Strengthening Climate Resilience

Climate Smart Disaster Risk Management in Conflict Affected Areas: the case of Trincomalee District, Sri Lanka

Maggie Ibrahim and Karin Fernando

Strengthening Climate Resilience Discussion Paper 7

Strengthening Climate Resilience (SCR) through Climate Smart Disaster Risk Management, is funded by the UK Department for International Development (DFID) and aims to enhance the ability of developing country governments and civil society organisations to build the resilience of communities to disasters and climate change. It is coordinated by the UK Institute of Development Studies, Plan International and Christian Aid, who are working with a variety of organisations across ten countries (Kenya, Tanzania and Sudan in East Africa; Nepal, India, Bangladesh and Sri Lanka in South Asia and Philippines, Indonesia and Cambodia in South East Asia). SCR has developed the Climate Smart Disaster Risk Management Approach. If you would like to be involved in SCR meetings or work with the programme to trial the Climate Smart Disaster Risk Management Approach with your organisation, please either visit the SCR website www.csdrm.org or email scr@ids.ac.uk.

Acknowledgements
The Strengthening Climate Resilience consortium, comprising the Institute of Development Studies, Plan International and Christian Aid, would like to thank all those who have contributed to this publication. A special thanks to Arulappu Iruthayanathan, Sarah Hall and Brian Martin from the Christian Aid Sri Lanka office, and Katherine Nightingale from the Christian Aid London office. For offering their work as a case study, a warm thank you to R. S. Gowry from the Organisation for Eelam Refugee Rehabilitation (OfERR). Thanks are also extended to the people of Navatcholai and Sinnakulam, the respective government administrative unit officials and the disaster management officers who shared their views and experiences. This case study was conducted in partnership with the Centre for Policy Analysis (CEPA) in Sri Lanka. Thanks to Mohammed Munas for his research support and translator and research assistant Sivaprashanthi Thambaiah. Thanks also to the reviewers Maarten van Aalst, Terry Cannon and Frauke Urban. Thanks to Tom Mitchell for his guidance and support in the case study selection. We would like to acknowledge the vital contributions from over 500 researchers, policy makers and practitioners who have shared their experiences and feedback on the Climate Smart Disaster Risk Management approach through 14 national and regional consultations in East Africa, South and Southeast Asia. The SCR consortium is funded by the UK Department for International Development (DFID). The views expressed in this document are those of the authors and do not necessarily reflect the views of DFID, IDS, Christian Aid or Plan International.

First published by the Institute of Development Studies in September 2010

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The Climate Smart Disaster Risk Management Approach

Strengthening Climate Resilience

The questions in the approach are suggestions only and there may well be others

1. Tackle changing disaster risks and uncertainties

1a

Strengthen collaboration and integration between diverse stakeholders working on disasters, climate and development

To what extent are climate change adaptation, disaster risk management and development integrated across sectors and scales? How are organisations working on disasters, climate change and development collaborating?

1b

Periodically assess the effects of climate change on current and future disaster risks and uncertainties

How is knowledge from meteorology, climatology, social science, and communities about hazards, vulnerabilities and uncertainties being collected, integrated and used at different scales?

1c

Integrate knowledge of changing risks and uncertainties into planning, policy and programme design to reduce the vulnerability and exposure of people's lives and livelihoods

How is knowledge about changing disaster risks being incorporated into and acted upon within interventions? How are measures to tackle uncertainty being considered in these processes? How are these processes strengthening partnerships between communities, governments and other stakeholders?

1d

Increase access of all stakeholders to information and support services concerning changing disaster risks, uncertainties and broader climate impacts

How are varied educational approaches, early warning systems, media and community-led public awareness programmes supporting increased access to information and related support services?

2. Enhance adaptive capacity

2a

Strengthen the ability of people, organisations and networks to experiment and innovate

How are the institutions, organisations and communities involved in tackling changing disaster risks and uncertainties creating and strengthening opportunities to innovate and experiment?

2b

Promote regular learning and reflection to improve the implementation of policies and practices

Have disaster risk management policies and practices been changed as a result of reflection and learning-by-doing? Is there a process in place for information and learning to flow from communities to organisations and vice versa?

2c

Ensure policies and practices to tackle changing disaster risk are flexible, integrated across sectors and scale and have regular feedback loops

What are the links between people and organisations working to reduce changing disaster risks and uncertainties at community, sub-national, national and international levels? How flexible, accountable and transparent are these people and organisations?

2d

Use tools and methods to plan for uncertainty and unexpected events

What processes are in place to support governments, communities and other stakeholders to effectively manage the uncertainties related to climate change? How are findings from scenario planning exercises and climate-sensitive vulnerability assessments being integrated into existing strategies?

3. Address poverty & vulnerability and their structural causes

3a

Promote more socially just and equitable economic systems

How are interventions challenging injustice and exclusion and providing equitable access to sustainable livelihood opportunities? Have climate change impacts been considered and integrated into these interventions?

3b

Forge partnerships to ensure the rights and entitlements of people to access basic services, productive assets and common property resources

What networks and alliance are in place to advocate for the rights and entitlements of people to access basic services, productive assets and common property resources?

3c

Empower communities and local authorities to influence the decisions of national governments, NGOs, international and private sector organisations and to promote accountability and transparency

To what extent are decision-making structures de-centralised, participatory and inclusive? How do communities, including women, children and other marginalised groups, influence decisions? How do they hold government and other organisations to account?

3d

Promote environmentally sensitive and climate smart development

How are environmental impact assessments including climate change? How are development interventions, including ecosystem-based approaches, protecting and restoring the environment and addressing poverty and vulnerability? To what extent are the mitigation of greenhouse gases and low emissions strategies being integrated within development plans?

Figure 1: The Climate Smart Disaster Risk Management Approach

Contents

Abbreviations

CBO	Community based organisation
CBDRM	Community Based Disaster Risk Management
CCA	Climate Change Adaptation
CCAI	Climate Change Adaptation Initiative
CCS	Climate Change Secretariat
CSDRM	Climate Smart Disaster Risk Management
DMC	Disaster Management Centre
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DFID	Department for International Development
FGDs	Focus Group Discussions
GS	Grama Sevaka - village level government officer (also called Grama Niladhari)
HFA	Hyogo Framework for Action
KPIs	Key Person Interviews
IDP	Internally Displaced Person
IDS	Institute of Development Studies
IPCC	Inter-governmental Panel on Climate Change
LTTE	Liberation Tigers of Tamil Eelam
MDG	Millennium Development Goals
MENR	Ministry of Environment and Natural Resources
NACCC	National Advisory Committee on Climate Change
NCDM	National Council for Disaster Management
NGO	Non-government organisation
OfERR	Organisation for Eelam Refugee Rehabilitation
PVCA	Participatory Vulnerability and Capabilities Assessment
SCR	Strengthening Climate Resilience
SRES	Special Report on Emission Scenarios
TAFLOL	Task Force to Logistics and Law and Order
TAFREN	Task Force to Rebuild the Nation
TARFRER	Task Force for Rescue and Relief
UNFCCC	United Nations Framework Convention on Climate Change
UN-ISDR	United Nations International Strategy for Disaster Reduction

Executive Summary

The communities of Navatcholai and Sinnakulam in the district of Trincomalee in Sri Lanka have faced violent conflict and been subjected to resettlement and risks such as rising temperatures and rainfall, droughts and floods, strong winds, cyclones and elephant attacks. In response, the Organisation for Eelam Refugee Rehabilitation (OfERR), with Christian Aid, supported a community-based disaster risk management (CBDRM) approach in the district. Its aim was to build the community's capacity to prepare for and respond to risks, and to promote secure livelihoods. The project ran from 2006 to 2010, and built on a tsunami rehabilitation project which had started in 2005. After a mid-term review in 2008, it started to consider climate change issues.

The communities themselves identified the risks and set up action plans with support from OfERR, mainly through Participatory Vulnerability and Capabilities Assessment (PVCA). The CBDRM methodology involved establishing five or six community sub-groups to implement the actions agreed in the PVCA on issues such as early warning, disaster preparedness, health, education, self help and peace-building. These groups liaised with the local administrative officials, mainly Grama Sevaka (GS), for support. They also involved the rest of the community in the activities. The process was guided by OfERR but managed by the community members. Monitoring and sharing of lessons learnt took place at different levels amongst the implementers and the community. Christian Aid made periodic visits with follow-up sessions, while OfERR met monthly to review progress and share information. In the community, each sub-group met weekly and the whole CBDRM group met monthly to discuss issues and share information.

Pilot projects were added in the implementation strategy to demonstrate options for climate change adaptation (i.e. windmills/solar water pumping and an organic farm). OfERR staff also linked to the national disaster management process, and attended NGO coordination meetings as part of the CBDRM process. Christian Aid engaged in national level networking and advocacy for the integration of climate change DRM and livelihoods. This was all in the context of conflict and a emerging DRM and climate change adaption policy involving the Disaster Management Centre (DMC) and Climate Change Secretariat (CCS).

Reflecting on the Climate Smart Disaster Risk Management Approach

The climate smart disaster risk management (CSDRM) approach was not included in the OfERR project, but it has been applied to it retrospectively to learn about the potential for integration of climate change information, Disaster Risk Management (DRM) and livelihoods protection in a conflict context. The analysis of the CBDRM process against the three pillars of the climate smart disaster risk management approach (see Figure 1) revealed

that integration was beginning to happen. Key actions incorporated by the CBDRM project that reflect a climate smart disaster risk management approach include:

- 1a. Integrating knowledge of changing risks and uncertainties into planning, policy and programme design to reduce the vulnerability and exposure of people's lives and livelihoods.

- 2a. Strengthening the ability of people, organisations and networks to experiment and innovate.

- 2b.Promoting regular learning and reflection to improve the implementation of policies and practices.

- 3d. Promoting environmentally sensitive and climate smart development.

Recommendations

As a result of the CBDRM intervention, there is increased awareness of climate change and disaster related issues in the two communities. However the capacity building initiatives have not been able to build the capabilities of staff and community members to increase the linkages between climate change, disaster and livelihoods. It was also difficult to direct the communities towards more sustainable long term actions. Since climate change activities were incorporated only half way through the process, it was also difficult to integrate at the planning stages and activities have thus tended to be treated as separate activities rather than integrated responses.

In setting up the CBDRM process, the project has been successful and the community has used it to enhance disaster related activities and adapt them to other pressing needs such as education services. This shows the need for links to addressing poverty, vulnerability and its structural causes. While community participation is a valuable component of this project, it is still a new concept and greater direction by Christian Aid would have improved implementation.

The outcomes of this project reflect wider trends and practices. At present, national disaster management has given priority to emergency systems for hazards such as cyclones and tsunamis. Dealing with the changing nature of disaster risk and climate change are at very early stages of development. Decades of conflict in the project sites have increased uncertainty, reduced services and resulted in programming that is geared towards relief and short term planning. Therefore external support for including climate information and adaptive measures was not available to complement the project activities.

