes to prioritise limited resources to foster livelihood resilience and productivity in disaster-affected populations, rather than only focusing on short-term survival and asset restoration.

- The need for the immediate revival of the local economy and market is often unaddressed during early recovery, which leads to a longer and more difficult transition to long-term recovery. In its report released in July 2006, the Tsunami Evaluation Coalition (TEC) underlined the importance of making a rapid shift in post-disaster management from disaster relief to development and livelihood recovery. Though rather obvious in the first months following the tsunami, such a shift was under appreciated by many humanitarian agencies inexperienced at meeting local long-term development and economic recovery needs.

- Emergency responses are usually based on an analysis of the damages and needs of the affected population and its assets, and rarely consider livelihoods before and after the disaster. Furthermore, they do not differentiate between the needs of women, men and specific vulnerable groups.

- Livelihood interventions to address disruptions related to policies, institutions and processes (namely markets, local services and access to natural resources) are not always considered.

- Experience has shown that recovery responses, including responses for livelihood recovery, often have high staff turnover rates. This delays the recovery process and can significantly increase the cost of operations.

- The nexus of housing, resettlement and livelihood recovery is sometimes overlooked. The physical location of settlement and/or resettlement influences the decision-making of disaster-affected community members. Hence, the nexus between housing, (re) resettlement and livelihood recovery needs to be further explored. Without close coordination between housing agencies (or authorities) and livelihood recovery efforts such as skills training and job matching, recovery efforts may be wasted.

- Livelihood recovery is usually oriented to the pre-disaster situation, which often means an effort to restart livelihood ventures with the expectation that households and communities will go back to the activities of the past, even if they place people at greater risk for the next disaster or do not put them in a better situation in terms of poverty reduction.

- Keeping in mind the creation of dependency and the challenges that come along with it, one risk could be a possible lack of ownership. This often results in a lack of maintenance and budgets oversight or even assets that could not be sustained.

- Overall, disaster management strategies have acknowledged the need to address vulnerability and enhance community resilience starting from the recovery phase. However, there appears to be very little focus from

practitioners on addressing the root causes of poverty as a means for risk reduction. Recovery measures are increasingly integrating DRR into livelihood resilience. However, resilient and sustainable livelihoods do not necessarily mean increased productivity or reduced poverty.

6 APPROACH FOR SUSTAINABLE LIVELIHOODS

The new approaches in livelihood recovery demand a more comprehensive strategy that addresses:

- The rehabilitation of livelihood dynamics in which livelihood strategies are employed, beyond restoration of the assets.
- The integration of disaster risk management and promotion of livelihood resilience from the early recovery phase.
- A connection between livelihood promotion strategies and poverty reduction.

To enable an effective, sustainable livelihood recovery response, practitioners, decision-makers and planners may consider activities from three primary sets of actions, all of them essential. These include:

1. Activities for the recovery of SLF components:
· Understanding livelihood damages and needs in their contexts.
· Restoring and protecting productive assets.
· Rehabilitating and protecting livelihood strategies and dynamics.
· Enabling institutions, regulations and processes that are key to livelihood recovery.

2. Activities intended to accomplish other priorities for risk reduction while recovering and rebuilding livelihoods:
· Promoting a culture of safety and resilience among livelihood groups and sectors.
· Assuring livelihood preparedness for timely responses in the face of disasters.

3. Activities to promote the recovery of sustainable livelihoods strategies along with the larger aim of reducing poverty.

RATIONALE TO INTEGRATE DRR INTO THE R&R OF LIVELIHOODS

1 RATIONALE

Many livelihood recovery efforts end with the return to pre-disaster levels of household assets, strategies and entitlements - even if that level of "normality" was a contributing factor of the disaster. This includes, for example, a desperate search for subsistence leading people to livelihoods characterised with unsafe patterns, unsustainable strategies and conflicts over resources.

The recovery and rehabilitation of livelihoods without protection and improvement may serve to reproduce the same conditions of risk that characterised the original disaster and poverty context. The best-designed rehabilitation programmes are those which combine early recovery responses, intended to rebuild lost or damaged productive assets, with an approach that addresses the fundamental natural, social, economic and political causes of vulnerability.

Some other compelling reasons for integrating disaster risk reduction into livelihoods recovery are:

- Livelihoods of vulnerable groups are usually directly dependent on the natural resource base, which is sensitive to episodic and extreme hazards, shocks and creeping climate trends.
- Vulnerable households and communities have very limited capacities to cope. Recurrent exposure to adverse hazards and shocks can weaken that capacity and diminish their livelihood resources.
- The initiatives to recover and strengthen livelihoods can be seriously undermined or can actively contribute to increased vulnerability in the future unless authorities and their partners consider how livelihoods recovery and reconstruction activities can reduce communities' vulnerabilities to disasters and climate risks.

2 OVERVIEW OF MAINSTREAMING DRR INTO LIVELIHOODS R&R

DRR is an approach focusing on mitigating the potential negative impact of hazards and shocks and increasing the capacity of households to cope and recover from them. DRR is about increasing

resilience. Based on this understanding, mainstreaming DRR in livelihood recovery means that all interventions towards the recovery and reconstruction of livelihoods should consider:

- The potential effect of natural hazards and potential recurrent shocks and disasters.
- The impact of the recovery interventions on household and community vulnerability.
- The measures that should be adopted accordingly.

At the operational level, mainstreaming means incorporating these DRR considerations and measures into:

- The analysis of damage to the household livelihood base and analysis of underlying vulnerabilities inherent to the context in which these livelihoods operate.
- The design, implementation and evaluation of individual interventions to recovering productive assets and livelihood strategies.

At the strategic level, mainstreaming means incorporating DRR measures into policies, institutions, budgets and regulations that enable recovery and reconstruction.

3 OBJECTIVES OF MAINSTREAMING DRR INTO LIVELIHOODS R&R

Mainstreaming disaster risk reduction into livelihood recovery will have to be built upon the following objectives:

- Addressing the fundamental natural, social, economic and political causes of vulnerability while recovering and rehabilitating livelihoods.
- Facilitating the resilience of livelihood recovery projects to hazards and shocks.
- Ensuring that project activities in disaster-sensitive areas do not increase the overall risk conditions.

4 GUIDING PRINCIPLES FOR SUSTAINABLE RECOVERY AND RISK MANAGEMENT

It is important to focus on livelihood dynamics (rather than livelihood projects) and on the socio-political structures that underpin long-term commitments to risk reduction, which can help in faciliating genuine transformations.

The fundamental idea is not to take DRR as a new, or stand-alone intervention or outcome in its own right, but to design livelihood recovery initiatives that explicitly aim to reduce vulnerability to external shocks and trends, considering risk reduction at each stage of the project cycle.

5 OUTCOMES OF INTEGRATING DRR INTO LIVELIHOOD R&R

Outcomes of DRR integration into livelihood recovery should be reflected by a households' ability to:

- Cope with and recover from disasters.
- Protect livelihoods from the impact of new hazards, shocks and crises.
- Adapt livelihoods for managing and overcoming climate uncertainty and trends.
- Transform livelihoods towards increased resilience and reduced poverty.

DRR integration will enable more appropriate livelihood recovery interventions that ensure that recovery gains in hazard-prone areas are sustainable and that supported livelihoods become secure and resilient.

