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Learning from Recovery after Hurricane Mitch: Experience from Nicaragua

Summary report

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2009

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List of Acronyms

ACRA	Asociación Catalana de Recursos Asistenciales (Catalan Relief Association)
ACSUR	Asociación de Cooperación del Sur (South Cooperation Partnership)
ADEPROFOCA	Asociación para el Desarrollo Forestal Campesino de Dipilto (Association for Forest Development of Rural Dipilto)
AECI	Agencia Española de Cooperación Internacional (Spanish Agency for International Cooperation)
CCER	Civil Coordinator for Emergency and Reconstruction (of Nicaragua)
CCT	Conditional Cash Transfers
CDC	Comité de Desarrollo Comarcal (District Development Committee)
CDM	Comité de Desarrollo Municipal (Municipal Development Committee)
CENAGRO	Censo Nacional Agropecuario (National Agricultural Census)
CEPAL	Comisión Económica para América Latina y el Caribe (Economic Commission for Latin America and the Caribbean)
CEPREDENAC	Centro de Coordinación para la Prevención de los Desastres Naturales en América Central (Central American Coordination Center for the Prevention of Natural Disasters)
CIEETS	Centro Intereclesial de Estudios Teológicos y Sociales (Interfaith Centre for Theological and Social Studies)
CLUSA	Cooperative League of the United States of America
CODE	Centro de operaciones de desastres (Disaster Operation Center)
COSUDE	Agencia Suiza para el Desarrollo y la Cooperación (Swiss Agency for Development and Cooperation)
C\$	Córdoba
DAC	Development Assistance Committee
DANIDA	Asistencia Danesa de Cooperación Internacional / Danish International Development Agency
DIPECHO	Disaster Preparedness Programme of the European Commission's Humanitarian Aid Department
FAO	Food and Agriculture Organisation of the United Nations
FINNIDA	Agencia Finlandesa de Desarrollo Internacional (Finnish International Development Agency)
FISE	Fondo de Inversión Social de Emergencia (Emergency Social Investment Fund)
HIID	Harvard Institute for International Development
HIPC	Highly Indebted Poor Countries (Iniciativa de Países Pobres Altamente Endeudados)
IADB	Inter-American Development Bank
IDNDR	International Decade for Natural Disaster Reduction
IDR	Instituto de Desarrollo Rural (Institute for Rural Development)
INAFOR	Instituto Nacional Forestal de Nicaragua (National Forestry Institute)
INCAE	Instituto Centroamericano de Administración de Empresas (Central American Institute of Business Administration)
INETER	Instituto Nicaragüense de Estudios Territoriales (Nicaraguan Institute of Territorial Studies)
INIDE	Instituto Nicaragüense de la Información para el Desarrollo (National Development Information Institute)
INIFOM	Instituto Nicaragüense de Fomento Municipal (Nicaraguan Institute of Municipal Development)
INTA	Instituto Nicaragüense de Tecnología Agropecuaria (Nicaraguan Institute for Agricultural Technology)
LRRD	Linking relief, rehabilitation and development
MAGFOR	Ministerio Agropecuario y Forestal (Ministry of Agriculture and Forestry of Nicaragua)
MARENA	Ministerio del Ambiente y los Recursos Naturales (Ministry of Environment and Natural Resources)
MHCP	Ministerio de Hacienda y Crédito Público (Ministry of Finance and Public Credit)
MIFAMILIA	Ministerio de la Familia (Ministry of the Family)
MIFIC	Ministerio de Fomento, Industria y Comercio (Ministry of Development, Industry and Trade)
MINED	Ministerio de Educación y Deportes (Ministry of Education, Culture and Sport)
MINSA	Ministerio de Salud (Ministry of Health)

MSNM	Metros sobre el nivel del mar (metres above sea level)
NGO	Organismo no Gubernamental (Non-governmental organisation)
PASA-DANIDA	Programa de Apoyo al Sector Agrícola de la Asistencia Danesa de Cooperación Internacional (Danida Agricultural Sector Support Programme)
PIM	Plan de Inversión Municipal (Municipal Investment Plans)
PMA	Programa Mundial de Alimentos (World Food Programme)
POSAF	Programa Socio Ambiental y Desarrollo Forestal (Environmental-Social Programme for Development and Forestry)
PROCASITAS	Proyecto de rehabilitación social y ambiental con enfoque de cuencas (River basin social and environmental rehabilitation Project)
PROFOR	Proyecto Forestal de Nicaragua (Forest project of Nicaragua)
RPS	Red de Protección Social (Social Safety Net)
SC-SICA	Secretary General of the Central American Integration System
SDC	Swiss Development Cooperation Agency
Sida	Swedish International Development Cooperation Agency
SINAPRED	Sistema Nacional para la Prevención, Mitigación y Atención de Desastres (National System for Disaster Prevention, Mitigation and Response)
UCA	Universidad Centroamericana (University of Central America)
UCAFE	Cooperativa Unión de Cafetaleros de Dipilto (Cooperative Union of Coffee Growers of Dipilto)
UNAG	Unión Nacional de Agricultores y Ganaderos (National Union of Farmers and Ranchers)
UNDP	United Nations Development Programme
USAID	Agencia para el Desarrollo Internacional de Estados Unidos (United States Agency for International Development)
WFP	World Food Programme (of the United Nations)