The impacts of climate change adaptation (CCA) involves using new concepts, and its integration with development and disaster agendas requires more advocacy, capacity building and involvement by Christian Aid, its partners and the community working together. The OfERR interventions have laid a foundation that can be built up. These are some recommendations for OfERR and Christian Aid to increase the integration of climate change, DRM and development activities are given below:

- Include climate information, weather trends and local knowledge in vulnerability and capability assessments in order to design interventions that take account of changing risk. This could inform long-term preparedness activities such as building platforms to avoid flood waters entering into homes, or strengthening houses and roofs to withstand winds and cyclones. This process should also track changes and measure how well interventions cope with the changes.

- Develop a capacity-building process for an integrated approach to DRM. Increasing the capacity of Christian Aid's partner organisations will be a critical step in promoting a climate smart disaster risk management approach. Christian Aid has recently developed a resource on planning for adaptation to promote secure livelihoods (Ewbank 2010). If successful, this toolkit will support community adaptation activities (organic model farm, solar and wind energy water pumps) in the CBDRM approach, and help to scale it up with other communities.

- Invest in local staff to build knowledge of DRM and climate change to retain staff able to work in remote areas. OfERR had a good rapport with communities through their previous work on tsunami relief and recovery. This continuity with the communities helped implement the CBDRM process.

- The outcomes of integrating climate change, DRM and development will require monitoring and evaluation (M&E) over the long-term. M&E systems should promote learning at the community and organisational levels.

- Develop stakeholder and governance mapping to improve understanding of the climate change, DRM and development policy architecture in which the projects operate. This will allow for identification of climate change, DRM and development champions within governance structures to facilitate networking and convening of local authorities, district officials, non-government organisations (NGOs) and community-based organisations (CBOs), and businesses. This is critical in a post-conflict context where the development of eastern Sri Lank has been prioritised through resettlement, rehabilitation, infrastructure, economic growth (industries) and governance (Government of Sri Lanka undated). Identifying climate, DRM and poverty reduction champions within this eastern development agenda will help to facilitate a climate smart approach.

- Use district level DMC NGO network convening meetings as a way to advocate for community-led vulnerability and capacity mappings to inform the DMC's DRM agendas.

- Undertake governance mappings to identify institutional structures and development trends in which programmes are operating. This will help understand how to work more effectively within these constraints and opportunities.

1. Introduction

In Sri Lanka, hazards such as floods, droughts and cyclones can lead to disasters with loss of life, physical damage to property and sometimes irreversible changes to the natural environment. The poor and near-poverty tend be more at risk as they have fewer assets and resources and less ability to prepare for or recover from a disaster (IPCC 2007, UNEP 2008). Poverty, vulnerability, conflict and disasters exist in a reciprocal and reinforcing relationship (Ariyabandu and Bhatti, 2005). There is now greater recognition of these links, and policymakers and practitioners are trying to incorporate measures of disaster risk reduction (DRM) as a part of development responses with the aim of addressing poverty (UN-ISDR 2008).

While this integration is gaining momentum, there is another global call for action that is urging development interventions to consider climate change as yet another driver of poverty, one that could negate many development efforts (IPCC 2007). The future climate change scenarios produced by the global scientific community anticipate more frequent and/ or severe hazard events, with the poor being the hardest hit. These predictions, and the changes in climatic conditions already evident, are forcing those working in disaster management to consider the incorporation of this added dimension into their work.

As climate change is understood to be one of many drivers of vulnerability, this case study examines how the CSDRM approach can be applied in Trincomalee District in the eastern province of Sri Lanka where people face conflict, displacement and disasters (see Annex 1 for a map of the district). Trincomalee District is an ethnically complex region and has been at the heart of post-independence conflicts. It features a Tamil-speaking majority split between ethnic Tamils and Muslims[1], as well as a sizeable Sinhala minority. Three decades of conflict have caused large internal displacement, damage to homes and infrastructure, loss of livelihoods and high numbers of single-headed households.

The effect of the war has increased vulnerabilities to drivers of poverty by disrupting daily routines, limiting access to services, restricting livelihood opportunities, disrupting social networks and instilling fear among residents[2]. The case study uses the CSDRM approach to explore the strengths and challenges of OfERR's facilitation of the CBDRM project in terms of how it was able to integrate climate change, disaster risk management DRM and poverty reduction with the communities involved, and provides lessons on how to build on this integrated work.

1.1. Context of the study

The Eastern Province and conflict

Current and future problems of disasters cannot be understood without some background knowledge of the conflict which has affect the country, including the communities in this study. What follows is an overview of

[1]In Sri Lanka Muslims are considered a separate ethnic group. The term Muslim is used inter-changeably to refer to the religious group and the ethnic group. Moors is the administrative term for Muslims.

[2]This information is based on district profiles developed by CEPA for the study, The Impact of Humanitarian Aid/Development Funding Distribution on Local Community Relations and Horizontal Inequalities: Ensuring Aid Effectiveness, carried out in collaboration with Centre for Research on Inequality, Human Security and Ethnicity (CRISE), University of Oxford.

the 30-year conflict. Sri Lanka gained its independence from Britain in 1948, with a parliamentary democratic-style government system. Tensions between the ethnic groups created through British colonial rule became institutionalised with laws passed by nationalists from the Sinhala majority making Sinhalese the official language. Further, the 1972 Constitution gave Buddhism 'foremost place' in the state, marginalising Tamils and Muslims (Conciliation Resources 1998: 78). As a result, the 1980s witnessed the rise of militant politics with the Liberation Tigers of Tamil Eelam (LTTE) emerging in the late 1980s as the dominant separatist group. They employed guerrilla warfare and claimed land in the north and east of Sri Lanka. Various peace efforts followed (1987, 1994) but failed, and in 2000 violence escalated with the LTTE gaining more land in the north and east (International Crisis Group 2010).

With the election in 2001 of the new Prime Minister Ranil Wickremasinghe, the new government negotiated a ceasefire in 2002. The LTTE withdrew from negotiations in April 2003 due to their exclusion from meetings with international donors and the lack of government cooperation (ibid). A proposal for an interim Self Government Authority was put forth by the LTTE in October 2003 to provide the basis for new negotiations. Several factors led to another collapse of the ceasefire, new elections in 2004, resulting in change in the ruling party, a split from the LTTE by the eastern Commander and violence between the LTTE factions.

Immediately after the 2004 tsunami there was short-lived cooperation between the LTTE and the government (Muggah 2009). Increased violence by the LTTE on police and army in the north was met by counter-insurgency measures by the government. In February 2006, peace talks failed to renew the ceasefire agreement, and the government launched a military assault that resulted in many deaths. The International Crisis Group has estimated that 20,000 to 30,000 people were killed between 2006 and early 2009, with an estimated 5,000 civilians killed in crossfire and targeted attacks (2010.) The numbers of deaths are difficult to verify (Ploughshares 2010). In 2010, presidential elections were held two years ahead of schedule. Mahinada Rajapksa was re-elected after a campaign marred by violence, where the laws and directives that regulated elections were largely ignored (PAFFREL 2010).

The post-war actions of the government have continued to worsen the grievances that prompted LTTE militancy. Currently, the Sinhalese-dominated political parties are showing very little sign of change towards a more inclusive and representative system and resource sharing. According to the International Crisis Group, 'no real space has been given to Tamil and Muslim political or community leaders in the north and very little in the east' (International Crisis Group 2010).

As well as suffering political isolation, many of the Tamils and Muslims are physically isolated from their land as a result of the conflict. Sri Lanka ranks among the highest in the world in terms of real and proportional displacement. In addition to the deaths of 70,000 civilians from 1983

to 2010 as a result of violence, millions of Sri Lankan men, women and children have experienced some sort of internal displacement since the 1970s (Muggah 2009: 183). This includes mainly Tamils and Muslims, as well as marginalised Sinhalese. Approximately 200,000 people have been displaced since January 2006 and 2008, and the total number of internally displaced persons (IDPs) is over half a million (Duryog Nivaran Secretariat). Resettlement has remained a contentious issue, with certain areas designated high security zones that are restricting people returning to their original homes. Muggah asserts that this is a strategy to control ethnic minority groups (2009: 185).

Both the government and the LTTE pursued their own objectives, which included containing, restricting and controlling population movement (ibid). Thus part of the motivation for a centralised and top-down approach to resettle or provide shelter for affected groups was a desire to 'control and (re)order communities' (Muggah 2009: 224). The costs and risks faced by the displaced include loss of livelihoods and assets, and poverty arising out of being disconnected from social networks (Muggah 2009: 225). Furthermore, the return of people who have been displaced has not met international human rights standards; currently, 80,000 IDPs remain in camps in the north and a further 10,000 suspected LTTEs are detained (International Crisis Group 2010).

Marginalised and displaced communities are facing increasing insecurities and hazards, and the distribution of wealth is thought to be worsening along with measures of human development, as the concentration of economic growth is in the western region (UNDP 2009). The war also prevented the collection of data from the north and east of the country, making it difficult to make comparisons. Assessing the evidence from different sources suggests that social and economic indicators in the north and east are worse than those for much of the rest of the country: per capita incomes are relatively low and infant mortality, maternal mortality and the percentage of underweight babies are higher than the national average (Sarvananthan 2006). Many of these indicators are drawn from surveys carried out in 2003 (before the 2004 tsunami).

The national poverty alleviation programmes (Samurdhi), other services (health, education, transport) as well as public administration and local government support (decentralised political structures) have been limited in areas affected by conflicts. Following the 'liberation of the east' in 2008, and the end of the war in 2009, national policy has been to give priority to developing the east and north.

The emphasis is on resettlement, rehabilitation, infrastructure, economic growth (industries) and governance (Government of Sri Lanka undated). Due to security regulations over fishing rights and land for agriculture, people's livelihoods options have been restricted while access to markets and support services are also limited. It is within this context that OfERR is facilitating CBDRM in several communities in Trincomalee District. This case study investigates their work in two study sites - Navatcholai and

Sinnakulam. See Annex 1 for a map of Trincomalee District and project locations.

Box 1

Study site: Sinnakulam

Sinnakulam is an inland village under the Pallikudiyiruppu Grama Niladhari Division, in the Muthur Divisional Secretariat (DS). The village took shape in the early 1970s with 15 families who moved here for chena (slash and burn) cultivation. During the escalation of the north-east conflict (from 1983) the community has been displaced, relocated and resettled several times. They returned in 2008 (with the end of the war in the east) and today the village consists of 103 families, including 35 who were relocated from a high security zone (a restricted area controlled by the Sri Lankan armed forces). The community is 100 percent Tamil Hindus.

The main livelihood options are seasonal fishing along the coast, agriculture and related wage labour. Some community members are involved in livestock rearing. Residents say that before displacement their village was economically prosperous with access to land and machinery for agriculture. Its remoteness restricts access to services. The village has no electricity. Primary education is available in the village, but secondary pupils must travel to Pallikudiyiruppu five kilometres or Thoppur, seven kilometres away. There are no medical services. Transport facilities include an irregular bus service - the road connecting the village to larger towns (such as Pallikudiyiruppu, Thoppur) was re-opened in 2009. People also use a ferry service to access better serviced towns such as Kinniya and Trincomalee.