SUSTAINABLE RECOVERY AND RISK MANAGEMENT[II*]

Guiding Principles:

- Recovery should be nationally and locally driven.
- Short-term rehabilitation should not be contingent on long-term reconstruction and livelihood packages.
- An adequate balance between top-down and local participation should be sought.
- Cultural diversity and specificities should be respected.
- Equity in access rights and the distribution of productive assets should be sought.
- Monitoring of the recovery process should be transparent and effective.
- Adequate attention should be paid to gender issues.

Cross-cutting issues in moving from post-disaster relief to recovery:

- Protect the most vulnerable.
- Make temporary shelters more livable.

In restoration of livelihoods and upgrading of infrastructure:

- Get people back to sustainable work.
- Restore and upgrade infrastructure and services wherever possible.
- Make recovery inclusive and broad based.
- Secure livelihoods through greater value-addition, including social protection.
- Maximise the use of local procurement in recovery efforts.
- Promote compliance with (inter)national standards for environment, labour, etc.

In prospective risk reduction:

- Aim for a healthy environment for long-term security and sustainability.
- Manage prospective risk for a multi-hazard context.
- Organise communities to respond to emergency situations.
- Provide timely information on risk and early warnings that people understand.
- Keep specific issues with respect to women and children in focus.

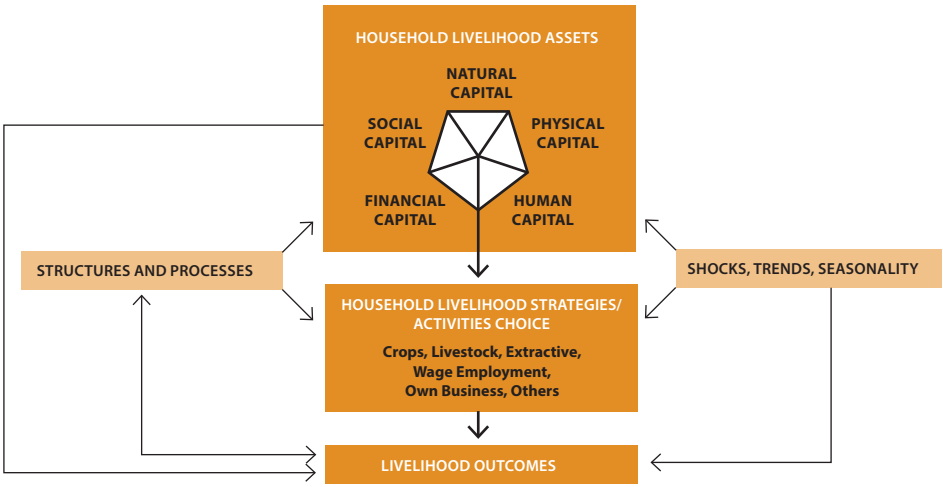
KEY CONSIDERATIONS

1 FRAMEWORK FOR DRR INTEGRATION INTO LIVELIHOOD RECOVERY

The objectives of livelihood recovery are to restore and protect productive assets, to rehabilitate livelihoods strategies, and to enable institutions, regulations and processes key to livelihood recovery. Therefore, integrating DRR into livelihood recovery will mean considering any vulnerabilities when recovering and rebuilding the components of the livelihood framework (SLF), as well as considering any vulnerabilities when undertaking livelihood preparedness and recovery management.

According to the organising framework below, the integration of DRR in livelihoods recovery and reconstruction follows these operational tracts:

1. Understanding livelihoods vulnerabilities when evaluating disaster damages and needs (in its context).
2. Recovering and rebuilding productive assets to be more resilient.
3. Revising livelihoods strategies that are better adapted to manage hazards and overcome shocks and risk trends.
4. Enabling institutions, regulations and processes that facilitate resilient livelihoods.
5. Making the case for disaster awareness and preparedness in all livelihoods recovery initiatives.



2 UNDERSTANDING LIVELIHOOD VULNERABILITIES

Disaster-resilient livelihood recovery initiatives should be informed by livelihood assessments that consider the damage to all components identified in the livelihood framework after a disaster, as well as the risks that threaten the livelihood base in a context of vulnerability. Viewing livelihood recovery assessments through the lens of risk reduction and resilience is crucial for understanding the risks and vulnerabilities that take place in post-disaster environments.

DRR assessments in livelihood recovery should:

- Explore the role of natural hazards and related risk in contributing to livelihood damages and vulnerability in the disaster-affected area.
- Consider disaster risks when analysing possible recovery responses.
- Review existing, related DRR frameworks, policies and plans for improvements.

Components of a Disaster inclusive livelihoods needs assessment:

- **Impact Assessment** of damages and losses in the livelihood base.
- **Risk Assessment** on risks and threats that emerged after a disaster (forecasting how components of the livelihood framework may evolve in potential economic, political and weather scenarios after the disaster).
- **Vulnerability Assessment** on why risks became a disaster and how the current disaster is worsening risk factors.
- **Capacity Assessment** on the available resources that a community has and uses to cope with the adverse effects of current and future disasters.
- **Baseline Analysis** of the situation of risks, vulnerabilities and capacities that affect livelihoods in normal circumstances.

The following points should be taken into account while conducting a livelihood assessment:

- **Linking risks and vulnerability using previous risk assessments and the livelihood options of the affected population**: Analysing of the link between risk and vulnerability can help predict potential threats to livelihoods in the future. It can also provide insight into the stability of livelihoods – whether vulnerability has decreased or increased – in order to formulate appropriate interventions. Risks related to rare or seasonal hazards need to be taken into account and considered carefully.

- **Covering the informal sector**: It is important to cover the informal sector as it is often overlooked. During the flood crisis in Thailand in 2011, the ILO estimated that informal sector damages were twice as big as formal sector damages.

- **Structuring the right questions**: It is essential that data comes from various levels[1] – national, district/province, local, community, intra-community gender groups and households. Questions must be tailored to suit the different respondents since each has a differing viewpoint on aspects of the disaster sequence and livelihood framework. Sample questions for reference are provided in the box on page 28.

- **Collection of additional data. Additional data may include:**
  · *DRR organisations in the area and their ongoing or completed activities*. Gathering information on their existing policies and programmes and their impacts on local livelihoods is important. It will help to identify poor-performing organization and required support. This basic information could also inform mutually beneficial collaborations.
  · *The degree of dependency of the locals on their surrounding environment*. The rate with which natural resources are being depleted by local livelihood operations gives an idea of what kind of, and how much, environmental preservation work is required to keep livelihoods sustainable in the future. This is particularly important because disasters heavily affect natural assets like land, forests, water and air quality. For example, floods that destroy agricultural land and fires that destroy forests both have direct impacts on the livelihoods of communities.

1 Information can be collected at different levels. At the national level – background information on crisis, overall geographical area(s) being affected and level of damages (including impact in livelihood activities). At the district/province level - impacts of disasters on different institutions/organisations serving the communities and the disaster impacts on livelihood specific to the areas and the impacts on local labour markets. At the market level- demand and cost for basic commodities (any increase in prices) and the impacts of disaster on small and medium local businesses. At the community level – detailed information on livelihoods (gender segregated, also ethnicity based income generating activities), high priority needs and gender segregated data at the gender focused group discussion. At the household level – household assets, coping strategies and priorities/ needs.