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Executive Summary

Learning from Recovery after Hurricane Mitch is a review of how Nicaragua has recovered from Hurricane Mitch over the past ten years. The focus is on how relevant the assumptions and claims that were made in the initial recovery planning have been in light of subsequent development. After the hurricane the initial expectations of government, civil society and the international community were that recovery efforts would 'transform' Nicaragua. These assumptions have proven to have been wildly optimistic. Market upheavals and livelihood changes in rural areas have, over time, had more profound impact on recovery trends than aid. An understanding of the role of aid in recovery must therefore be anchored in a broad awareness of how development has changed the nature of poverty, vulnerability and risk. The findings of the research can be summarised as follows:

The roles of the state and civil society in disaster risk have been strengthened and clarified since Mitch, but challenges remain in the decentralisation process. In the early response to Mitch the international community played a very strong role, but over time the recovery process has been more influenced by the changing roles of the Nicaraguan state, civil society and the private sector. The turning point for the shift to a national process was at first assumed to be the 1999 Stockholm Declaration, but in hindsight it is clear that national ownership of disaster management, in all its forms, was primarily transformed by changes that emerged after the initial recovery phase. If a similar disaster was to occur today, the response would be entirely different due to the commitments to national coordination and collaboration that are now legally mandated. However, there are two fundamental obstacles to this process. First, disaster management and risk reduction remain very reliant on aid financing. Commitments to national leadership in these areas have not resulted in commitments from the national budget, which raises questions regarding sustainability. Second, progress has been made in planning for risk management, but implementation remains in the hands of municipalities, most of which lack capacity to act on these plans.

In some areas the economic recovery stimulated by Mitch has been successful, but this recovery and the overall post-Mitch reconstruction have had little sustainable impact on the livelihoods of the poor and most vulnerable. It was initially assumed that the process of recovery from Hurricane Mitch would not just be a matter of returning to 'normalcy', but would also address the factors related to poverty and related vulnerability to disasters. The primary vehicle for this development was expected to be commercialisation and economic growth. In some high potential areas this recovery agenda has stimulated considerable economic development. In areas with less economic potential little economic progress can be observed. The evidence from this study thus indicates that recovery aid can stimulate economic development under the right conditions. Those with the resources to take advantage of economic opportunities have in some cases been able to adopt less risk-prone livelihoods. But most of the poor and vulnerable, especially those who moved into the new houses built in the recovery period, have not experienced a transformation. These same limitations will affect adaption to climate change in Mitch-affected areas. Lessons from Mitch could be useful for building adaptive capacity, but there is limited evidence of their application. Rhetorical references to climate change in projects, programmes and plans does not prove that a long-term vision is in place.

The social fabric of communities affected by Mitch has been largely restored, community institutions have been modestly strengthened and in some cases greater gender equity has emerged. Hurricane Mitch uprooted thousands of households, moved communities and created new settlements. In most cases these upheavals have not led to major internal tensions in local communities. At municipal level, political polarisation has had serious impact on recovery and current risk reduction, but the Mitch effort has neither resolved nor aggravated these problems in any major way. Post-Mitch recovery (and the financial flows it provided) stimulated the creation of new community organisations. These have in some cases continued their work, providing a channel for relief efforts to deal with smaller droughts and floods, and managing social welfare programmes. While not self-sustaining, these organisations provide far better channels for such assistance than the international agencies which arrived directly after Mitch. New forms of clientelism and political patronage have, however, emerged through these organisations. Efforts to change gender relations have had some impact where agencies have been present for a long period and have worked closely with men and women within their communities.

Risk reduction is on the national agenda and capacities for risk management have been greatly strengthened, but weaknesses remain in understanding vulnerability and in finding sustainable

channels for local level risk reduction. When Mitch struck, disaster risk management was a relatively obscure and technical field of activity in Nicaragua. This has now changed enormously. Risk reduction has become far more integrated into the rural development discourse than before the disaster. The experience of recovery after Mitch has informed attitudes toward risk in a number of sectors and there appears to be genuine multisectoral commitment to engagement in the national disaster management structure. The immediate post-Mitch recovery efforts may have stimulated this process, but only indirectly. It is less clear whether these processes have actually reduced risk given the lack of capacities at municipal level mentioned above. The importance of addressing vulnerability is acknowledged, but there are few effective tools to integrate an analysis of vulnerability into risk management efforts. Many of the houses built in low risk areas after Mitch are now abandoned because their inhabitants could not find viable livelihoods. They have moved back to their former homes or other high risk areas. This illustrates how the emphasis on analysing hazards in post-Mitch recovery has only addressed part of the equation of risk.

These findings suggest that the links between recovery and vulnerability reduction cannot be found in the search for the 'right' project modalities. Building back better is a matter of recognising that pre-existing organisational capacities and processes are the greatest factors determining whose vulnerability is likely to be reduced and where sustainable change is likely to emerge. Only through a focus on livelihoods (rather than livelihood projects) and the socio-political structures that must underpin long-term commitments to risk reduction is it likely that genuine transformations can be fostered. In order to recognise these factors, agencies will need to develop greater humility about what can be achieved in the recovery phase and concentrate far greater attention to how recovery becomes a part of the development processes that were underway before the disaster and which will continue in the post-recovery phase. A major disaster such as Mitch can stimulate profound changes in how villagers, politicians and entrepreneurs perceive risks (not only related to 'disasters' but also markets, food security and a range of climate risks). But these changes are likely to be based on a local and national dialogue on priorities and poverty, and not necessarily on models inspired by the disaster response.

1. Introduction

1.1 Overview

Learning from Recovery after Hurricane Mitch is a review of how Nicaragua has recovered from Hurricane Mitch over the past decade. The focus is on how relevant the assumptions and claims that were made in the initial recovery planning have proven in light of subsequent development. The intention is to consider the aid response in the perspective of the broader trends that have driven recovery, including household, community and government initiatives and the wider economic and market related context. The research brings to light the different intentions and perceptions of 'development' that the relief, risk reduction and rehabilitation efforts were intended to link. The research is not evaluative in the sense of attempting to attribute causal relationships between the outputs and outcomes of aid interventions but rather analyses the relevance of aid efforts within recovery processes more generally.