Sources: Participatory Vulnerability and Capabilities Assessment report and focus group discussions

Box 2

Study site: Navatcholai

Navatcholai is a coastal village in the Kumprupity Grama Niladhari Division in the Kuchchaveli Divisional Secretariat (DS). The village dates back to the 1880s. Since the onset of the civil war in 1980s they have faced repeated displacement and resettlement.

In 1999 people from Vanni were resettled in this village. In 2006, 200-250 families affected by the tsunami relocated here. Due to the mixing of families in the resettlement process the boundary of the village is blurred. The community indicated that 400 households make up the village while the Grama Sevaka (GS) records state 78 households. The community is a 100% Tamil, with 75% of them Hindus and 25% Christians. The main livelihood options are seasonal agriculture and fishing and related wage labour. Some people are government or NGO employees, and others self-employed (in carpentry and masonry).

This village is not far from the main Nilaveli road. The village has no electricity despite availability of electricity infrastructure in the area. There are two primary schools in the area while for secondary education they have to travel to Kuchchaveli (4km away) or Nillaveli (6km away). A technical college has been recently built and offers computer and English classes. With the end to the conflict, transport and health services in the village have improved.
Sources: Participatory Vulnerability and Capabilities Assessment report and focus group discussions

Sources: Participatory Vulnerability and Capabilities Assessment report and focus group discussions

Climate change and disaster risks

The UN International Strategy for Disaster Reduction (UN-ISDR) risk model, which assesses a country's exposure to natural disasters in terms of mortality and economic losses, has placed Sri Lanka in a medium risk category. Currently, the seven most frequently reported hazards in Sri Lanka are: animal attacks, fires, floods, extreme wind events, landslides, lightning and droughts (UNDP 2009). Global warming is expected to lead to a rise in sea level, higher temperatures, more frequent and prolonged drought, high intensity rainfall, increased thunder activity and tornadoes (Meteorological Department Sri Lanka 2000).

The Disaster Management Centre has collected data from 1974–2007 and described the trends for major hazards. Sea level rise could lead to flooding for low lying coastal settlements and wetlands. The Meteorological

Department of Sri Lanka has used the special report on emission scenarios (SRES) proposed by the Intergovernmental Panel on Climate Change to estimate what rainfall and temperatures would look like in future years. They predict that monsoon rainfall is projected to increase by the year 2025, and the mean temperature is projected to rise by between 2.5 and 2.9 degrees centigrade.

These climate change impacts will affect agriculture, water resources, land use, health and energy. Adaptation measures such as rain water harvesting and de-silting of minor tanks have been recommended by the Department of Meteorology (www.meteo.gov.lk, downloaded 26 March 2010). This general climate information for Sri Lanka has not been translated into district level impacts of climate change, especially for the east of Sri Lanka where conflict has affected weather data gathering.

In response to these risks, OfERR and Christian Aid have come together to support community based disaster risk management within a newly emerging national disaster risk management structure. It is in this context that we examine Navatcholai and Sinnakulam, which have both been displaced by conflict and are facing a range of changing disaster risks.

2. Experience with integrating Disaster Risk Management, Climate Change Adaptation and Vulnerability Reduction

The following sections provide an overview of the key partners (OfERR and Christian Aid) and describe their experiences with the integration of climate change adaptation, disaster risk management and vulnerability reduction. The report will then draw out the main findings of the case study based on applying the climate smart disaster risk management approach in order to identify areas for strengthening CBDRM (Section 3 below). It concludes with some recommendations to improve integration of DRM, climate change information and development into future programmes while considering the enabling environment and challenges.

2.1 Community Based Disaster Risk Management project

OfERR was set up to assist Sri Lankans living in refugee camps in southern India to return to Sri Lanka. The interventions were aimed at assisting refugees with re-entry and resettlement in Sri Lanka. They provided services such as assisting with legal documentation, capacity building for livelihoods, health and nutrition support, counselling for social integration and wellbeing, and rights based services. However, before they were able to start work, the tsunami struck in December 2004. Along with other organisations in Sri Lanka, OfERR halted their set goals and worked on relief and rehabilitation for communities affected by the tsunami. Their main funder for this work was Christian Aid.

So when Christian Aid decided to include DRM in their rehabilitation process in 2006, OfERR proposed doing CBDRM, and was successful in achieving support for a three-year project. OfERR has implemented CBDRM ideas in several vulnerable locations in the Trincomalee District (Muthur, Echalampattu, Morawewa and Kuchaveli DS Divisions). Two villages selected for this case study are Navatcholai (Kuchaveli DS) and Sinnakulam (Muthur DS). Each project has similar operational structures but with different applications at local level.

CBDRM is where ‘at-risk communities are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities’ (Asian Disaster Preparedness Centre 2006). This concept is based on the idea that communities must participate in assessing local exposure to risks and determining actions (both on their own and with support) to increase their resilience. It is a method that is being used in disaster management processes to build awareness and capacity, empower communities to participate in DRM and to link them with other local, regional or national interventions addressing disasters.

In this case study, the main promoter of the CBDRM concept for integrating climate change, DRM and livelihoods was Christian Aid, an international charity working on humanitarian responses and poverty alleviation. Its involvement in DRM stems from experience of emergency responses and

recovery efforts: these showed that by incorporating preparedness for future threats the value of emergency and rehabilitation efforts increases. Christian Aid also advocates that DRM should go beyond emergency and relief responses and be integrated into poverty reduction and sustainable development. More recently it has recognised climate change as increasing the vulnerabilities of poor people through increased exposure to hazards and livelihood instability. It views CCA as having similar aims to DRM, as both seek to build people's livelihoods and reduce vulnerability to hazards.

Therefore Christian Aid promotes the integration of both DRM and CCA into development programming at policy and project level (see Ewbank 2010 for Christian Aid's Framework on integrating Climate Change Adaptation into their development programmes). Christian Aid works through local partners to support the implementation of and advocacy for the CBDRM process to strengthen the community's ability to tackle risk to disasters and climate change impacts and to support communities to advocate for government policies that reduce disaster risks. OfERR is partner that has used the CBDRM process at a project level and was encouraged to integrate climate change adaptation measures.

The community was a key stakeholder in the CBDRM process as decision makers, implementers and beneficiaries of the interventions. Navatcholai and Sinnakulam were selected for this study as sites where OfERR worked on DRM. Both communities have endured almost three decades of war; they have been displaced and resettled several times; and have had limited health care, education and transport. Their livelihoods have also been restricted due to security regulations over fishing rights and land for agriculture, while access to markets and support services were also limited. In terms of exposure to natural risks, both have experienced cyclones, annual flooding and droughts, lightning storms and elephant attacks.

These communities were not directly affected by the tsunami but felt it indirectly through loss of family and friends and disruptions to health and transport and availability of goods. In regard to climate change, both communities consider that the weather is increasingly varied and unpredictable with rain at the wrong times or inadequate rain when needed as well as extended periods of drought. Growing water scarcity, especially for livelihood purposes was a significant threat (information from focus groups in Navatcholai and Sinnakulam). Both communities had similar restrictions to services, faced similar disaster risks and had similar livelihoods options making comparison between the two communities possible.

2.2 Application of the Community Based Disaster Risk Management concept at field level

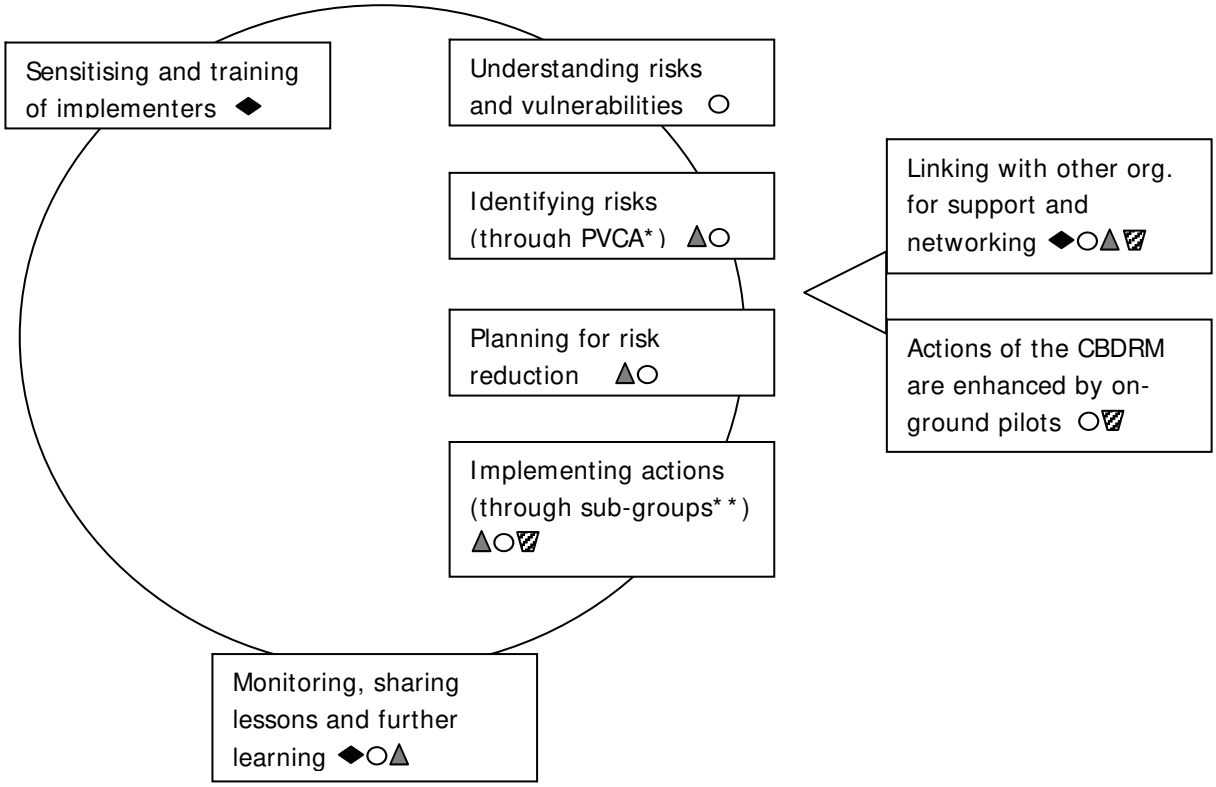
The approach

The objectives of the project, as envisaged by OfERR were to: 'reduce the vulnerability of men, women and children to the physical, social, and economic effects of natural and man-made hazards'. OfERR aimed to put

this in place by facilitating the CBDRM process at village level, improving the health status of resettled communities and improving sustainability of livelihoods (progress review report). The project focused on capacity building and empowerment of the communities to identify and prepare for disaster and climate risks and to integrate disaster risk management practices into their relief, rehabilitation and livelihoods programming. Figure 2.1 illustrates the project implementation process and roles and responsibilities of the stakeholders. The core activities in the CBDRM process can be broken into four categories – understanding the risks and vulnerabilities, identifying the risks, planning for risk reduction and implementing the agreed actions. Through the CBDRM process the project focused on raising awareness and building capacity on disaster and climate issues and on putting in place community-driven actions to address short-term emergency responses and longer term preparedness responses.