· *Existing sources of income-generating activities within families*. At the household level, several diverse sources of income may exist, and it is important to understand the balance and trade-offs between them. Assessments should recognise this complexity, and identify and analyse the interdependencies involved.[iii]

- **Involvement of the affected community in the assessment exercise**: Community participation in the assessment should be encouraged not only as audience but as representatives (from committees or local youth groups) of the assessment team. This will help local populations to understand the overall needs of the community and of different social groups.

- **Promoting the participation of the most vulnerable groups in the community**: Direct engagement of the most vulnerable groups (women, children, the elderly, people with disabilities and minorities) will highlight their specific needs. Because of precarious living conditions or unstable livelihoods, disasters could impact such vulnerable groups disproportionately severly, and thus they require specific measures to address their needs. The impacts of the disaster can be different in different groups. By having a record of the needs of these groups, national and international stakeholders can make more informed decisions.

- **Establishment of a multi-sectoral livelihood assessment team**: It is realistic to accept that diverse groups with varied interests and agendas may conduct their own livelihood assessments with specific foci. Nevertheless, ideally, an official body should take the lead, preferably a task force constituted by representatives from livelihood, development and DRR sectors. Representatives can range from government authorities (most importantly of the affected areas), relevant ministries (agriculture, labour, fishery, development, tourism, social welfare, etc.), NGOs, civil society organizations (CSOs), UN agencies, community-based organizations (CBOs), research and academic institutions, and trade and labour unions.

SAMPLE QUESTIONS FOR FIELD SURVEYS[IV]

IMPACT OF DISASTER ON LOCAL LIVELIHOODS – OVERVIEW

- What has been the general impact of the disaster on different aspects of the local economy?
- How many or what proportion of shops or businesses have closed or collapsed?
- How many, or to what extent, have farms or crops been flooded or otherwise damaged?
- What is the damage to fisheries? How have fishermen and their families been affected?
- Has livestock been killed by the disaster?
- Has the disaster damaged roads used to carry local produce to the market?
- Are communal marketplaces, slaughterhouses, silos or other common facilities damaged or collapsed?
- Are local transportation services working?
- Are there differences between men and women in terms of making a living?
  · If so, what are the differences?
- What does this impact mean in terms of livelihood outcomes such as food security, ability to send children to school, ability to afford health care, etc.?
- Which groups have been most affected and why? Were groups disproportionately affected by:
  · geographical location?
  · gender in general and by gender of household head?
  · trade or occupation?
  · wealth or socio-economic status?
  · age (young children, elderly)?
  · other factors (disabilities, ethnicities, etc.)?

IMPACT OF DISASTER ON LOCAL LIVELIHOODS – HOUSEHOLD LEVEL

- What is the expected impact on harvest of different crops (if disaster strikes prior to harvest) and why?
- What is the land tenure status (ownership, rental, share arrangements, etc.)?
- Have livestock holdings been affected by the disaster? Was there any loss of animals?
  · Is the shed/stall still standing? · Is fodder still accessible?
- What was the impact of the disaster on equipment, fish stocks, access to market, prices, expected incomes?
- What sort of casual labour work is carried out by each household member?
- Where do they do this work (do they migrate)? Who employs them?
- Which months of the year was work available, and how much are they paid?
- Has this work been affected by the disaster? If so, how?
- Are any household members employed formally?
  · Has this work been affected by the disaster? If so, how?
- Are there any relatives or family members who live elsewhere (including overseas) and send back money? · Has this been affected by the disaster, if so, how?

- What sort of commercial or industrial activity was owned or practiced by household members before the disaster? Has this work/source of income been affected by the disaster? If so, how? What would be needed to restore this source of income?
- Have pensions or social welfare payments been affected by the disaster? If so, how?

COPING STRATEGIES

- What coping mechanisms and livelihood strategies have different people/households developed and how effective are they?
- What are people doing already?
- How many people have left the area? How many are likely to do so soon?
- What is the likelihood of people over-exploiting natural resource in order to survive and why (e.g. cutting down trees to get wood)?.
Is there any evidence to suggest that this is already happening?
- Is it likely that people will liquidate their assets (livestock, jewellery, other assets) in order to cope? Which will be liquidated first? Is there any evidence that this is already happening?
- Is it likely that people may have to reduce food intake now or in the future as a result of the event(s), and why? Is there any evidence that this is already happening?

LIVELIHOOD PROTECTION AND RECOVERY RESPONSE

- What are the opportunities and capacities for vulnerability-reducing livelihood recovery within the local economy ('building back better')?
- What skills do people possess (farming, carpentry, teaching, etc.)?
- What types of activities are needed for vulnerability-reducing livelihood recovery of different people, households and communities?
- What are the initial priorities to preserve and support livelihoods?
- What can be expected from governmental and non-governmental agencies operating in the area?
- What is the feasibility of using labour-based methods for works like rubble removal, road repair, house construction, etc.? Can labour, materials and services be sourced locally? What is the availability of unskilled and skilled workers? Should payment be made in cash, in kind or both, and why?
- What changes are required for the long-term recovery of affected populations? How can affected populations be better prepared to similar events in future? How do we "build back better"?

3 RESTORING AND REBUILDING PRODUCTIVE ASSETS

When integrating DRR into the recovery process of the productive assets (as stated in the SLF), it is important to:

1. Ensure the sustainability of natural resources integral to livelihoods.
2. Recover and rebuild disaster-resilient infrastructure key to livelihood activities.
3. Enable access to financial resources.
4. Rehabilitate social capital towards making livelihoods more resilient.

Ensure the sustainability of natural resources integral to sustainable livelihoods

Given the strong inter-connectedness of natural resources, natural hazards and livelihood security, it is necessary to address the underlying drivers of risk and vulnerability by integrating sustainable environmental and natural resource management practices into DRR efforts during the livelihood recovery phase. In most developing economies, livelihoods are dependent on natural resources, whether in the form of an individual property resource like farming or through common property resources such as fishing or foraging. The vulnerabilities of these natural resources to natural hazards coupled with their vulnerabilities to anthropogenic risks of over-extraction and poor management demand protective mechanisms that can safeguard against these risks and support the sustainability of livelihoods.

Ensure that the nature and scale of demand placed on the natural resource is in keeping with the natural regeneration potential of the resource, and does not have an adverse impact on other natural resources

Faced with the urgency to restore livelihoods, interventions are sometimes planned with limited understanding of the environmental context or, more dangerously, on false assumptions concerning this context. Giving more people tools to access a resource may result in an immediate rise in income levels, but it may not be sustainable if the resource itself is limited. For example an agrarian approach, where every additional acre of land cultivated translates into increased income,

is potentially harmful to adopt in the fishing sector, where marine resources are limited and need time to regenerate. An unplanned and overly generous supply of boats may show short-term gains, but may create irrevocable damage in the long term through over-extraction.

Similarly, the introduction of high value crops that require large quantities of ground water for irrigation may result in the depletion of ground water sources or the ingress of saline water, irreparably destroying the water table.

Elements of risk reduction include:

1. Policies that will protect and enhance the regeneration potential of natural resources such as the Forest Protection Act, Ground Water Policy, FAO Guidelines for Responsible Norms for Total Allowable Catch and Water Resource Management Act.