After Hurricane Mitch the countries of the region and the international community agreed to act on an assumption that the recovery effort was an opportunity for 'transformation'. There have been major transformations underway over the past ten years, but the nature of these transformations has rarely been assessed with reference to original recovery objectives, emerging needs and changing priorities and the role of the Mitch response in contributing to these transformations.

The study explores how the transformations of the past decade relate to the objectives outlined in the "Stockholm Declaration", which provided a set of agreed principles among donors and affected countries in the Mitch response. The study assesses the extent to which these principles have been followed and also whether or not they have retained their relevance during the past decade. Analysis looks at the extent to which the transformations that have occurred have reflected the needs and opportunities for change that were revealed by Mitch, and also how other related processes, from decentralisation to climate change adaptation, have impacted on recovery.

THE STOCKHOLM DECLARATION

Hurricane Mitch that hit Central America in 1998 with devastating effects demonstrated the ecological and social vulnerability of the region. This natural disaster occurred when Central America had regained hope for a better future, after years of internal conflict, violence and deep economic crisis and had dedicated its efforts to the consolidation of peace, democracy and sustainable development.

Response from the international community was prompt and international concern was confirmed at the first meeting of the Consultative Group for the Reconstruction and Transformation of Central America that took place at the Inter-American Development Bank (IADB) Headquarters on 10-11 December, 1998, in Washington D.C. The Presidents of Central America made clear their view of the tragedy as a unique opportunity to rebuild – not the same – but a better Central America. They reiterated their firm commitment to continue to consolidate peace and democracy in their countries, and to seek higher levels of equitable growth. The Presidents referred to the progress made towards sustainable development and affirmed their wish to reinforce the foundation of this development. The Presidents also reiterated their support to the process of regional integration.

At this second meeting of the Consultative Group, held in Stockholm 25-28 May 1999, the Governments of Central America and the international community have committed themselves to sharing the responsibility for achieving the reconstruction and the transformation of the countries concerned, thus establishing a long term partnership guided by the priorities defined by the Central American countries and based on the following goals and principles:

- *Reduce the social and ecological vulnerability of the region, as the overriding goal.*
- *Reconstruct and transform Central America on the basis of an integrated approach of transparency and good governance.*
- *Consolidate democracy and good governance, reinforcing the process of decentralization of governmental functions and powers, with the active participation of civil society.*
- *Promote respect for human rights as a permanent objective. The promotion of equality between women and men, the rights of children, of ethnic groups and other minorities should be given special attention.*

- Coordinate donor efforts, guided by priorities set by the recipient countries.
- Intensify efforts to reduce the external debt burden of the countries of the region.

To respond to the magnitude of the challenge faced by this new partnership, the partners agreed to provide all parties with continuous follow up and information on progress in Central America's reconstruction and transformation, with respect to the previously stated goals and principles. Initially Canada, Germany, Spain, Sweden and United States have agreed to begin the consultation process to establish or strengthen a country-based mechanism working with each nation, including its civil society.

Other donors and international institutions are expected to participate in each country. Consultations also will be undertaken with the Secretary General of the Central American Integration System (SC-SICA) to include regional progress as well. It is anticipated that international financial institutions and international organisations will support this process.

This Declaration reflects the mutual understanding reached at this second meeting of the Consultative Group and will provide invaluable guidance for common efforts for the reconstruction and transformation of Central America. The historical importance of this meeting is expressed by the high-level representation from both Central American governments and the international community. With the challenges and prospects of the new Millennium ahead of us, we welcome this Declaration as a substantial support towards securing a better future for present and coming generations of the peoples of Central America.

Agreed upon in Stockholm, 28 May, 1999

Closely linked with the many socio-economic changes evident in Central America are the impacts of environmental changes. Deforestation and land degradation are among these, but the most prominent change is climate change. The study looks at the integration of disaster risk reduction into recovery responses and asks whether this has reduced vulnerability to climatic, economic and other risks. Related to perceptions of risk, this study ultimately seeks to understand whether a long-term approach to risk reduction has emerged. Such a perspective is part and parcel of disaster risk reduction, but does not typically fit with the traditional understanding of disaster management, with its heavy emphasis on relief response.

1.2 Methods

The research has been led by researchers who have been involved in studying a wide range of relief and recovery efforts after Hurricane Mitch in Nicaragua. The collaborating institutions are Nitlapán, at the University of Central America in Managua, Glemminge Development Research in Sweden, and the Stockholm Environment Institute.

Data collection has concentrated on understanding how the claims and assumptions of development policies have changed during the preceding decade as experienced by a wide range of stakeholders. These perceptions are placed in the perspective of the macro- and micro-economic trends in the hurricane affected areas. Oral histories have been collected to understand how individuals and organisations that were engaged in early relief and recovery efforts have developed their perspectives over time. Those who received support after Mitch have been interviewed to analyse whether these efforts related to the types of livelihood strategies that they now pursue. This data collection has highlighted how individuals, enterprises and organisations that were affected by the disaster have managed their own recovery process and addressed new opportunities and challenges. The research process has consisted of the following steps:

- The study began with a desk review of the original recovery plans and early evaluations of the disaster response resulting in a synthesis of the 'policy narratives' embodied in these documents. This has been contrasted with a review of the policy frameworks that are in place ten years after the disaster, with particular attention to changes in disaster risk management legislation and sectoral programming structures.
- The lead and associate researchers have conducted interviews with key stakeholders in national and local government, civil society and the private sector in Nicaragua, as well as selected representatives of the international aid community.
- Field work was conducted in three municipalities that were affected by Hurricane Mitch.