Figure 2.1: Community Based Disaster Risk Management project implementation process

Source: Developed by CEPA from KPIs



* PVCA - Participatory Vulnerability and Capabilities Assessment

** The CBDRM group is made up of 5 – 6 sub groups that address various aspects of DRM.

The sections that follow describe these activities in each area.

Awareness and capacity building

This took place at two levels: capacity building of the implementers and of the community. For the implementers, structured training programmes on the concepts, possible interventions and strategies for implementation (such as the CBDRM process) were carried out by Christian Aid. At the beginning, the project (in 2006) focused on DRM; at the mid-term review in 2008 climate change issues were included for the remainder of the project. Advice and feedback was received from Christian Aid through quarterly and annual review meetings, field visits and sharing of information.

Other mechanisms included self learning processes set up by OfERR for their own staff which included researching relevant topics online (mainly through Indian Tamil language newspapers) and monthly meetings where information from the field was shared along with presentations on new learning by the staff. The training sessions that took place at the initial stages of the project and the Tamil newspapers accessed online were the main capacity building and awareness tools available to the implementer. In attempting to integrate CCA with DRM, the project has faced some challenges to effective capacity building.

Finding skilled trainers, especially in Tamil, and appropriate (especially local) information was not easy. And Christian Aid felt their partners were unable to make the connections between climate change theory and practical on-ground applications. Recruiting and retaining staff with training and knowledge of DRM and CCA to work in remote areas and with knowledge of local, small organisations (as opposed to international NGOs) was difficult due to their preference for working in larger, better known organisations.

In each community a training programme was carried out in 2006 for about seven men and women, covering disaster risks and the need for preparedness measures. Information was transferred to other community members through the mobilisation process for the CBDRM groups and the PVCA exercise. Communities see their own experiences and the awareness raising activities carried out by OfERR and other organisations like Sri Lanka Red Cross as the most important sources of information for understanding disasters and climate issues.

The most easily recognised and valued disaster management information amongst the community was information on early warning and emergency preparedness. Relatives and friends living in other villages, the Navy or police personnel, local government representative such as the Grama Seveka (GS) were identified as the most important sources for this information. Despite the lack of electricity in their village and having to go to nearby towns or friends' houses to charge their phones, the mobile phone is the most widely used means of sharing disaster information.

The capacity building that has taken place through the CBDRM project in 2006-10 and by other organisations in the area (Red Cross, World Concern) has concentrated on early warning and preparedness. Other long term

disaster management and livelihood strengthening capacities have not been transferred.

Interventions on the ground

The CBDRM methodology involved the establishment of five or six community sub-groups on different areas (early warning, disaster preparedness, health, education, self help and peace building). These subgroups were predetermined by Christian Aid based on the rationale that each was a component needed for a holistic approach to DRM. Each group had five members, men and women, who were nominated by the community based on their knowledge and experience and ability to commit the time.

Understanding risks was done through awareness-raising and capacity-building programmes organised by OfERR. Awareness programmes included sharing of details on disaster risks as well as the causes and consequences of the climatic changes, highlighting future threats and the need to be prepared. Discussions were also stimulated through videos presentations on climate change and renewable energy options. The videos were in English and explanations were provided by OfERR staff. Training was carried out on issues such as safety aspects, evacuation mapping and drills. Identification of the risk and setting up action plans was done mainly through the PVCA, an important part of the CBDRM methodology. It is through this exercise that the community developed their village profiles (history, resources, income sources), identified risks (natural and man-made) and prescribed actions for each of the sub groups. It was facilitated by OfERR using project funding and external consultants skilled in these methodologies. The local authorities and other NGOs working in the area were invited to participate.

The sub groups undertook to implement the actions agreed in the PVCA. They liaised with the local authorities mainly the GS for required support and also informed and involved the rest of the community in the activities. The process was guided by OfERR but managed by the community members. The loop was closed through the monitoring and sharing of lessons that took place at different levels amongst the implementers and the community. Christian Aid undertook periodic visits and follow-ups while OfERR met monthly to review progress and share information. In the community, each sub group met weekly and the whole CBDRM group met monthly to discuss issues and share information.

Pilot projects were also part of the implementation strategy to demonstrate alternative options for climate change adaptation (windmills, solar water pumping and an organic farm). OfERR staff also undertook networking with other disaster management and development related activities (linked into the national disaster management process, attended NGO coordination meetings) as a sub component of the CBDRM process. Christian Aid also engaged in national level networking and advocacy to integrate CCA and DRM.

The actions to be implemented on ground were determined through the PVCA. The PVCA exercise is based on participatory rural appraisal techniques and aims to gather the local community's experience of vulnerabilities and capacities and to use this knowledge based to develop activities. The PVCA was led by the implementing partner with the active participation of the community. The implementing partner coordinated the process and participated in the process. Table 2.1 compares what was originally planned at the PVCA stage and how it evolved at the implementation stages.

Table 2.1: Comparison of identified actions and implementation outcomes

Original groups, roles, responsibilities assigned (from PVCA)	Groups now in place, activities carried out
Early warning task force Alert community to the disaster	**Early warning group/preparedness group** Community members are designated to authenticate the information/alerts received with the Grama Sevaka (GS). They then alert the community (through house visits or loudspeakers). They have developed a two alert system – the first for preparation and the second for evacuation. They identified flood prone areas. Cut drains, diverted the water to ponds. They get support from the elders to put in safety measures. In one community (Sinnakulam) a low lying area was raised to prevent flooding and a road was constructed for access.
Search and rescue and evacuation task force To manage shelter, evacuation and search and rescue operations.	Group does not exist
Health, first aid, water and sanitation To provide health facilities, first aid to victims and purified water to all, and look after sanitation facilities.	**Health group** Through hazard mapping they identified disease prone areas. They carry out home visits to check on management of premises – hygiene/disease control and safety measures are shared with them. They also carry out shramadanas (Labour donation, self help) to improve the hygienic conditions in the village.
Self help group To prepare food and packs to be distributed. Asses and prepare estimates for the camps. Maintain contact with public to get relief to the affected people. Psychosocial trauma counseling to the affected people	**Self help group** This group has established saving groups with monthly savings and loans for small livelihood initiatives. OfERR has also put in place organic model farm and solar and wind energy water pumps to demonstrate more sustainable farming practices.

Table 2.1 continued

Emergency education and student forum To organise student forums and evening tuition classes through activity oriented methods. Organise sports, games, cultural activities and competitions, and train them on road safety programmes in the camps/ villages.	**Education group** They identified drop-outs and cases of children not attending school. They do home visits and such cases are assisted (by talking to the parents and principal to get them to re-join). In Navatcholai this group appealed to the GS to assist them to get teachers and extra help for the students. They also provided season tickets (for transport) for five advanced level students to encourage them to pursue their studies.
Disaster assessment, emergency relief supply and distribution. To assess the situation, prepare list of affected people for relief supply & distribution	This group was not mentioned in either community
Peace group Introduced mid-way by Christian Aid to include the human rights and peace building component in to the implementation indirectly.	**Peace group** In Navatcholai this sub group dealt with small community disputes. In Sinnakulam this group was not formed.

Source: Community PVCAs and focus groups from Navatchola and Sinnakulam

As can be seen in the table above from the synthesis of activities from both communities there is some disparity between planning and implementation in both project sites. For example in Sinnakulam, the self help group focus has shifted from relief support to livelihoods support. Those present in the focus groups from Navatcholai showed some confusion when asked about the duties of the early warning and preparedness groups. Some thought it was the same group while others identified them as separate groups. While some activities reflect DRM objectives, others especially in the education group, are concerned with addressing the current deficiencies in the service.

Since these activities have been in place no natural hazards have happened that warranted emergency and relief activities. However the CBDRM group in Navatcholai used this knowledge to assist with a man-made disaster. A shell attack had resulted in people fleeing to a nearby church for safety. The CBDRM group mobilised to provide cooked meals and dry rations to the displaced. They also spoke on their behalf to the military to allow the IDPs to go back to collect the important documents and necessary items. The community members stated that even though they have been made aware to carry these items with them in a case of an emergency, in the actual event, due to fear and urgency of the situation, this preparedness step was forgotten.

At the time the initial PVCA was done in 2006, the decision to integrate CCA into DRM had not been made at project level. Therefore the PVCA concentrated only on disaster related interventions and did not include adaptation measures which considered a changing climate. An annual review allowed new activities and updated understanding of drivers of risks. Therefore the pilot projects – organic farm, wind and solar water pumping began in 2008 as sub-activities for the self help groups in both project sites.

These activities arose from discussions with the community members who were concerned with the price of chemical fertiliser and kerosene as fuel for water pumping. OfERR took the lead to include these interventions as CCA measures as well as for livelihoods. Currently the community is applying these techniques to their home gardens and not to their main livelihood related agriculture activities. They are concerned that it is not applicable at the larger scale as this has not been sufficiently demonstrated to convince them that there is a low risk to switching both their subsistence and commercial agricultural practices and that there is a market for organic crops. They innovate in their subsistence farming and minimise the risk of implementing this new organic farming practice by only testing it in their home gardens.

The actions taken by both communities to address hazard risks are based on their own experiences of dealing with disasters as well as those they have gained from OfERR and other similar support systems provided by other projects implemented in their communities over the years. As Table 2.2 below shows, there is more focus on emergency and relief operations and less on longer-term measures. In both communities the implementation of the CBDRM approach had limited success in integrating climate trends into risk reduction activities and there was limited integration between activities implemented by OfERR to address structural causes of poverty (organic farming, solar energy and wind energy) and the self-help groups.

Table 2.2: Types of disaster preparedness activities undertaken

Drought Frequency: seasonal but more prolonged Affects: domestic and livelihood water needs	**Short term preparedness**: store water in the rainy season (pond), (not for livestock and cultivation). Long term preparedness: home gardening techniques – planting in gunny sacks, planting trees, less water consuming plants.
Floods Frequency: seasonal, more varied Affects: livelihoods	**Emergency**: awareness on emergency preparation (keep valuables and dry rations for a day), early warning plan, emergency drills, first aid training, evacuation routes. **Short term preparedness**: dig drains and divert water to pond (collecting it for the dry season), as there are no culverts in the roads, a canal is cut (after rainy season it is covered up). **Long term preparedness**: Some houses were raised up and made stronger. A low lying area was filled to prevent flooding and a road was built for better access.