2. Interventions that will support and enhance the regeneration potential of the resource include:

a. Zoning for effective land use planning and protection of forests, ecologically fragile areas and cultivable land.
b. Ensuring that inherent risks of flooding, salination etc. are minimised through structural and non-structural means.
c. Promoting the use of water management systems that effectively promote water storage, conservation and replenishment practices.
d. Introducing water-saving agricultural practices, e.g. drip-irrigation.
e. Promoting crop management practices based on identified water potential and soil quality.
f. Auditing new disaster interventions and activities to ensure they do not bring in new vulnerabilities.

For strategies specially for marine-based rescources, it is important to:

a. Ensure disciplined fishing, including a ban on fishing during breeding cycles.
b. Promote safe fishing practices that do not damage fish resources.
c. (If aquaculture is being promoted) Take adequate measures to ensure that the water table or adjoining lands are not polluted, and ensuring natural drainage mechanisms are not affected.
d. Promote allied income-generating activities that will reduce the pressure on fish resources, such as crab and lobster fattening.

Who should be involved?

a. Communities and/or community-based organisations. They are integral to the planning and implementation of these interventions as they have long-term stakes, an acute understanding of the area and indigenous knowledge.
b. Local-level departments for technical support.
c. Administrators for relevant policy formulation.

A. Recovering and rebuilding disaster-resilient infrastructure key to livelihood activities

Infrastructures, services and facilities relevant to the function of livelihood activities are considered critical since they can provide livelihood support functions and restore resilience. It is imperative to mainstream DRR measures into the rebuilding of those structures after a disaster.

> The urgency in rebuilding critical infrastructure may fail to take into account the pre-disaster risks and vulnerabilities that led to or exacerbated the disaster, and may bring new vulnerabilities.

This infrastructure includes:

· Procurement Units · Storage Units · Processing Units
· Markets · Roads · Transportation
· Communication Facilities

Elements for integrating risk reduction:

The risk reduction interventions associated with the infrastructure component of the SLF can be categorised into structural and non-structural.

Structural interventions:

a. Ensuring that construction is disaster-proof in terms of design, technology, material and quality.
b. While the sites selected for critical infrastructure are crucial in terms of logistics, the safety features of the sites also need to be ensured in terms of load-bearing capacity, acceptable elevation, etc. If the site must be located in a disaster-prone area, adequate care has to be taken to ensure that the structural safeguards are strictly followed.
c. New infrastructure should not lead to further vulnerabilities. For example, elevated roads can lead to flooding, and a processing unit can lead to the contamination of water sources.

Non-structural interventions:

a. Formulate, promote and periodically review appropriate building codes and construction standards that integrate hazard-resistant considerations.
b. Build the capacities of local government officials to supervise, execute controls and ensure building codes and standards compliance.
c. Implement training and certification programmes based on codes and standards for those involved in the construction process (masons, contractors, etc.).
d. Identify zones for effective land use planning.
e. Plan and prepare alternative arrangements for services and infrastructure during emergencies (such as alternative structures for the immediate resumption of functions, especially for markets and financial services).
f. Plan and prepare provisions that would permit expansion of services when an emergency situation arrives (such as storage of goods, coverage of the newly displaced population and animal housing).
g. Make an accurate inventory and map of local-level infrastructure, including assessments of its conditions and any available resources.

RISK TRANSFER INSTRUMENTS

Risk transfer instruments are instruments through which risk is ceded to a third party. Examples include traditional insurance and reinsurance, parametric insurance (where insurance payouts are triggered by pre-defined parameters such as the wind-speed of a hurricane), and Alternative Risk Transfer (ART) instruments such as catastrophe (CAT) bonds (see, for example, Caballero 2003; Freeman, Keen and Mani 2003; Gurenko and Lester 2004; Hofman and Brukoff 2006).

Catastrophe (CAT) bonds?

CAT bonds are part of a broader class of assets known as event-linked bonds, which trigger payments on the occurrence of a specified event. Most event-linked bonds issued to date have been linked to catastrophes such as hurricanes and earthquakes, although such bonds also have been issued in response to mortality events. Capital raised by issuing the bond is invested in safe securities such as treasury bonds, which are held by a special purpose vehicle (SPV). The bond issuer holds a call option on the principal in the SPV with triggers spelled out in a bond contract. Those can be expressed in terms of the issuer's losses from a predefined catastrophic event, by hazard event characteristics, or by hazard event location. If the defined catastrophic event occurs, the bond issuer can withdraw funds from the SPV to pay claims, and part or all of interest and principal payments are forgiven.

If the defined catastrophic event does not occur, the investors receive their principal plus interest equal to the risk-free rate, for example set to the London Inter-Bank Offered Rate (LIBOR), plus a spread above LIBOR. The typical maturity of a CAT bonds is 1–5 years, with an average maturity of 3 years. The CAT bond market grew steadily since its creation in the mid 1990s until 2008. As a consequence of the 2008 financial crisis, the market stopped issuing CAT bonds in the third and fourth quarters of 2008.

Development Policy Loan (DPL) with CAT Deferred Drawdown Option (DDO)

The Development Policy Loan (DPL) with Catastrophe Risk Deferred Drawdown Option, DPL with CAT DDO, is a financial instrument that offers IBRD-eligible countries immediate liquidity of up to US$500 million or 0.25 percent of GDP (whichever is less) in the case of a natural disaster (per World Bank Operational Policy/Bank Policy 8.60). The instrument was designed by the World Bank to provide affected countries with bridge financing while other sources of funding are being mobilised.

The CAT DDO was first created to encourage investment in risk reduction. Indeed, to have access to this contingent credit, countries must show that they have engaged in a comprehensive disaster management program. As such, the DPL with CAT DDO is the first financial instrument offered by the donor community that aims at addressing the problem of moral hazard in donor funding for disaster recovery.

Caribbean Catastrophe Risk Insurance Facility (CCRIF)

The World Bank recently assisted CARICOM in establishing the Caribbean Catastrophe Risk Insurance Facility (CCRIF), a joint reserve facility that offers liquidity coverage, akin to business interruption insurance, to 16 Caribbean countries exposed to earthquakes and hurricanes.

The CCRIF was capitalised with support from participating countries and donor partners. It combines the benefits of pooled reserves with the capacity of the international financial markets. To do so, it retains the first loss through its own reserves while transferring excess risk to the international capital markets.

The CCRIF became operational on June 1, 2007, and has reserves of over US$90 million and reinsurance of US$110 million. This provides the CCRIF with US$200 million of risk capital at very competitive rates. The reinsurance strategy of the CCRIF is designed to sustain a series of major natural disaster events (each with a probability of occurrence lower than 0.1 percent), achieving a higher level of resilience than international standards.

Drawing on the lessons of the CCRIF, the Pacific Island states are exploring the creation of the Pacific Disaster Reserve Fund, a joint reserve mechanism against natural disasters for the Pacific Island countries.

B. DRR in rebuilding and strengthening financial services

Financial service providers are essential in the relief and recovery responses. The main aim of financial services is to give the disaster-affected population access to the cash that will allow it to invest in ways to support livelihoods. The majority of these services (specifically those that manage credit) differ from the usual cash-transferring programmes in that beneficiaries are expected to pay the funds back. There is also an expectation of sustainability of the service providers.