- Draft findings were presented to key stakeholders at national level and in the three municipalities to obtain feedback.

A territorial approach has been applied looking at three areas of Nicaragua that were heavily affected by Mitch and which all experience other disaster risks, but which represent differing political and economic settings. This territorial approach highlights how public, private and civil society actors, as well as the rural population, have interacted over the past decade in the reconstruction process. The report seeks to identify the similarities and differences in the rehabilitation process among these three regions in order to verify which processes can be attributed to the Mitch recovery process itself and which can be attributed to other socio-economic and political trajectories.

Field work included three components: First, identification of the local perceptions of poverty; second, classifications by affinities; and third, application of tools to focus groups. A careful selection was made of where and with whom to undertake research on local perceptions of poverty in order to obtain rigorous perspective that can be valid for a wide group of communities and locals interviewed. One of the prevailing issues when defining the various levels of household well-being includes the sources of livelihood. These are addressed from three perspectives: First, as a human right to a decent standard of living; second, as the means to live and act; and third, as the capacity to access the required opportunities in the search for happiness. Thus, local perceptions of poverty derived from this methodology deepen understanding of the social processes that generate poverty.

A second field research technique involved classification by affinity to learn the way social capital relates to poverty. The classifications of social networks in the communities identify who is part of each network and the issues important to its members. Data collection was undertaken in nine communities, where classifications by affinity or relationships, as well as classifications of well-being were made. The knowledge generated highlighted the fragmentation and integration of social networks in the community. It helped determine whether there was a correlation between being a member of a network, participating in the local organisation and having access to the benefits of development projects. Furthermore, it led to a deeper understanding of how the local leadership and social control operate. By combining the knowledge of social networks with the levels of well-being, it was possible to define whether poor families had social networks connected to or isolated from local organisation and leadership. Formal networks were identified by listing the various local committees working in the community and describing the functions of each. Interviewees were asked about the experiences that motivated the population to meet and organise, and whether these experiences were successful or had failed, and why.

1.3 Report structure

This report begins with a review of the overall findings of the study. Chapters two through five present the findings based on the four sets of research questions that provided the focus of the study.

Chapter two explores how the state and civil society regained their capacity to lead recovery, development and risk reduction, and the role of aid agencies in this process. This includes assessment of how decentralisation has impacted on decision-making at local level and whether a consensus has emerged over the past decade in the recovery and development models of aid agencies and national/local actors.

Chapter three considers the impact of recovery efforts on poverty, livelihoods and economic recovery. The emphasis is on how economic actors have revived and reassessed their activities after Hurricane Mitch, and the role of aid in contributing to this process. Lessons are drawn from the current range of livelihood opportunities and economic activities regarding the relevance of reconstruction investments. The findings highlight to what extent recovery programming has been realistic and cognisant of the different approaches needed to address short term transient poverty versus more ingrained chronic poverty, and to what extent there has been an integration of recovery efforts with national policies to promote pro-poor growth and consolidate social protection.

Chapter four considers how the recovery effort contributed to rebuilding the social fabric, most notably how communities that were shattered by Hurricane Mitch have rebuilt their internal relations. Questions are raised regarding to what extent housing and reconstruction programmes have resulted in functional communities and if they recognised challenges related to inequalities and social alienation. A core aspect of this is how the micro-politics of local social relations have encouraged or hindered recovery.

Chapter five assesses if and how the recovery process has contributed to the reduction of risks from natural hazards and conflict, most importantly how the three sets of factors discussed in the preceding chapters have increased or reduced the risks of future 'natural disasters' or conflicts. Experience is reviewed regarding whether the increased attention to risk reduction created by Hurricane Mitch contributed to sustainable commitments by governments, civil society and the aid community. A major aspect is whether the growing recent interest in climate change mitigation and adaptation resulted in synergetic and renewed attention to the challenges of disaster risk reduction.

Chapters six and seven present and compare the empirical findings from the three municipalities analysed in the study:

- *Dipilto*, a municipality in the mountainous Segovias near the border with Honduras, which has been highly successful in developing a market for coffee and has relatively high apparent levels of social capital.
- *Terrabona*, the poorest municipality in the department of Matagalpa, which has experienced a combination of significant recovery in commercial, irrigated areas with continuing environmental degradation in dryer sloping land.
- *San Francisco Libre*, a very poor rural municipality near Managua that received high levels of aid but has not recovered significantly.