Table 2.2 continued

Cyclones Frequency: Seasonal, more severe and frequent Affects: house and property, lives	**Emergency:** Recently high winds had blown off the school roof and the children were gathered in an open space for safety. In 2000 a cyclone struck without warning. Some went to the school or gathered in a one house and put weight (rocks) on the roof to stop it being blown off. Emergency drills and early warning systems are now in place. **Short term preparedness:** temporary shelters, food and relief, knowing when to go fishing/be out at sea – due to experience **Long term preparedness:** rebuilding stronger roofs (through a sponsored project).
Elephant attacks Frequency: ever present threat Affects: house and property, lives and livelihoods	**Short term preparedness:** use of fire crackers, making a noise to scare the elephants.
Tsunami Frequency: rare but high impact Affects: house and property, lives and livelihoods	**Emergency:** awareness on emergency preparation, early warning plan, emergency drills, first aid training, evacuation routes. **Short term preparedness:** temporary shelter, relief

Source: Community focus groups in Navatcholai and Sinnakulam

The emphasis on short-term preparedness and lack of integration of climate change information into preparedness activities is not surprising given recent end of the thirty year conflict and the national policy architecture on DRM. This emerging policy architecture for DRM is discussed below.

2.3 Climate change and disaster risk management policy architecture

The policies and implementation processes to tackle climate change are relatively new in the national policy context. Sri Lanka is beginning to formalise climate change and disaster risk management into policy. The Ministry of Environment and Natural Resources (MENR) is the lead ministry responsible for climate change adaptation and mitigation. The Ministry's recent action plan for a Green Sri Lanka – Haritha Lanka – includes meeting the challenges of climate change. MENR created a Climate Change Secretariat (CCS) in 2002 to: coordinate research and actions related to the United Nations Framework Convention on Climate Change (UNFCCC); develop policies; provide guidance; and raise awareness of climate change among other ministries and the public (CCS 2010). The CCS set up the National Advisory Committee on Climate Change (NACCC) to facilitate these objectives and ensure that they are consistent with national development priorities.

Despite the country's extensive experience with internal displacement and resettlement due to cyclones, landslides, floods, droughts and the 2004 tsunami, a national disaster policy framework had not been in place. The tsunami highlighted the need to coordinate efforts of various government agencies for both natural and man-made risks. The agencies responsible for

disaster response were dispersed and uncoordinated immediately after the tsunami. They included the National Disaster Management Centre (Ministry of Women and Empowerment and Social Welfare), the National Disaster Management Council (Presidential Secretariat) and with the erstwhile Task Force for Rescue and Relief (TAFRER), the Task Force to Rebuild the Nation (TAFREN) and the Task Force to Logistics and Law and Order (TAFLOL) (Muggah 2009: 191). Furthermore, the LTTE was involved in recovery and reconstruction. The Post-Tsunami Operational Management Structure was set up under a joint administration between the LTTE and the government though it quickly collapsed.

Since 2005, several steps have been taken to address the need to strengthen legislative and institutional arrangements for disaster risk reduction. The Sri Lanka Disaster Management Act No. 13 of 2005 provides a legal basis for instituting a DRM system, and established the National Council for Disaster Management (NCDM) and the DMC. In 2006, the Ministry of Disaster Management and Human Rights was created as a separate Ministry with the NCDM, DMC and the Department of Meteorology under its oversight (Disaster Management Centre 2006: xxxi).

However, the main responsible agency for climate change is the Ministry of Environment and Natural Resources which has set up a climate change unit and secretariat. This secretariat comprises of experts and organisations – both government and non-governmental and is not under the oversight of the Ministry of DRM and HR. Under the DMC, a DRM framework for Sri Lanka has been created to 'unify the efforts of all agencies working in various sectors across all regions and levels of development activity' (DMC 2006: xxi). They have prepared a 'road map' towards building a safer Sri Lanka to coordinate multi stakeholder efforts in the next ten years. Consultations with the provincial and district administrations of Hambantota, Ampara and Kandy have been undertaken to devise the road map.

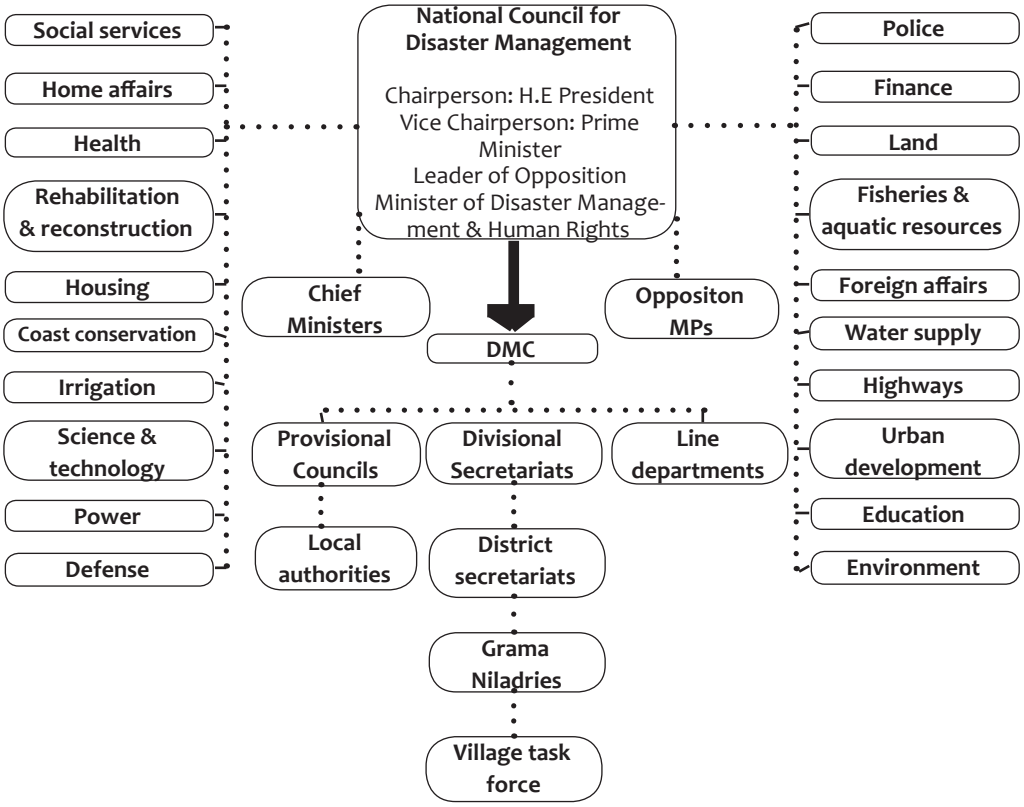
It is interesting to note that neither climate change nor the Ministry of Environment are mentioned anywhere in either volume one or volume two of the road map despite the strategy entailing the following elements:

- policy, institutional mandates and institutional development
- hazard, vulnerability and risk assessment
- tsunami and multi-hazard early warning systems
- disaster preparedness planning and response
- disaster mitigation and integration into development planning
- integration of disaster risk reduction into development planning
- community-based disaster management
- public awareness, education and training (Disaster Management Centre 2006: ix).

The institutional arrangements have been set in order to implement the road map which attempts to create macro to micro linkages. The DMC structure (Figure 2.3 below) is composed of: Advisory Committee to the DMC; National Emergency Response Committee; technical committees;

provincial steering committees; district disaster management committee; divisional disaster management committee; local authority disaster management committees and Grama Niladari/village level committees. These committees at the national, divisional and district level are by appointment from the line ministries and government administration. The Grama Niladari disaster management committee level oversees the crosscutting preparedness planning and early warning by coordinating implementation by NGOs and CBOs. The village volunteer groups are created through a general village meeting and have no legal status. The institutional structure brings in a range of national, regional and local bodies, both government, non-government and community based to collaborate and handle specific roles based on their mandates and assigned sectors as shown in Figure 2.3 below.

Figure 2.3: Disaster risk management institutional framework in Sri Lanka



Source: adapted from Disaster Management Centre, 2005

Within the DMC structure, activities filter top-down to the village. At the village level a CBDRM process has been adopted as a key strategy to ensure a safer Sri Lanka and the mode by which DRM is taken to the village level (DMC, 2005).

The DMC activities in the Trincomalee area began after the tsunami (in 2005). The DMC is the nodal point for disaster management in the district, providing information and training for these activities, liaising

with other stakeholders as well as setting up (or overseeing) the CBDRM processes at village level (DMC 2005). The CBDRM process includes setting up the sub groups such as early warning, preparedness and self help groups, conducting vulnerability assessments, carrying out training and preparedness activities and monitoring. To carry out the village level work they link with local government administrative bodies and NGOs already active in the areas (such as Red Cross organisations or World Concern) (DMC 2005, KPIs with DMC and local government officials).

2.4 The external support structure

One of the important elements needed for the successful integration of CCA into DRM and development activities is the enabling environment in which this integration should be taking place. This is influenced by external factors such as policy frameworks, resources (information, finances and human capital – number and capacities), partnerships and interest. This section looks at the context and policies which influence the integration at a local level where the CBDRM project was implemented.

In the areas where the case study sites are located communities have stated that government services – administrative services, transport, education, and healthcare facilities have been limited during the conflict. Currently welfare benefits targeted at poor and vulnerable families such as Samurdhi (poor relief services) and pin padi (elderly support) applied in other parts of the country have not been available to the communities.

Some of the gaps in delivery of education, healthcare, transport that were experienced due to the lack of government services has been filled by NGOs. However, most of the NGO activities were geared towards humanitarian and relief support, housing and livelihoods programming. Post-tsunami their presence also increased in the east, and there was a greater focus on DRM. However since the end of the war most of the organisations are moving out of Trincomalee due to the emphasis on large scale infrastructure, increased government control of development programmes and distrust and negative views of NGOs by the political structures.

At the study sites, there was no mention of direct climate change adaptation-related work by other organisations. The local administrative officials indicated that this is an important area and some awareness had been raised on the need to address climate issues in their work but no activities are currently in place in these areas. For example, the community in Navatcholai stated that they were offered land and paddy seed for cultivation by the Agriculture Department but no advice was reported in terms of climate change adaptation from them or other sources, and this too can be seen as reasons for why communities are not willing to change their practices in relation to their main income sources.

Disaster management efforts have concentrated on tsunami-affected and other areas considered most vulnerable to disasters – as selected by

the local administrative officials based on disaster incidences. Through the DMC, disaster mapping has been carried out in 11 Grama Niladaris (there are 230 in the district) and 75 village level disaster management groups have been formed. The main focus at the moment is on emergency preparation (such as evacuation, early warning), while there has been some activities geared towards longer-term prevention and preparedness. This includes critical infrastructure strengthening: ten schools and five hospitals were assessed for flood tolerance, coastal green belt for cyclone protection – in a village, urban flood mitigation plans – for Trincomalee town) (KPI, DMC).

At present, the DMC personnel stated that they have not concentrated on climate change adaptation interventions, but see a dual role in some of the disaster interventions such as cyclone barriers, and urban flood planning. They have also carried out pilot initiatives to support the livelihoods – such as drought resistant paddy varieties, water supply schemes, training on organic farming (KPI DMC). They are also considering introducing an insurance scheme for farmers if they are able to secure funds.