Facilitating the efficiency of financial services includes providing support for those affected by disasters to access the services, but it also includes providing mitigation measures to protect financial services themselves and to make them more resilient, functional and self-sustaining after such events. Some of these measures can even support the utilisation of the money delivered to disaster-affected people by developing further risk-reduction strategies for livelihood security.

Ability of affected governments to ensure adequate financial resources

Limited capacities of affected governments to respond effectively to the financial requirements of their communities, especially in developing or under-developed countries, can seriously limit the recovery process. This can lead to further degradation in the living conditions of an already vulnerable population. While support from other countries and humanitarian agencies may be forthcoming, governments will also need to explore other ways to ensure such requirements are met.

Some basic risk reduction considerations to be integrated into livelihood recovery responses related to financial services include:

1. Securing contingency funds for official financial services so they remain solvent and can meet the demands for loans immediately after a disaster.
2. Ensuring risk transfer mechanisms are in place at the individual level and at state and country levels through innovative and forward-looking mechanisms.

A paucity of service providers in the aftermath of a disaster can make funds inaccessible to the affected communities
Service providers may find it difficult to cope with a sudden escalation of disaster requirements while already coping with disrupted networks, losses, damages to their own systems and lack of adequate staff. However, disaster-affected communities will require immediate services with the least possible disruption to their already shattered lives. As access to financial services are of the utmost priority, serious consideration will have to be given to build risk reduction elements into such services that can ensure their robustness and resilience.

Some risk reduction strategies to consider can include:

- Facilitating the disbursal of funds through CBOs like Self Help Groups (SHGs), as was done in post-tsunami Tamil Nadu.
- Facilitating the non-formal safety net mechanisms for those not included in the formal social security system, e.g. micro-insurance schemes run by community groups and women's organizations.
- Encouraging and supporting official and private financial service providers to be prepared for disasters through developing disaster management plans that ensure the survival and sustainable delivery of their services.
- Encouraging the saving of portions of money from collective community block grants or savings groups for building contingency funds that can be used by communities for livelihoods reconstruction after a disaster.
- Supporting and supervising secure infrastructure for offices of financial services, using disaster-resistant standards and ensuring that all records are adequately backed up at off-site locations.
- Encouraging use of IT services for quick transfers of funds to individual beneficiaries' bank accounts.
- Considering conditional (cash) grants when microcredit is either not feasible or not desirable. However, one needs to ensure that such cash grants do not undermine a repayment culture where people cannot, or have too many incentives not to repay.

C. Rehabilitating social capital towards resilient livelihoods

In the SLF, social capital refers to organisations of households or producers, including informal networks, formalised groups, cooperatives and socio-economic relationships that facilitate cooperation in productive activities.

In livelihoods recovery, social organisation is key for the collective management of recovery resources and opportunities. When mainstreaming DRR into recovery process, social capital is also important for the collective management and distribution of risks and for contingency planning among members of livelihood groups.

Central to the mainstreaming of DRR into livelihoods recovery is encouraging the participation of producers from different livelihoods groups in the structure and work of local organisations and institutions who are actively involved in disaster risk management. This participation will strengthen the voice of different livelihoods groups in these platforms for DRR, as well as their respective regulations, budgets and work plans. In turn this will give greater visibility to the livelihoods groups vulnerabilities and needs of livelihood groups in the agenda of local DRR bodies.

Ensuring identified and legitimate spaces for community-based organisations in the dialogue of disaster resilient recovery and reconstruction strategy

While most recovery strategies promote and practice community participation, communities and CBOs have never been acknowledged as formal partners in the planning process. This limits their level of involvement to information providers. However, it would be worthwhile to recognise that communities are the final stakeholders and their say in decisions that will affect their lives will be the cornerstone for interventions. A lack of their involvement may result in that utility not being used, but more importantly it in core issues going unsolved and communities being worse off than they were pre-disaster.

Risk reduction interventions here should look at:

a. Policies that legitimise and provide spaces for community voices in the planning and implementation process.
b. The formation of new or strengthening of existing CBOs, ensuring that common interest groups and groups are formed for people with special needs such as those with disabilities, the elderly and women.

Building up awareness and understanding of DRR and recovery in the larger developmental context to help CBOs participate more actively in the planning and implementation processes

While communities may be well aware of the issues and problems within their own sphere of life, they may not be very conversant with the conceptual framework of recovery and reconstruction or DRR, or even the inter-connectedness of various facets of vulnerability in the larger context of development. If communities are to manage investments made in the course of recovery and reconstruction, they need to be aware of these issues and the roles that they are required to play in safeguarding and promoting their own livelihoods in this context. Ignorance of these issues will lead not only to sub-optimal utilisation of the resources and assets created, but may also result in them taking up activities which may increase their own vulnerabilities or of those in other sectors.

Interventions to prevent this may look at:

a. Building awareness and capacities of the CBOs in DRR and recovery processes and in the broader context of development.
b. Enhancing CBOs involvement by engaging them in tracking issues and impacts of climate change on their livelihoods, and adapting to emerging challenges.

Making CBOs active partners in the process of recovery for sustainable and disaster-resilient livelihoods

An active partnership with decentralised CBOs is the only way to meet complex and challenging issues that tax available resources. The increasing frequency and complexities of natural hazards in highly vulnerable areas such as coastal and highland districts are already streching the capacities of governments which, despite intentions to inculcate a culture of disaster preparedness are busy responding to, ongoing disasters. CBOs are best placed to detect micro-level risks and vulnerabilities and also to rectify them. Water user associations can manage village-level repairs and maintenance of surface water systems within their own area, given adequate technical and financial support. Joint liability groups in forestry programmes can safeguard their own portion of the protected forest area and ensure that all activities take place as planned. They can also study the effectiveness of interventions.

Interventions may look at:

a. The formation of common interest groups for the protection and conservation of natural resources.
b. The policies that will legitimise their partnership and their contribution.
c. Technical and financial resources or payments for services provided to the government.
d. Giving CBOs capacity to support the government in services such as census-taking, repairs and maintenance of common property resources, mapping of skills and other local resources, tracking and monitoring of recovery indicators for various line departments, and identifying beneficiaries for social protection schemes run by the government.

4 DRR CONSIDERATIONS IN LIVELIHOOD FUNDS

Reactivating the local economy is critical to livelihood recovery. However, this can only be achieved if there is a flow of funds within the system. Normal recovery practices to infuse sufficient funds into the local economy, which ensure that affected communities have sufficient incomes to meet their basic requirements, include "cash for work" programmes in the immediate aftermath of a disaster, and creation of interim job opportunities or alternate livelihoods until traditional livelihoods are resumed, or alternate livelihoods have stabilised enough to become the major source of income.

Infusion of funds into CBOs like SHGs for promoting local entrepreneurship needs adequate safeguards

Promotion of local entrepreneurship as a means of improving livelihoods has often been tried as a recovery strategy. However, building up a business is not merely about products and access to capital; it requires aptitude and is contingent on the availability of raw materials and adequate processing, packing and transportation facilities and access to remunerative markets. Low-investment, low-risk interventions frequently bring in low returns. Unless all systems are in place, the new entrepreneur is bound to fail, leading to a fresh debt cycle. On a larger scale, this also represents a loss of investment, capital and assets.