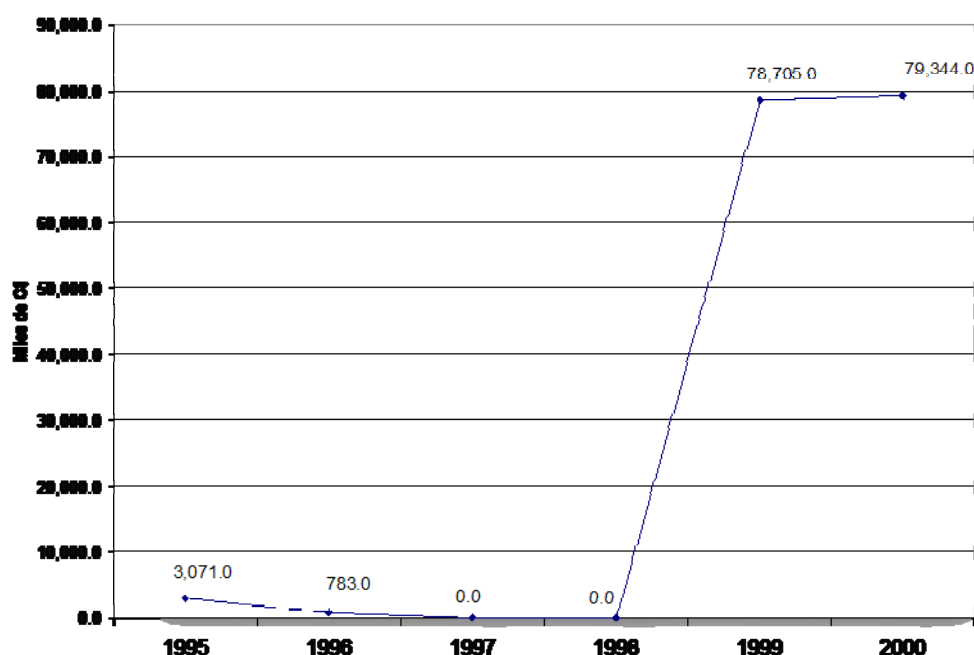
2. The Return of the State and Civil Society

2.1 Mitch: Not just another hurricane

Hurricane Mitch was the most damaging meteorological event to occur in the Central American region in recent decades. It was estimated that 9,000 people died and 11% of the population of Central America was affected. Nearly half a million people were displaced. Damages were estimated at USD six billion, affecting poor semi-subsistence rural farmers, commercial agriculture, urban dwellers and basic infrastructure. Aid response was also unprecedented, with over USD nine billion pledged for relief and recovery. In the specific case of Nicaragua, losses were estimated at 3,000 deaths, 50,000 damaged homes and considerable destruction of schools and health facilities (ECLAC 1999). 59% of Nicaragua's municipalities were affected. The flow of aid to Nicaragua was also significant, with over USD two billion being provided between 1998 and 2001. (Mansilla 2008)

After the emergency phase, interventions centred on building and repairing homes. The housing programmes after Hurricane Mitch, which replaced many makeshift dwellings, actually addressed a severe housing deficit that existed before the hurricane. The disaster brought this problem to light and provided an opportunity to solve it. In the three municipalities visited, most families who received homes were found to have been in one of the following situations prior to Mitch: a) living in improvised dwellings built in disaster-prone areas, i.e. slopes and stream or river banks; b) living as resident labourers on the land of local farmers; and c) living with relatives, especially young couples living with their parents. The housing deficit stems from pre-existing poverty among the population and the lack of public investment in housing up to Hurricane Mitch, as illustrated below:

Graph 1. Public expense allocated for housing in thousands of C\$ (1995-2000)



Source: Ministry of Finance and Public Credit (MHCP)

At national level the percentage of families living or staying with relatives or others, or in loaned or rented homes decreased after Hurricane Mitch, possibly due to housing programmes that resulted from these reconstruction projects. It is worth mentioning that the percentage of homes without title deeds or received in exchange for services rendered increased. The proportion of homeowners with title deeds showed a decrease, probably because in absolute terms this type of home did not experience major changes; rather, their number decreased due to the increase in other types of homes.

Table 1. Percentage distribution of homes before and after Hurricane Mitch by area of residence and type of home

Type of home	1998			1999		
	Total	Urban	Rural	Total	Urban	Rural
Total	100.0	100.0	100.0	100.0	100.0	100.0
Homeowners with title deed	42.3	53.6	38.2	37.9	51.3	32.8
Homeowners without title deed	31.8	23.2	34.8	38.6	28.6	42.4
Home loans being paid off	0.2		0.2			
Ceded or loaned	10.3	7.9	11.0	7.3	5.8	7.9
Received for services rendered	4.9	0.7	6.4	7.7		10.6
Living w/relatives and friends	7.7	5.3	8.6	5.7	6.5	5.4
Rented	3.0	9.3	0.7	2.5	7.8	0.5
Other				0.4		0.5

Source: National Institute of Statistics and Censuses (INEC), 2000.

2.2 Humanitarianism and beyond

This study emphasises developmental perspectives on recovery after Hurricane Mitch, but it is essential to recall that the initial massive aid response was a humanitarian operation. The 'relief phase' was dominated by huge donations, which in many respects required bypass structures in order to move aid fast. These continued until larger recovery efforts began one or two years after the hurricane. In this initial period the state and civil society were often ignored and sometimes treated as an obstacle to the international relief operation. Due to the recent experience of conflict the international humanitarian community was wary of working closely with national institutions. Failures to maintain humanitarian principles in the chronic political emergencies of the Great Lakes and the Balkans a few years before influenced humanitarian agencies. Hurricane Mitch was a natural phenomenon, but there was uncertainty about whether the disaster it caused was to be treated as a 'natural' or a 'man-made' disaster (Christoplos, 2000). The political complexities of the disaster response and the intense societal polarisation were apparent to the many agencies arriving after Mitch.

Humanitarian principles were not the only reason for bypassing state structures. The neoliberal policies of the government and efforts to adopt the strict conditions for debt relief demanded by the Heavily Indebted Poor Countries Initiative (HIPC) meant that state capacities to engage in relief and recovery were very constrained.

All of these factors were interpreted by many international agencies as suggesting that Nicaragua was a country where the humanitarian community could do as it pleased. The Stockholm Declaration was in many respects a reaction against this over-rampant humanitarianism, but which at the same time acknowledged that state capacities were indeed limited and that transparency was a problem. Although there was an early realisation, embodied in the Stockholm Declaration, that the response to Mitch needed to primarily be one of recovery, rather than relief, there was little acknowledgement among the operational agencies on the ground in the first year after the hurricane that participation of the institutions of the state and civil society was part and parcel of this recovery. The recovery phase was interpreted as primarily consisting of 'bricks and mortar' projects chosen and implemented by international agencies.