As shown above, development initiatives, climate change and disaster related initiatives at a national level are very new and taking place in a compartmentalised manner, even though the connections maybe understood and acknowledged. This is due to these activities being divided amongst acts, policies and ministries that prioritise other development agendas (such as increased production, economic growth) as well as the objectives of donors and NGO programming. The integration of climate change into DRM is not yet officially supported by the policy frameworks and therefore not filtering down to the activities at local level. However this is slowly changing through discussions on including climate change information through the DMC structure.

3. The climate smart disaster risk management approach

With an understanding of the risks that the two communities face and the responses by OfERR, Christian Aid and the DMC, it is useful to apply the CSDRM approach to gather lessons on how to promote integration between climate change, DRM and poverty reduction in a conflict affected context. The CSDRM seeks to provide a holistic yet practical approach for considering how to improve DRM interventions for better development outcomes.

The CSDRM approach has been developed through extensive consultation with practitioners, policymakers and academics concerned regarding the impact of climate change on disasters with more than 500 people actively feeding into this process. The approach has been developed through a review of other approaches on disaster risk management and seeks to avoid duplication. Rather it builds on the emerging concepts and approaches with a focus on the Hyogo Framework for Action (HFA) and on Characteristics of a Disaster-Resilient Community: a Guidance Note (Twigg 2007).

The five priority action points from the HFA are embedded throughout the approach with a new dimension of integrating uncertainty by considering climate and weather information as well as traditional knowledge. Twigg's characteristics have highlighted the need to consider components of resilience as well as thematic areas such as: governance; risk assessment, knowledge and education; risk management and vulnerability reduction, and disaster preparedness and response. It also provides detail on enabling environments for the themes. This is helpful in identifying practical action for change at the community level. The innovation of the CSDRM approach is that it can be used at local and regional levels, it firmly integrates climate change and uncertainty, and it provides an integrated approach in a clear and straightforward manner for practical change to DRM practice.

A draft CSDRM approach was built through a review of key DRM, development and climate change adaptation frameworks and issues through literature reviews on: resilience (Aditya et al 2010); convergence of DRR and climate change adaptation (Mitchell, van Aalst and Silva Villaneuva 2010); and low carbon development and DRR (Urban, Mitchell and Silva Villaneuva , 2010). The approach seeks to avoid duplication. An expert writing workshop in February 2010 in the UK began the consultation process which gathered researchers, policymakers and civil society partners to rework the first draft of a CSDRM approach. These consultations occurred during meetings in eleven programme countries aimed at sharing experiences of integrating climate change into DRM practice. These experiences were gathered and practitioners were asked to present their work through regional consultation meetings in South Asia, South East Asia and East Africa in light of the evolving CSDRM approach and to test its clarity and discuss its use for programming and policy. Each regional consultation has seen a revised and updated version of the approach based on the feedback received through active workshop

sessions. Alongside the more than 500 people consulted through national and regional consultations, the approach has been developed through in-depth interviews during fieldwork in Cambodia (Polack 2010), India (Hedger et al 2010) and Sri Lanka (Ibrahim 2010; Ibrahim and Fernando 2011) which aimed to identify to what extent the CSDRM approach enhances development practice in a changing climate. The case studies have also sought to test the emerging approach at different spatial scales – regional, district level and local.

The CSDRM approach is a way of ensuring DRM activities are sustainable in a changing climate. In practice, CSDRM provides a guide to strategic planning, programme development and policymaking and helps to assess the effectiveness of existing DRM policies, projects and programmes in the context of a changing climate. It consists of actions and guiding questions that directly respond to the affects of climate change on disaster risk – by understanding and acting on changing hazards, managing increasing uncertainty and addressing the drivers of vulnerability. To respond to the effects of climate change on disasters risk, the CSDRM approach (see Figure 3.1) incorporates three pillars:

1. Tackle changing disaster risk and uncertainties.
2. Enhance adaptive capacity.
3. Address poverty, vulnerability and their structural causes.

Pillar One: Tackle changing disaster risk and uncertainties

Pillar one supports the priority areas of the Hyogo Framework of Action (HFA), highlighting the importance of collaboration between multiple actors. It calls for integrating information on risks by conducting detailed risk assessments which recognise the value of multiple sources of knowledge. It highlights the importance of increasing access to information by all stakeholders through education, early warning and the media while highlighting measures to understand and address vulnerability and the conditions creating risks. The CSDRM approach treats climate change as a key consideration and attempts to insert climate change into the most critical, climate-sensitive elements of the HFA given that climate change did not feature so strongly in the original HFA agreement. Pillar One (CSDRM approach, inside cover), highlights the five areas of action from the HFA while incorporating climate awareness.

Pillar Two: Enhance adaptive capacity

Adaptive capacity refers to our ability to manage change sustainably by strengthening resilience[3]. Promoting adaptive capacity means that institutions and networks learn and use knowledge and experience and create flexibility in problem solving (Scheffer et al 2000; Berkes et al 2003). The main characteristics which enhance adaptive capacity have been identified as: promoting diversity; creating flexible, effective institutions; accepting non-equilibrium; adopting multi-level perspectives; integrating uncertainty; ensuring community involvement; promoting learning; advocating for equity; recognising the importance of social values and structures and working towards preparedness, planning and readiness.

[3] The term 'resilience' is increasingly used in climate change and disaster discourses and in policies and programming related to these issues. It has become common to describe the intersection between these two fields and those of poverty and development as 'climate resilient development'. The SCR Programme recognises the difficulty in operationalising the concept of resilience and its multiple meanings and as such has chosen to focus on more tangible and practical dimensions of 'adaptive capacity'. Carpenter et al highlight that little attention has been paid to the operational indicators of resilience (2001).

Enhancing adaptive capacity is a key strategy for managing increasing uncertainty associated with a changing climate and allows people and organisations to respond to shocks and unexpected events more effectively. The CSDRM approach weaves together characteristics of adaptive capacity highlighted above and attempts to present these in a practical way.

Pillar Three: Address poverty and vulnerability and their structural causes
The third pillar is founded on the 'pressure and release' model (Wisner et al, 2004) and longstanding research that attributes the causes of disasters to failures in development (Bankoff et al 2003). Wisner et al's model treats root causes, dynamic pressures, unsafe conditions and hazards as all contributing to disaster risk. Root causes underline the importance of access to power, structures and resources. A lack of skills and institutions (markets and press freedom) coupled with macro forces, such as urbanisation and population growth, contribute to vulnerability.

In order to operationalise this approach in the field, each pillar (tackle changing disaster risk and uncertainties, enhance adaptive capacity and address poverty, vulnerability and their structural causes) has been broken down into several action areas, each of which suggest an action that is applicable to the integration of climate change, DRM and livelihoods. This approach has been developed so that it can be applied to different types and scales of policies and projects. It encompasses a range of actions with leading questions and examples of indicators that are devised from an ideal action and which can be used to assess if the integration has taken place and how the project or policy is tackling the challenges posed by climate change (See Figure 1).

The section below describes the application of the CSDRM approach to the CBDRM project funded by Christian Aid and implemented by OfERR between 2006 and 2010 in Trincomalee district in east Sri Lanka (see Annex 1 for a map of the district and case study sites).

3.1 Methodology

The objectives of the project as envisioned by OfERR in 2006 were to put in place a participatory disaster management process by which communities could strengthen their understanding and capacity to reduce disaster risks for their communities. At the midterm review, the opportunity was taken to explicitly incorporate climate change adaptation measures into the project. The main objective of the case study is to examine the extent to which the project integrated integrated climate change information and adaptation strategies into DRM and livelihoods interventions and to identify the challenges and lessons in adopting a climate smart disaster risk management approach. The case study will also look at influences of the external context which the project functioned (conflict, policy architecture, institutional support structures) and identify the challenges that the project encountered during its implementation.

The case study focused on the suggested actions in the CSDRM approach

developed in 2010 (Mitchell and Ibrahim), that were relevant to the objectives of the CBDRM project in Navatcholai and Sinnakulam in Trincomalee District. This is illustrated in Table 3.1 below:

Table 3.1: CSDRM approach applied to the CBDRM project

	Selected approach actions	Research questions
Pillar one	**Assess changing risk and vulnerability patterns** Vulnerability and Capacity Assessments – looks at the process used by the communities to identify their risks.	How were risks and climate related risks identified? Are climate risks understood as a connected/ integrated part of DRM work?
	Increase public awareness of climate change and disaster risks Education – looks at the role of the project to establish a well – informed/prepared community. Early warning and preparedness – looks at processes put in place to handle disaster preparedness systems and the links made to CCA. Proactive local institutions – looks at the support for the integration by other stakeholders.	How are communities/implementers accessing information on integrating DRM and CCA? How is this information and processes being used – in terms of Disaster management and integrating for climate change related threats? Are policies and organisations enabling or limiting the integration of CCA into DRM?
	Reduce exposure of livelihood strategies to changing risks Local Economy – looks at interventions put in place to encourage more sustainable livelihood options.	How did livelihoods related interventions address disaster and climate change issues?
Pillar two	**Creating flexible and effective institutions** Effective delivery - looks at the capacity of the project partners to tackle the concept.	What is the capacity available (among implementers and community) to carry out this integration?
	Promoting learning Iterative learning – looks at processes used by the project stakeholders as well as other external networks to share information and experiences.	What are the partnerships formed and how is the learning shared to increase awareness and information on DRM and CCA?
	Adopting multi-Level perspectives Linkages across scales – looks at this angle in terms of linking the project with other local and national level projects and policies.	Can local community level activities effectively link with other interventions / processes addressing disaster risk and climate change?

Table 3.1 continued

Pillar three	**Access to support services (Well-being)** Social protection/Safety Nets – looks at support to reduce poverty and vulnerability schemes in place that ensure poorest have some cushioning **Access to education and health** care – looks at other services that improve the quality of life These are explored inclusive of poverty and the conflict context	What are the support services that are available to support communities to reduce vulnerabilities? Have they been influenced by conflict? How has the conflict affected this integration process? How has it influenced access to education and healthcare? What measures were taken to address that?
	Promote access to structures, power and accountability Participatory decision-making – This was an important element in the CBDRM process	Were the decision-making processes used participatory?

Navatcholai and Sinnakulam were purposely selected in consultation with Christian Aid as sites to investigate the application of the CBDRM approach. They were two of the more successful applications of the integrated concept at ground level, and could provide a good understanding of how the project was implemented, the outcomes and areas for improvement, for these sites as well as others following the same concept.
The case study uses several data sources including secondary and primary data:

1. Secondary data (literature and project documents) to set the overall context and for project related information including implementation processes.

2. Primary data sources to capture views from various stakeholders (directly and indirectly involved) as well as to triangulate the information. Methods included:
    - **Key Person Interviews** with the implementing partners (Christian Aid and OfERR) to assess how they understood the objectives of the project, their role and capacity as promoters of the concept and implementers at the ground level, and their perspectives on the outcomes.
    - **Key Person Interviews** with stakeholders: Disaster Management Centre, local administrative officials and multilaterals working in disaster management and other support services to bring in views of overall integration of disasters and climate change as well as their engagement and observations on the project.
    - **Focus Group Discussions** with community members aimed to assess the communities' understanding of the integration and their consensus on the usefulness of the applications. The focus group discussions were conducted in both field sites with approximately 20 community members who were either a focal person in the CBDRM project or interested in sharing their experiences of the project.