Risk-reduction interventions for fund dispersal can include:

a. Market and value-chain analysis to identify niches available for such interventions.
b. The development of feasible business plans, in line with the skills and capacities of the beneficiaries.
c. Building the capacities of CBOs, as well as individuals, to handle business.
d. Strong linkages for technical support and market development.
e. Risk transfer mechanisms to ensure that losses due to natural or other factors are covered.
f. Auditing and mitigating measures to ensure that businesses do not create new risks to the environment or other sectors.

Who should be involved:

1. CBOs and the communities who will be able to identify businesses and markets and develop the business plans.
2. Local departments.

A "Creation of Jobs" approach should respect the local recovery and reconstruction activities and needs

Recovery and reconstruction programmes will require a lot of labour. Some of the requirements will be skill-based or will require training. For example, the mass construction of safe shelters will require those experienced in construction but knowledge in the safety measures must also be considered. It is likely that the urgent need for action in the recovery and reconstruction processes, will require expertise to be brought into the affected area from outside. Thus, opportunity of livelihoods and transfer of knowledge and skill to locals may be missed. It is important to have a fine balance between bringing external necessary expertise and transfer of expertise to locals through engagement and capacity building.

Risk reduction interventions can consider:

1. Promoting local and trained human resources for construction work.
    a. The Post Disaster Needs Assessment (PDNA)[2], which will also has information on pre-disaster occupations and maps the different skills available within the affected regions and communities.
    b. The Recovery and Reconstruction Policy, Recovery Framework[3] and post-disaster labour requirements.
    c. Offer certificate courses and training programmes in disaster resilient construction that can effectively utilise the local human resources.
    d. Developing the concept of a "labour net" that can effectively coordinate between the supply side and the demand side.
    e. Ensuring that the locals have the knowledge and skills to deal with infrastructure repairs and maintenance in the coming years.
    f. Ensuring that the affected government has policies in place that encourage the use of locally trained and certified construction workers for mass housing programmes.

2. Promoting utilisation of locally available/manufactured construction material.

a. Identifying CBOs such as Self Help Groups, with access to raw materials, who can manufacture of construction materials like pre-fabricated bricks, slabs, etc., locally.
b. Training CBOs manufacturing building material, and supporting them with resources for setting up manufacturing units.
c. Building up a network of such CBOs for ensuring adequate supply of building material.
d. Linking them up with the NGOs/Government Agencies/ Contractors and others involved in mass housing programmes.
e. Ensuring that agencies involved in mass housing programmes are incentivised, e.g. through tax deductions for sourcing construction material from these local CBOs – provided the quality is similar to products available in the open market.

Who should be involved:

a. The local communities of the affected region.
b. Labour unions, local employers' organisation and other related CBOs.
c. Line departments, architects, engineers and contractors.

Ensuring that those most vulnerable are protected during the recovery period with adequate social security mechanisms

In an attempt to reach out to as many people as possible, recovery mechanisms are generally directed at the larger community. This approach tends to ignore the needs of vulnerable and minority communities that require special care and attention. It is essential that vulnerable groups are included and protected through robust social security mechanisms.

Risk reduction interventions for vulnerable groups may look at:

a. Policies for financial support and access to capital for special needs groups to promote recovery of their livelihoods during recovery and reconstruction.
b. Mapping special needs groups, their damages, losses, skills and capacities.
c. Creating of easy access points such as a "single-window system" where people can easily access entitlements, benefits and other support.

d. Access to financial and technical support for recovery of livelihoods through formulation of special schemes.
e. Formation of CBOs of special needs groups to facilitate collective strength and empowerment, and identify systematic approaches for building capacities.

Asset-based Livelihood Restoration

The most commonly-followed practice after a disaster is the restoration of assets that can support the immediate resumption of livelihood activities. However, only those who owned assets are eligible for such support. This approach fails to meet the needs of affected families without assets, including those involved in wage labour, contract labour or those in the unorganised sectors of petty trade, small businesses and the like. The number of people who might be excluded from such asset-based livelihood recovery packages can be numerous and are likely to be from the socio-economically marginalised strata of society. Relief compensation might not be consistent with the ability of the lower strata of society to resume income-generating activities. This pushes excluded families into debt traps, which are extremely difficult to break out from, leading to further vulnerabilities.

All livelihood recovery programmes need to recognise this danger and plan interventions that will support the asset-less in the recovery process.

Some of the initiatives to minimise risks could be:

a. Livelihood mapping that will take into consideration all occupations, seasonal and perennial, and separately map the occupations of men, women, the elderly and people with disabilities.
b. Promote livelihood support packages that will include all the above groups identified.
c. Advocating appropriate policies that will ensure recovery support and access to financial support mechanisms to all groups including those with special needs and the asset-less.

Realistic estimation of time frame ensures a holistic approach
Planning and rebuilding sustainable infrastructure requires time, which is usually in short supply. The pressure on governments to prove its intentions to rebuild, as well as on donors and NGOs to show proof of activities on the ground, frequently leads to ad-hoc planning, poor budgeting, and unrealistic estimations of the time required to create a holistic strategy that recovery and sustainability. Unreasonable time frames create new risks and vulnerabilities.

Risk reduction interventions for time frames can look at:

a. The development of a holistic recovery and reconstruction framework that will support the reduction of pre-disaster risks and vulnerabilities as well as negate or mitigate new risks and vulnerabilities, with realistic time estimates and budgeting.
b. Policies and reforms to support such interventions.
c. Partnerships with communities, humanitarian agencies, line departments and other technical, research or corporate institutions from the planning stage to ensure involvement and participation for the duration of the project.

Life-saving interventions can fail to protect or promote livelihoods
The immediate response in the aftermath of a disaster is to relocate the communities from their risk-prone habitations. After the 2004 Indian Ocean tsunami, governments of the affected countries devised shelter strategies to move communities away from the coast. Such a move would have adversely affected the livelihoods of the fishing communities who need the ocean. Vendors in the fishing communities, who could previously see boats coming in and could conduct business fairly quickly now had to spend a lot more time at the beach after relocation waiting for the boats. This unproductive time only put further pressure on vendors' workloads. Similarly, after the Kosi floods, people were moved away from their habitations by the river where they had their cultivations.

Such relocations lead to an erosion of stable livelihoods and forced people to either continue on with their former livelihoods under sub-optimal conditions, or migrate in search of alternative employment. Both options resulted in a degradation of quality of life and added to vulnerability.

Risk reduction interventions for relocation should consider:

a. Technical interventions that provide security against high-frequency, low-risk hazards, such as elevating land for construction in areas prone to flooding, and pile foundations in areas where soil erosions are possible.
b. Installing early warning systems.
c. Providing a common shelter that is safe and secure, easily accessible in times of need and able to accommodate vulnerable communities.
d. In places where relocation is the only option, easy access to workplaces as well as safe spaces for assets and tools should be made available at the new site. For example, in Tamil Nadu after the 2004 Indian Ocean tsunami, when a fishing community had to be relocated due to lack of space, the administration agreed to support digging a canal from the sea to the new location so people could safely dock their boats.

Who should be involved:

1. The affected communities should be involved in assessing risks and finding workable solutions.
2. Line departments and institutions and individuals who can provide technically sound solutions and suggestions.