In the period directly after Hurricane Mitch, the state in particular was seen as more of an obstacle than a vehicle for appropriate recovery, and indeed in the first days after the hurricane the Government of Nicaragua tried to play down the impacts of Mitch. President Alemán dismissed the pleas for assistance of the mayor in Posoltega, the municipality hardest hit by the hurricane, as being "crazy". His reaction is still remembered and has become a symbol of the nadir of what was seen as a neo-liberal refusal by the state to shoulder its basic responsibilities for the safety of the population. The fear of making commitments that would breach the ceilings on public expenditure required in the delicate HIPC negotiations that were under way at the time were widely perceived as being at least partially responsible for the desire of the government to avoid responsibility for disaster response.

Alemán's denial of the disaster was reversed after four days when it had become apparent that (a) the disaster was far greater than initially assumed and (b) international aid could result in Mitch actually being a net resource rather than a net drain on state finances. Competition quickly ensued between the state and civil society over who would lead the national relief and recovery effort.

The international aid community in many respects portrayed Mitch as a 'socio-environmental' disaster resulting from local conditions and requiring micro-level social and environmental 'fixes' (Chamizo Garcia, 2000; Holt-Giménez, 2002). This underpinned a discourse founded on chosen environmental *solutions* rather than the political, economic and social *processes* of recovery. By comparison, national political actors and civil society almost immediately recognised the political nature of the disaster. Societal and environmental vulnerability were seen to be more than a failure to adopt appropriate natural resource management methods. Instead, competing environmental paradigms were seen as a reflection of unsuitable or incomplete political visions of development. The reassertion of national control over the recovery agenda was in many respects a reassertion of these political agendas. Mitch began with a relief and early recovery effort that pushed aside national actors, but it quickly became an arena for a new and polemic national debate.

Today, even among humanitarian organisations, the role of the international community has returned firmly to that of acting as a financier or auxiliary of national and local government and civil society. The principles of the Stockholm Declaration have been long forgotten, but structures and actions are far closer to these ideals than they were during the actual Mitch response. Despite considerable frustrations with different aspects of governance, the need to support the state to shoulder its responsibilities is fully acknowledged. The governmental body which was created after Mitch for disaster risk reduction and

response, SINAPRED (*Sistema Nacional para la Prevención, Mitigación y Atención de Desastres* - National System for Disaster Prevention, Mitigation and Response) and the municipalities have been criticised for some aspects of their performance, but this is now seen as a reason to support them further, and there are no longer calls for bypass solutions.

2.3 Decentralisation, but to whom?

A major reason for the initial bypass structures of the international community during the relief and recovery process was the prevailing uncertainty about who was actually supposed to do what in natural resource management in rural areas. Even if they wanted to do more, the central government ministries were so slimmed down as part of structural reforms that attention naturally turned to how to decentralise to local actors instead (Christoplos, 2000; Christoplos, 2004). For civil society the appropriate solution was frequently portrayed as one of simply channelling resources through them rather than the public sector. The Civil Committee for the Emergency and Recovery (CCER) and many international NGOs tended to equate decentralised local ownership and participation with working with national NGOs. This was questioned in many arenas due to a lack of representativeness, internal democracy, and tendencies toward clientelism within civil society (Frühling, 2002). The oppositional role of civil society was also seen as discouraging practical engagement with local government (Frühling, 2002). The struggle between the state and civil society over leadership of the post-Mitch agenda was primarily focused on Managua and in relations with the international community. Dynamics were very different in the countryside where recovery was linked to the interplay between decentralisation and efforts to reduce the environmental risks revealed by Mitch.

A study of decentralised natural resource management in Nicaragua, conducted just before and after Mitch, points out that the literature on decentralisation says little about natural resource management. Furthermore, the literature on natural resource management, while highlighting the role of often vaguely defined 'communities', says little about the role of municipalities (Larson, 2002). One could add that the literature on disasters and risk has increasingly stressed the importance of 'good governance', but tends to be rather vague about levels in which this governance needs to be 'good' (apart from again emphasising the role of 'communities'). Given its characterisation as a socio-environmental disaster and the strong emphasis on decentralisation in the Stockholm Declaration, it is notable that reviews of the Mitch experience are generally vague about decentralisation and local governance.

In Nicaragua, many aspects of natural resource management and disaster risk reduction have indeed been decentralised to municipal levels, with strong support and encouragement from the donor community. The underlying assumption of some of these efforts is that aid can finance planning and training, which will in turn lead to implementation using municipal resources. In practice, the reliance on project funding has resulted in fragmentation, with most areas receiving little assistance. As will be analysed later in this report, investments from municipal budgets in implementing risk reduction plans are insignificant.

Paradoxically, there are considerable unused resources for municipal environmental and risk reduction activities. Serious bottlenecks related to municipal capacity exist and have not been solved by the decentralisation support that followed Mitch. Most municipalities, with the partial exception of larger urban areas, have virtually no resources to invest in retaining and mobilising the trained staff required to transparently administer funding and manage the gap between planning and implementation. The international community does not fund recurrent costs and in most cases can only allocate a small proportion of risk reduction resources in longer-term development of municipal capacities. Donor agencies interviewed recognise this gap but there is no apparent solution to this bottleneck between initial planning and fostering the capacity to implement.