- **Individual interviews** with community members were carried out to complement the focus group discussions in terms of further elaboration on project implementation process as well as to capture views from community members not directly involved in the project to assess their level of awareness and links to the project. Two to three interviews were conducted in each field site with community members who were not directly involved in the project.

An open invitation was extended to the community to participate in the focus group discussions. It was well attended but only a few members stayed throughout the process and this affected the consistency of the data. There was no explicit attempt to ensure that the focus group discussions had a range of women, men and a representation across age groups, rather it focused on ensuring that it has representatives from the CBDRM project. There was a balance between males and females, though little representation from youth in the community.

Some of the limitations to the data collection process included the presence of the project implementers during the discussions which could have restricted critical feedback from the respondents regarding the project. The need to translate resulted in a loss of greater elaboration of details. The primary data was collected through semi-structured questionnaires and a structured discussion guide for the focus group discussions. Conclusions were drawn based on the analysis of the interview data collected from primary and secondary sources in light of the CSDRM approach (Figure 1).

4. Findings: opportunities and challenges in implementing a climate smart disaster risk management approach

This section looks at how the CBDRM project through OfERR and Christian Aid met some of qualities of a climate smart disaster risk management approach as described in Figure 1. It seeks to draw out issues related to each pillar looking at how successfully the integration took place, and the effects of the external inputs of the enabling environment. This section draws mainly from the primary data collected through key person interviews and focus group discussions.

4.1 Pillar 1: Tackle changing disaster risks and uncertainties

The project purpose and objectives prioritised the integration of climate change adaptation measures (mid-term review) into the DRM activities as well as livelihoods related activities. However, in terms of converting these objectives into practice the results were mixed for both project sites – Navatcholai and Sinnakulam.

The knowledge of both communities has been reinforced by awareness and capacity building exercises through the CBDRM project. Both communities experienced various natural hazards as well as being severely affected by the civil conflict. Therefore their own experience gave them a good understanding of the impacts of crisis and risk factors on their lives and livelihoods. They are now also aware of the changing climatic conditions and the links to increased disasters, environmental degradation and scarcity of resources as a direct result of the CBDRM.

However, the experience from their past of repeated displacement and instability due to conflict means their understanding of DRM is heavily biased towards emergency preparedness, immediate relief and short term preventative measures as opposed to longer term risk reduction. This is coupled with the present focus on rebuilding their lives which can be a contributory factor to the types of short-term support (emergency relief, early warning) recognised and valued by the community. Increased attention to disaster preparedness has also come as a consequence of the tsunami, where the lack of early warning and the subsequent scale of the relief operation may have influenced this focus towards early warning and relief at a time of a disaster. This concentration on early warning however does not integrate climate and weather trends with local knowledge which is critical in gaining a long-term perspective of risks and hazards and building in long-term solutions.

The bias towards emergency relief measures was also evident in the types of activities the communities chose to undertake. The communities chose to implement activities within their means as most activities carried out did not require additional financial resources. For example, physical infrastructure support that could help prevent or reduce effects of disaster situations was not an objective of the CBDRM process. However limited support for drainage canals, better housing and the pilot interventions have

been provided and have helped to enhance ground level impacts of the project.

In terms of project delivery, whilst incorporating climate change at the mid-term review period enabled OfERR to incorporate climate change adaptation measures (wind and solar energy and organic model farm) the time lag between the inclusion of climate change information on changing risks as a focus area did limit how well integrated climate change was into the DRM activities. At the point at which the climate change objectives were added key activities such as the PVCA process had already taken place. Therefore assessing and preparing for future threats by triangulating climate, weather and local knowledge of climate risk was not fully incorporated into the implementation process and as a result most of the activities in place have not considered the changing climate risks. This could result in some of the preparedness activities being less effective, for example, with the potential of rainfall increasing beyond past trends the level to which houses have been raised may not be adequate for future floods. Therefore, the preparedness measures identified without triangulating climate, weather and local knowledge could fall short of dealing with the impact of changing disasters as a result of climate change. With the new toolkits developed by Christian Aid on how to include climate change adaptation into secure livelihoods (Ewbank 2010), there is an opportunity to strengthen the current CBDRM approach.

4.2 Pillar Two: Enhance adaptive capacity

Enhancing learning and community knowledge have been key components of the CBDRM process. The capacity at the community level which exists has tackled early warning and relief processes, but has not been able to address future impacts, long term preparation and sustainable development options.

Learning
The CBDRM project is driven on the premise that communities must determine their own actions using a classic participatory model of development. Integrating climate change into DRM activities, as well as building adaptive capacity requires technical support for engaging in a DRM process which is flexible, which integrates changing knowledge of risks and builds partnerships with other organisations who are addressing poverty, vulnerability and their structural causes. This holistic approach requires a change in practice which also requires effective monitoring and evaluation. Recruiting and retaining staff with training and knowledge on DRM and climate change to work in remote areas as well as local and small organisations (as opposed to international NGOs) was difficult due to their preference to work in larger, better known organisations.

Given that OfERR's original organisational objectives (in 2006) were different to those under the CBDRM initiative, they did not have specialised staff or skills in DRM or climate change. Therefore they developed their capacities as the project progressed. Limited in-house expertise on DRM

and climate change, lack of sufficient training and information can be seen as contributory factors that may have hindered better integration between DRM, climate change and poverty reduction in OfERR's project implementation. In addition the time span (three years) may not be adequate to develop the project to its full potential as the types of activities may have longer gestation periods and require time to be integrated. Furthermore, scaling up OfERR's CBDRM work to other communities would be a challenge for OfERR in terms of human resources. One of the enabling factors that assisted the project was that OfERR had already established a good rapport with the community through their previous work on tsunami relief and recovery that allowed them to mobilise and establish the CBDRM process on the ground.

For further adaptive capacity to be enhanced an explicit capacity building process for OfERR staff and Christian Aid is required. As one of the primary objectives of the project was to build capacity towards long term sustainable solutions, the development and implementation of capacity building activities could have paid greater attention to long term sustainability in their design and content. This requires further consideration by Christian Aid as an international NGO which supports local NGOs, such as OfERR, to move towards integration. Furthermore, the inadequate skills among the trainers and limited information sources in local languages are seen as barriers for effective capacity building to bring theory of CBDRM to practice. Another limiting factor has been the implementation process. Christian Aid as the promoters of this concept did not actively engage to streamline the activities with the objectives of the project. Currently, Christian Aid have developed a strategy targeting civil society organisations, partners and government institutions to introduce climate change adaptation and mitigation methods through the climate smart disaster risk management (CSDRM) approach described above. The planning ensures that all the stakeholders in the programme will be informed of the CSDRM approach and the integration of climate change into their organisational and programming work.

The DMC structure had and continues to have a presence at the local community level. This CBDRM project sought to link with these support structures to enhance the implementation. However the local level government structures and services, such as local administration, agriculture, health and education were reduced due to the conflict. In addition their mandates have a minimal focus on disaster risk management and climate change. The national disaster management structure is one of the few avenues that have specifically addressed disaster preparedness at community levels. Their activities have largely concentrated on early warning and providing relief to affected communities (KPIs DMC, Local Authorities). The NGOs in the area have concentrated on rehabilitation and relief rather than on DRM and climate change.

Therefore there is minimal external support for disaster and climate change action that could have enhanced the CBDRM project. Recognising these constraints as a result of the conflict and the very recent policy architecture

around DRM, OfERR are leading in their attempt to integrate climate change and development into their DRM work and perhaps could have better results if capacity building of staff was approached in a proactive manner to develop the needed skills in such a challenging context. Christian Aid's role in building the capacity of OfERR's staff to integrate climate change, DRM and poverty reduction requires more regular mentoring and monitoring and evaluation to gather lessons and challenges. More consideration on how to bring theory into practice at the local NGO level is required and is currently being developed within Christian Aid through a series of toolkits on integrating climate change adaptation into secure livelihoods (Ewbank 2010).

Emerging enabling environment

On a national level, the policies and relevant ministries and departments are compartmentalised and suffer from a lack of coordination both within and between institutions. This is not conducive to create an enabling environment at a national or local level where DRM projects are implemented. The relevant institutions are also still grappling with the integration of climate change aspects into their work and balancing it with their own mandate, time, expertise and understanding. Political interests and agendas also have a role in creating the enabling environment and initial mapping exercises need to take these contextual elements into account when designing interventions.

In terms of stakeholder involvement in the CBDRM project, the local authority structures were aware and involved in the national disaster management work. They were aware of the implementation process and were clear on their own roles and responsibilities. However the DMC personnel were aware of OfERR's resettlement work but not their involvement in the CBDRM intervention on the ground. OfERR however was also a part of the NGO network that the DMC coordinates. This intervention therefore has not been integrated as a part of the national level activities.

The cross cutting nature of climate change also means that actions for adaptation was and continues to be distributed among other sectoral line agencies. The disaster management structure has the network, the related links and vested interest to integrate climate change into their operational plans. However this is not clearly mandated into their plans at present. Similarly other development/poverty alleviation programmes are yet to adopt climate change related threats as a driver of poverty. This is an indication of the limited nature of mainstreaming climate change issues into other policy frameworks and implementation processes in Sri Lanka.

4.3 Pillar Three: Address poverty and vulnerability and their structural causes

One of the main drivers of poverty in relation to access to services has been the conflict. Since the end of the war in the east (2008) the communities have been receiving better services such as transport, health and education. The community has used the CBDRM process (especially the education and health groups) to address some of these gaps in service provision (such as taking steps to increase teacher cadre in village and

encouraging school attendance). These services contribute to increasing the quality of life, reducing vulnerability while also allowing them better support to deal with disasters.

The CBDRM process is essentially a participatory mechanism that helps communities to determine their own needs. This has been successfully established through this project in both sites. This led to both positive outcomes for the communities as well as has fallen short of well integrated approach to DRM. Both communities have used the CBDRM approach to address some of their priority needs such as early warning plans, shelter, and education facilities. However, this concentration on the short term has meant a focus on a limited range of disaster preparedness responses (immediate relief and short term responses) and has not focused on long term solutions that integrate climate change.

Given that it was a new concept for OfERR and the community, a greater balance between mentoring and allowing self-determination may have enhanced activities on ground. In terms of integrating disaster and climate change needs to increase the sustainability of livelihoods, there has been little impact for the two communities. Support to diversify income options and reduce risks has been beneficial to a few community members through the savings and loans schemes which have provided them support for entrepreneurial activities. The model farm and the alternative energy options aimed at improving agriculture livelihoods have been applied at the household food security purposes and have not been extended out to commercial farming. The short term priority is to re-establish their primary income sources and the community is not willing to take a risk to adopt alternative measures at this stage.