5 ENABLING INSTITUTIONS, REGULATIONS AND PROCESSES

Livelihood recovery and reconstruction will be affected by the environment created by social, economic and political institutions at all levels. Depending on the regulation of space where they interact and the decisions they can make, these institutions can facilitate or obstruct the recovery processes and access to essential livelihood assets. The term "governance," at its core, is about this set of stakeholders (government, private enterprise, unions, cooperatives, financial institutions and civil society groups) and their coordination.

Coordination and networking for synergic responses

While the government is a major actor, it is not the sole party influencing decisions or implementation. Other actors in livelihood recovery governance may include market actors, private enterprise, unions, cooperatives, financial institutions and civil society groups. Within the livelihood recovery context, governance is the overall process by which these actors

a. determine what is to be done, how it is to be done, and who is to benefit and
b. apply themselves to implementing these decisions.

The process of partnering with, organising, coordinating and facilitating these recovery actors is a paramount function of central and local government units, and requires active commitment and leadership by sectoral ministries and local government bodies. In many cases, a comprehensive recovery and DRR measure takes a long time to fully implement, and the leadership of government bodies is crucial to ensure political and operational continuity and support from external stakeholders throughout the process.

Risk reduction strategies to ensure synergic partnerships can include: partnerships to integrate DRR into the livelihood recovery process. In livelihoods recovery programming, some key partnerships may include those between local administrations and communities for designing and

following-up on community recovery plans; between local government units and the private sector for public infrastructure development (e.g. irrigation systems, infrastructure, communications); and between civil society groups or local government units and international agencies for managing recovery initiatives.

Revisiting policies and practices to ensure that they are not contributing to vulnerabilities

While there is usually an evaluation of the strategies and activities that could have led to the creation of vulnerabilities, often such policies are not changed. The policy itself may not be the issue, but the lack of its effective implementation and compliance may be. If a policy on the compensation of a damaged house specifies that only "genuine" beneficiaries will be compensated, and title deeds are unavailable because either the land was previously encroached upon or lost during the disaster, the approach adds to the problem. Likewise, policies on safe construction practices would be ineffective if compliance measures were not monitored.

Such approaches must be addressed, otherwise they can lead to further vulnerabilities. These issues can be addressed:

a. At the village level, where community-based task forces can ensure monitoring and audits are conducted for ongoing recovery and reconstruction activities.
b. By CBOs helping beneficiary identification, disbursal of relief and compensation packages, etc.
c. Through policies being socialised in the vernacular and made available to the affected communities, who can make informed decisions and choices.
d. Through platforms where communities can respond to policies, considering the impact on the specific sector and related sectors.

Creation of policies which promote an enabling environment for smooth adoption of recovery and reconstruction programmes

While timely and appropriate recovery and reconstruction programmes and plans can be developed by local and international partners, they will not be viable or fully adopted unless they are backed by relevant policies from the affected government. It is necessary for appropriate policies to be put in place to create an enabling environment for the adoption of Recovery and Reconstruction plans, as well as to prevent the creation of further vulnerabilities. For example, introducing trainings on the construction of building materials to certain CBOs might rob local manufacturers of their employees, or a policy which only involves construction workers who have undergone special training in disaster resilient, eco-friendly construction should not adversely impact other construction workers. All construction workers should have equal access to undergo specialised training for better jobs.

Some examples of policies that would ensure risk reduction in sustainable livelihoods could include:

a. Immediate repairs and maintenance/upgrading of all infrastructure that promotes resumption of sustainable livelihoods.
b. Policies that promote investments in asset creation and that will enhance or add value to livelihoods, like agro-processing units, storage units, cold chain, etc.
c. Policies that promote resilient livelihoods through better access to financial tools, risk transfer mechanisms, technology transfer, research and development, knowledge management, etc.
d. Policies that promote small and medium scale enterprises which utilise local resources, including labour and material.
e. Policies that safeguard the community's access to and control over local resources on which communities are dependant for their livelihoods.
f. Policies that support sustainable recovery, as well as unorganised petty traders and groups with special needs.

6 MAKING COMMUNITIES DISASTER RESILIENT

A disaster-resilient community possesses a high awareness of DRR and has the confidence and ability to demand that decision-makers create a safer environment to live and work. It is conscious of the risks and vulnerabilities surrounding it as well as its own capacity.

The most efficient way to raise awareness in a community is to invest in education aimed at all segments of society and make it an integral part of the community's everyday life. Building a culture of safety will save lives, uphold people's rights and entitlements, and help communities move towards a more socially and economically progressive society.

KEY CHARACTERISTICS OF A DISASTER-RESILIENT COMMUNITY[V]

- High level of understanding of DRR, climate change and environmental conservation.
- Community early warning system in place.
- Valuable, trained manpower already present in the community – (people can plan and implement DRR programs) and regular additional trainings taking place.
- Existence of disaster-resilient local physical infrastructure that is well maintained.
- Linkages with local government authorities and influence in local level sustainable development programming and implementation.
- Stable and diverse sources of livelihoods.
- Fewer people engaged in unsafe livelihood activities or hazard-vulnerable activities (e.g. less rain-fed agriculture practices in drought-prone locations).
- Effective and accountable community leadership.
- The capacity to plan for local DRR priorities and actions.
- Knowledge of when and where to find information and resources (lobbying for external assistance) to reduce community vulnerability to natural hazards.
- Understanding of relevant legislation, regulations and procedures as well as their own rights and obligations with regard to minimising future risks.
- Seeing DRR as an integral part of achieving wider community development goals.
- Established and strong partnerships between local stakeholder groups and other entities (NGOs, CBOs, government institutions and private businesses).
- High levels of volunteerism.
- The skills to carry out community-level hazard, risk and vulnerability assessments with minimal or no external support.