In the decade since Mitch many Central American aid projects, including those of the Disaster Preparedness Programme of the European Commission's Humanitarian Aid Department (DIPECHO), have increased their cooperation with municipalities. This has, however, not necessarily encouraged ownership and sustainability since the municipal authorities have not seen risk as a priority and since there has been high turnover of local government staff (Lavell, *et al.*, 2008). The latter is probably due to the tendency in many places for disaster risk reduction to be assigned to only one mid-level staff member in the municipal bureaucracy.

Interviews with agencies and findings from the municipalities strongly stress that decentralisation is both the main solution and the main obstacle to sustained emphasis on strategic objectives, particularly with regard to disaster risk reduction. The only way that programming can become sustainable is if

municipalities allocate significant and steady flows of resources. Funds from central government are not reliable. This study has, however, found no examples of such sustained commitments from local government. Human resources have been developed and lost, primarily due to changes of staff. Budgetary allocations have been limited and unreliable, with several contributing factors being cited:

- municipalities give priority to visible urban investments (electricity, roads, parks, etc.) at the expense of less visible rural investments related to risk;
- risk reduction and climate change adaptation are perceived as abstract and subject to uncertain political benefits (despite large donor-funded investments in hazard and risk mapping);
- increased public awareness of risk has not necessarily resulted in pressure from political constituencies for greater investments in risk reduction;
- municipalities have very limited investment funds that can be reallocated since the vast majority of their resources are tied to recurrent costs;
- risk reduction is often perceived by municipal officials as a responsibility of outside agencies; and
- there are a large number of plans being developed at municipal level which should include disaster risk reduction but which tend to overwhelm the capacities of the municipalities to coordinate and implement.

2.4 Capacity development did not start or end with Mitch

A weakness in humanitarian approaches to capacity development is that international agencies, struggling to find capable 'implementing partners', embark on one-off training programmes that are not linked to the capacity development process that was underway before the disaster and which must continue without external support afterwards (Christoplos, 2005). Some technical skills may be developed through quick-fix approaches, but sustainable impact on organisational capacities, institutional structures and analytical capacities requires longer-term perspectives. One of the reasons that the socio-environmental factors came to fore so quickly after Mitch was that there was a long history of investments in developing capacities for environmental management in Nicaragua. The Nordic countries and Switzerland had been supporting capacity development in environmental issues for many years (see, e.g., Frühling, 2000). Indeed, the most influential analyses regarding how different agricultural systems could withstand the effects of Mitch were possible because of Swiss-supported research that was underway before Mitch and which therefore could provide solid data on the impacts of the hurricane on different natural resource management systems. Such programmes developed further after the initial recovery period and still provide some of the most important support to environmental analysis in Nicaragua.

Outside of the environmental sector, significant disaster-related capacity development efforts have been made over the past decade, but have tended to be more *ad hoc*. The evaluation of DIPECHO programming in the region notes that sustainability, relying on national ownership, is still very weak and the programme is described as 'filling a gap' (Lavell, *et al.*, 2008) ten years after Mitch.

It is important to stress that capacities are not just an issue for the state and civil society. In almost any major post-disaster recovery it is through private sector engagement that the vast majority of livelihood opportunities will emerge. The aid effort after Hurricane Mitch focused its support to the private sector in recapitalisation of selected enterprises in the agricultural sector and providing for public goods in the form of transport infrastructure. Private enterprise then proceeded with its own recovery process wherein the impacts of Mitch became rapidly diffused into the more immediate problems of falling commodity prices, drought and other factors. A 2004 report on the horticultural industry, which had been heavily affected by Mitch, devoted very little attention to the hurricane, risk, hazards, etc. (IICA, 2004). This is not to say that investments in developing organisational capacities within the private agricultural sector have been lacking. Mitch support to agricultural cooperatives has indeed been some of the most sustainable investments from the recovery period (as exemplified in the findings regarding Dipilto presented later in this report). What is notable here is that risk and vulnerability have not been major features of this programming area.

2.5 Coordination and LRRD

The Stockholm Declaration was a groundbreaking approach to linking relief, rehabilitation and development (LRRD) as it lifted the process above relatively technical concerns about who should do what and when, to instead acknowledge that LRRD is a political process requiring political leadership, direction, integrity and open dialogue. The primary goal with regard to 'linking' in the early years after Mitch was to achieve enhanced coordination in two respects; *among* aid agencies (now generally referred to as 'harmonisation') and *between* the international community and Nicaraguan actors (now generally referred to as 'alignment'). A genuine LRRD process must be part of the development agenda, which in turn requires harmony and alignment with the principles of the Paris Declaration on Aid Effectiveness. The response to Mitch was unique in that the Stockholm Declaration was a precursor to many of the concepts that were later espoused in the Paris Declaration, most notably those commitments related to national ownership, coordination and accountability.

There are, however, some differences. The Stockholm Declaration made clear commitments to reducing social and environmental vulnerability and had an explicit human rights perspective. These are lacking in the Paris Declaration, which can be interpreted as evidence of a growing gulf between the ownership/accountability focus of the Paris agenda and parallel changes in relation to the architecture of response to climate change and human rights abuses. In the late 1990s there was a faith that ownership of goals related to rights and risk reduction could be cemented through a declaration. The experience of recovery after Mitch, where commitments to rights and risk reduction never assumed the intended status, can give clues to why the current discourse on harmonisation and alignment has given these seemingly core issues considerably less prominence.

Reviews five years after Mitch stressed that there had been many good projects, but these did not create the institutional linkages and coordination that were needed (UNDP, 2003). A multitude of plans were made, but these have seldom been consolidated into strategies or disseminated to those actors who would be involved in implementing them (UNDP, 2003; Lavell, *et al.*, 2008). Though policies were put into place that could be a basis for harmonisation and alignment, small projects prevailed on the ground and there was little attention given to budgetary processes (UNDP, 2003).