In addition, the type of extension advice and support (land, seeds, and subsidies) received through government structures too are encouraging conventional methods. The fact that the techniques promoted through the model farm are supporting household food security needs to be noted as a positive impact. Food security in a disaster context is important and the model farm could provide insights for further discussion on how food security can be ensured during crisis. Overall the CBDRM project has contributed towards addressing poverty and vulnerability and their structural causes in a complex conflict context and is moving towards a more integrated approach to DRM.

5. Conclusions and Recommendations

Investigating the CBDRM project in two communities using the CSDRM approach helps to identify how integrating climate change information, DRM and development is possible in a conflict affected context. It also offers insights into challenges and provides lessons in adopting an integrated approach.

It is clear that as a result of the CBDRM intervention there is increased awareness of climate change and disaster related issues within the two communities. The project has been successful in establishing CBDRM process in a way that has helped the communities to enhance their disaster related activities and has allowed them to adapt it to achieve other pressing needs (education services, for example). While community participation is a valuable component of this project, given that participatory methods are still a new concept in some contexts, greater project steering from Christian Aid to ensure widespread community participation, could have increased the focus on the ground. The capacity building elements of the CBDRM project have been able to build learning around climate change adaptation measures, but they have not been able to incorporate the full range of disaster, livelihoods and climate change connections in their programme of work – particularly in terms of orientating the communities towards more sustainable long-term livelihoods activities.

The fact that the project began as a DRM project, and only integrated CCA measures after the mid-term review means that these activities were seen as separate and not as integrated responses. The outcomes of this project reflect current trends and practices in the external context. At present, national disaster management activities have prioritised the establishment of emergency systems focusing on hazards such as cyclones and tsunamis while the changing nature of disaster risk in the country and the focus on climate change are at very early stages of development. The decades of conflict in the project sites have increased uncertainty, reduced services and have resulted in programming that is geared towards relief and short term planning. Therefore external support for the promotion of including climate information and adaptive measures was not available to complement the project activities.

The impacts of climate change adaptation (CCA) are new concepts and the integration into development and disaster agendas requires greater advocacy, more structured capacity building and hands-on involvement by Christian Aid, its partners and the community working together. The OfERR interventions have set a foundation that can be built up. Recommendations to OfERR and Christian Aid to maximise the integration of climate change, DRM and development activities are given below:

- Include climate information, weather trends and local knowledge in vulnerability and capability assessments in order to design interventions which take account of changing risk. For example, this information could inform long-term preparedness activities such as plinth levels to avoid

flood waters entering into homes or strengthening houses and rooves to withstand winds and cyclones. This process should also be iterative in order to track changes over time and measure how well solutions cope with the changes.

- Explicitly develop a capacity building process to promote an integrated approach to DRM. A process which seeks to increase the capacity of the partner community based organisations that Christian Aid operates through will be critical step in promoting a climate smart disaster risk management (CSDRM) approach. Christian Aid has recently developed a toolkit focusing on providing resources on planning for adaptation in relation to promoting secure livelihoods (Ewbank 2010). How this tool is rolled out with community based partners will impact their ability to streamline adaptation activities (organic model farm, solar and wind energy water pumps) into their CBDRM approach as well as to scale it up with other communities.

- Invest in local staff to build knowledge of DRM and climate change to retain staff able to work in remote areas. OfERR had established a good rapport with communities through their previous work on tsunami relief and recovery. This continuity with the communities facilitated the mobilisation and implementation of the CBDRM process on the ground.

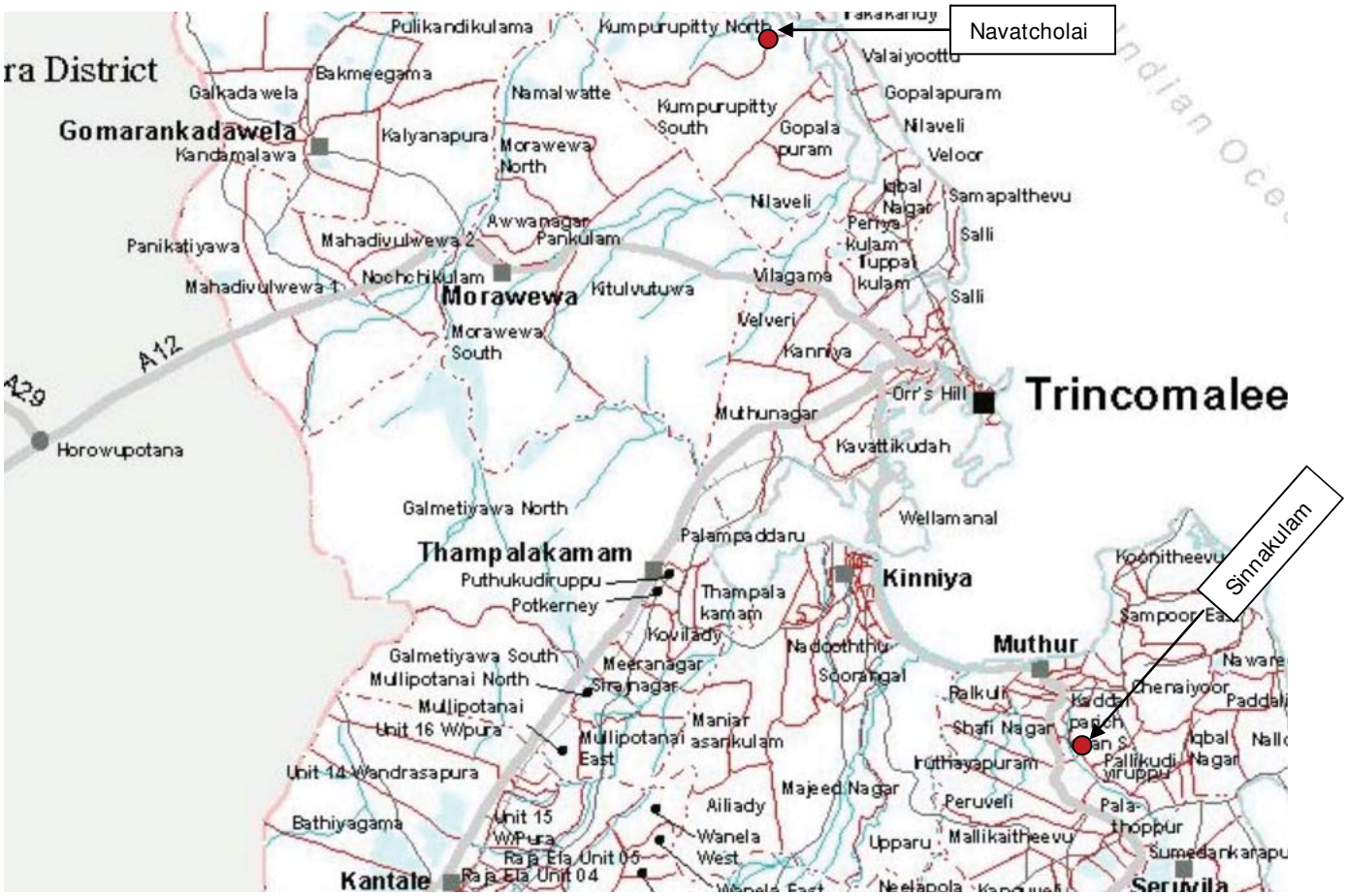
- The results of integrating climate change, DRM and development will require monitoring and evaluation (M&E) over the long-term. There is a need to ensure that M&E systems are in place which promote learning at the community and organisational levels.

- Develop stakeholder and governance mapping to gain a better understanding of the climate change, DRM and development policy architecture in which the projects operate. This will allow for identification of climate change, DRM and development champions within governance structures to facilitate networking and convening of local authorities, district officials, non-government organisations (NGOs) and community-based organisations (CBOs), and businesses. This is critical in a post-conflict context where the development of eastern Sri Lank has been prioritised through resettlement, rehabilitation, infrastructure, economic growth (industries) and governance (Government of Sri Lanka undated); identifying climate, DRM and poverty reduction champions within this eastern development agenda will help to facilitate a climate smart approach.

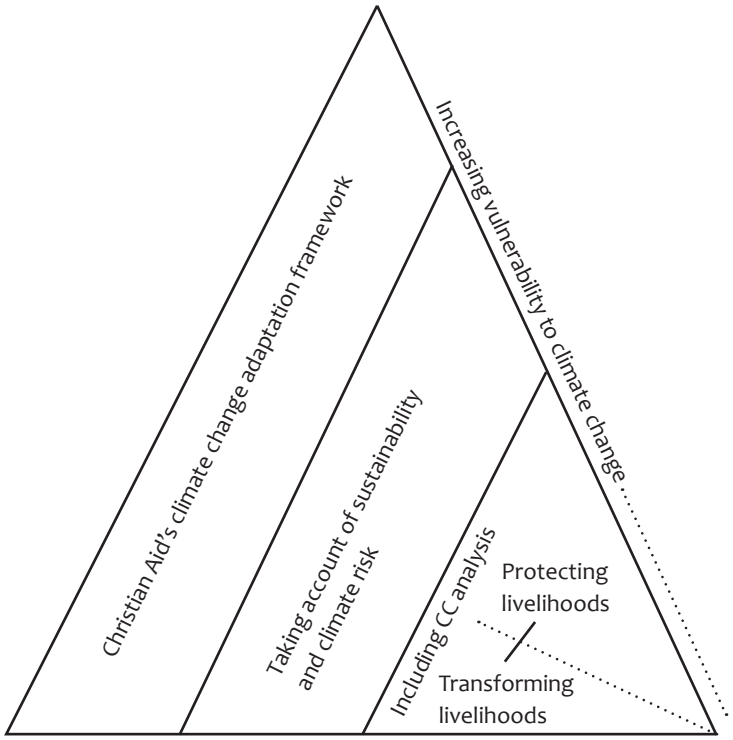
- Use district level DMC NGO network convening meetings as a way to advocate for community-led vulnerability and capacity mappings to inform the DMC's DRM agendas.

- Undertake governance mappings as a means to identify institutional structures and development trends in which programmes are operating in order to understand how to work more effectively within these constraints and opportunities.

Annex 1: Map of Trincomalee district and project locations



Annex 2: Christian Aid's Climate Change Adaptation Framework



The triangle represents the totality of Christian Aid's current secure livelihoods work. The smallest triangle includes work that aims to protect and/or transform the livelihoods of the poor, based on an explicit climate change analysis. Only work in the smallest triangle will be described as climate change adaptation. The more vulnerable people are to climate change impacts, the gerater the need to move Christian Aid's livelihoods work into this triangle.

The middle triangle shows livelihoods work that explicitly addresses sustainability, including climate risk and vulnerability, but that has not (so far) included a more detailed climate change analysis.

Over time, all our livelihoods work should build in an analysis of sustainability and move to either the middle or smalles triangles.

Adaptation is about empowering people to cope with the impacts of climate change. This includes both severe shocks to short-term climate variability, where our entry point will typically be through livelihoods development programmes. Climate change adaptation therefore learns from and draws on the complementary strengths of both disaster risk reduction and livelihoods programming.

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