REFERENCES

ADPC/USAID, *Mainstreaming Disaster Risk Reduction,* The Urban Governance and Community Resilience Guides, 2010.
Bailey S., *Cash transfers for Disaster Risk Reduction in Niger: A Feasibility Study,* HPG, Overseas Development Institute, London. 2008.
CARE, *Climate Vulnerability and Capacity Analysis*, 2009.
CICG, *Proceedings of the Third Session of the Global Platform for Disaster Risk Reduction and World Reconstruction Conference. Thematic Session # 12: "Reviving of livelihoods and Local Economy,* CICG, Geneva, Switzerland, 2011.
Christoplos I, et al., *Learning from Recovery after Hurricane Mitch: Experience from Nicaragua,* 2009.
DFID, *SUSTAINABLE LIVELIHOODS GUIDANCE SHEETS*, UK, 1999.
Dhruba Raj Gautam, *Community Based Disaster Risk Reduction,* MercyCorp, Contribution to the Hyogo Framework of Action. Kailali Disaster Risk Reduction Initiative, Nepal, 2009.
Enarson E., *Gendering Disaster Risk Reduction: The Hyogo Framework for Action,* Australasian Natural Hazards Conference, 2007.
FAO, *Evaluation of the FAO Response to the Pakistan Earthquake May–July 2008,* 2009.
FAO, *Resilient Livelihoods – Disaster Risk Reduction for Food and Nutrition Security Framework Programme,* 2011.
Gelsdorf K., *Global Challenges and their Impact on International Humanitarian Action,* UN Office for the Coordination of Humanitarian Affairs (OCHA). Occasional Policy Briefing Series, No. 1, 2010.
Government of Myanmar, *Guidance on Mainstreaming Disaster Risk Reduction in the Health Sector, Myanmar Rural Settings,* Ministry of Social Welfare, Relief and Resettlement, Ministry of Health. ADPC/ASEAN, 2009.
GTZ, *Back to Business in a Conducive Environment*, 2007.
GTZ, *supported Economic Reconstruction in Aceh in the Frame of German Development Cooperation,* Indonesia.
Harris Katie and BahadurAditya, *Harnessing Synergies: Mainstreaming Climate Change Adaptation in Disaster Risk Reduction Programmes and Policies,* ACTION AID/IDS, 2011.
Hedlund K.; Knox C., Paul, *Humanitarian action in drought-related emergencies,* ALNAP Lessons Paper, Provention Consortium, 2011.
Hyden, G., Court, J. and Mease, K., *Making Sense of Governance: Empirical Evidence from Sixteen Developing Countries,* 2004.
IBLF, *Disaster Management and Planning: an IBLF Framework for Business Response,* International Business Leaders Forum, UK, 2005.
ILO, *ILO´s Role in Conflicts and Disasters Settings". Guides and Toolkit*, 2010.
IRP, *Knowledge for Recovery Series. Info Kit: Livelihoods. International Recovery Platform,* 2009.
ISDR-UNDP-ISDR, *Guidance Note on Recovery: Livelihoods*, 2010.
ISDR/IRP, *Learning from Disaster Recovery Guidance for Decision Makers,* 2007.
ISDR-UNDP-IRP, *Guidance Note on Recovery: "Gender",* 2010.
ISDR-UNDP-IRP, *Guidance Note on Recovery: "Environment",* 2010.
ISDR-UNDP-IRP, *Guidance Note on Recovery: "Governance",* 2010.
ISDR-UNDP-IRP, *Guidance Note on Recovery: "Pre Disaster Recovery Planning",* 2010.
ISDR-UNDP-IRP, *Guidance Note on Recovery: Pre Disaster Recovery Planning (for Employment and Income)* , 2010.
ISDR/ITC-ILO/UNDP, *Local Governments and Disaster Risk Reduction Good Practices and Lessons Learned.* A contribution to the Making Cities Resilient-Campaign", 2010.
Jaspars S., *From food crisis to fair trade,* Livelihoods analysis, protection and support in emergencies. Emergency Nutrition Network (ENN). Special Supplement 39. UK
Kryspin-Watson J., *Mainstreaming Hazard Risk Management into Rural Projects,* 2006.
The World Bank, *Disaster Risk Management Working Paper Series NO. 13.*
Lautze S., *Saving Lives and Livelihoods, The Fundamentals of a Livelihoods Strategy,* 1997.
Mitchell, T., Ibrahim M., Harris K., Hedger M., Polack E., Ahmed A., Hall N., Hawrylyshyn K., Nightingale K., Onyango M., Adow M., and Sajjad Mohammed S., *Climate Smart Disaster Risk Management, Strengthening Climate Resilience,* Brighton: IDS, 2010.
Oxfam, *From Emergency to Recovery Rescuing northern Uganda's Transition". Oxfam International Briefing Paper 118,* 2008.
Oxfam, *Improving Livelihoods After Disasters". Tsunami Response. Humanitarian Field Studies,* 2008.
Oxfam, *The Aftershock of Cyclone Nargis: Credit Crunch in the Delta". Oxfam Media Background Note,* 2009.
Oxfam, *Disaster Risk Reduction in Livelihoods and Food Security Programming: A Learning Companion Oxfam Disaster Risk Reduction and Climate Change Adaptation Resources,* 2009.
Oxfam, *Integrating Disaster Risk Reduction and Adaptation into Rural Livelihood Programming. A Guide for Oxfam staff and Partners in Southeast Asia,* 2010.
Oxfam GB, *Sistematización de Experiencias de Integración de Reducción de Riesgos de Desastres en Proyectos de Medios de Vida,* 2010.
Practical Action, Practice Briefing, *Integrating Approaches: Sustainable Livelihoods, Disaster Risk Reduction and Climate Change Adaptation,* 2010.
Practical Action, *The Livelihoods Centred Approach to Disaster Risk Reduction*. Lessons from Matebeleland South, Zimbabwe. Southern Africa, 2010.
Régnier P., *From Emergency Relief to Livelihood Recovery. Lessons Learned from Post-Tsunami Experiences in Indonesia and India,* Centre for Asian Studies, Graduate Institutes of International and Development Studies, Geneva, Switzerland, 2008.
Save the Children, *HEA: Introduction to the Household Economy Approach Framework, The Practitioners Guide to the Household Economy Approach,* UK**,** (SC UK) and FEG. UK, 2007.

SEEP Network, *Market Development in Crisis-Affected Environments Emerging Lessons for Achieving Pro-Poor Economic Reconstruction.* Market Development Working Group. The SEEP Network. Washington DC, USA, 2007.
SEEP Network, *Minimum Standards for Economic Recovery after Crisis*, First Edition, 2009.
Srinivas H., *Disaster Management: A Role for the Private Sector*, The Global Development Research Center, 2007.
Steven J. et al, *Rapid Agricultural Supply Chain Risk Assessment: Conceptual Framework and Guidelines for Application,* Commodity Risk Management Group, Agriculture and Rural Development Department. World Bank, 2008.
Swiss Agency for Development and Cooperation, *Disaster Risk Reduction in the Project Cycle Management. A Tool for Programme Officers and Project Managers*, 2007.
Tearfund, *Prepare to Live. Strengthening the Resilience of Communities to Manage Food Insecurity in the Sahel Region,* Charles Kelly and Jo Khinmaung, 2007.
The Sphere Project, *Humanitarian Charter and Minimum Standards in Humanitarian Response,* The Sphere Project, 2011.
Tsunami Evaluation Coalition, *Joint Evaluation of the International Response to the Indian Ocean Tsunami*, Synthesis Report: Expanded Summary, 2007.
UN-ISDR, *Private Sector Activities in Disaster Risk Reduction Good Practices and Lessons Learned*, 2008.
UN-ISDR, *Terminology on DRR,* 2009.
UN, Secretary-General's Special Envoy for Tsunami Recovery, *Lessons Learned from the Tsunami Recovery: Key Propositions for Building Back Better,* 2006.
WFP, *Strategic Evaluation of the Effectiveness of WFP Livelihood Recovery Interventions*, Rome, Italy. Ref. OEDE/003/2009.
WFP, *Swiss Agency for Development and Cooperation, Building Resilience: Bridging Food Security, Climate Change Adaptation and Disaster Risk Reduction*, An Overview of Workshop Case Studies, 2011.
WSPA. *Case Study: Protecting livelihoods and food security: animal welfare in disasters, The Case of Myanmar (Cyclone Nargis),* 2009.

ENDNOTES

i Chambers & Conway, 1991.
ii ILO (2005) Working Out of Disaster: Improving Employment and Livelihoods in Countries Affected by the Tsunami.
iii SEEP, 2009
iv FAO and ILO (2008) The Livelihood Assessment Tool-kit:
Analysing and Responding to the Impact of Disasters on the Livelihoods of People.
v DFID Disaster Risk Reduction Interagency Coordination Group (2007)
Characteristics of a Disaster Resilient Community: A Guidance Note.

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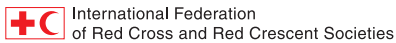

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