There are reasons to fear that the need to focus aid efforts in the spirit of the Paris Declaration on Aid Effectiveness may have detrimental impact on issues that are not high on the agendas of either donors or line ministries. Disaster risk reduction is an example of a 'priority' that tends to fall between the cracks at both levels. Some donor coordination structures have actually issued statements criticising actions related to emergency response and food security as a diversion from the former emphasis of sectoral support to agriculture on economic growth (Anson, 2007). Indeed disaster risk reduction promoters have noted that the shift to Paris Declaration modalities has meant that sustainability is particularly problematic in Nicaragua since disaster risk reduction has not been truly accepted as a government priority (Lavell, *et al.*, 2008). This is evidenced by lack of government funding for core institutions and insufficient allocation of counterpart funds.

3. Poverty, Livelihoods and Economic Recovery

3.1 New trails on the rural development road map

In early 1998, before Hurricane Mitch, the Ministry of Agriculture and Forestry (MAGFOR) developed a "Road Map for Modernizing Rural Nicaragua", which charted a largely technocratic and neo-liberal path to agriculture-led economic growth and poverty alleviation. At the time, this road map was seen by donors as an innovative vision for restructuring the agricultural sector to reflect prevailing realities and governmental capacities. In that document little mention was made of the need for targeting the poor and there was virtually no mention of the environment. These issues were expected to be addressed by market forces. In the years that followed Mitch these policies changed. It is impossible to fully verify how much the disaster impacted on policy, but it is clear that the hurricane stimulated a rethink. The changes that occurred in the "road map" and associated policies illustrate how a disaster, such as Mitch, can inform policy and the extent to which pre-existing policies impact on post-disaster perceptions of vulnerability and how poverty should be alleviated.

Initial priorities for post-Mitch rural rehabilitation focused in provision of inputs, capital and rehabilitation of rural roads, primarily for the coffee sector (Secretaría de Cooperación Externa, 1999). There was little explicit mention of the “road map” as providing a guide for post-Mitch programming since the disaster response was seen to merely require a rapid recapitalisation effort followed by a return to ‘business as usual’. The rush to start early rehabilitation activities and the pressures to have a proposal ready quickly for donors in order to earmark a significant proportion of pledges for rural development meant that a ‘quick and dirty’ proposal was submitted to the first donors’ conference organised in December 1998. Little of that initial plan was ultimately implemented, but it showed governmental commitment to making sure that recovery was not just seen as a matter of rebuilding infrastructure and housing. Rural development had entered the equation, which in turn eventually opened the debate to discussions of rural risk and vulnerability.

By the following year, Mitch had led to greater reflection on the part of MAGFOR and at least partial recognition that the road to recovery and rural development was plagued by many large “potholes”, i.e., market failures that would not be repaired by a sole focus on further liberalisation (Government of Nicaragua, 1999). The environment was back on the agenda; primarily with a new found emphasis on tree planting and the use of perennial crops on sloping land (this coincided with MAGFOR receiving an expanded mandate in 1998 to be responsible for forestry). There was also the start of an analysis of the links between vulnerability, which was now acknowledged as being related in part to unequal distribution of income, and disaster risk. MAGFOR also admitted that Nicaragua’s safety net was “tattered” and that this required action within the rural development sector and not as a separate social welfare issue.

The new approach was, however, presented as a “sequel” to the road map rather than a change in direction. “Modernisation” was still promoted as the overall direction and poverty was described as a symptom of the incomplete modernization process rather than as a result of the majority of the rural population being unable to take advantage of the opportunities for modernization on offer. The ideas presented for repairing the safety net emphasised reintroduction of subsidised input provision and especially the need for crop insurance and related measures to encourage farmers to take greater production risks, thereby reaping greater benefits and contributing to modern, export led growth.

MAGFOR’s dismissal of the potential of “archaic” methods used by farmers to reduce risk was in sharp contrast to the ideas that were being put forth by civil society. Both the government and civil society were now in favour of programmes to promote tree planting and perennial crops, but there were significant differences in the details. Civil society saw these approaches as a way to make traditional diversified farming systems more sustainable and thereby stabilise peasant farming. They had their own vision of ‘modernization’. MAGFOR, by contrast, saw these methods as a step in replacing traditional approaches with greater commercial specialisation. It was acknowledged (although not stressed) that this would involve a major shift of rural livelihoods away from own-account farming. The assumption was that those leaving farming would obtain income from wage labour in increasing agro-industrial development, but this ‘hypothesis’ about the benefits of modernization lacked empirical follow-up.

Civil society organisations in Nicaragua and internationally explicitly associate poverty with the impact of disasters and urge the use of agroecological approaches to reduce risk (see e.g., Baumeister, 2004). Given the level of polemics which emerged from civil society organisations about the need for a shift to agroecological methods after Mitch, it is surprising how seldom this observation was carried through and identified as a major priority, either for action or longitudinal empirical reflection. Even the most enthusiastic supporters of these methods acknowledge that their diffusion has been very poor and that evidence of the benefits of agroecological approaches in preventing erosion after Mitch had little impact on government policies (Holt-Giménez, 2002). Mitch was preceded and followed by a number of small projects promoting these measures, but their impact on either poverty or the environment has been limited. Our research has found significant adoption of new methods (though perhaps not the full ‘package’ promoted by NGOs) among coffee producers in Dipilto, but the very high and continuous level of aid inputs there makes generalisations about their role in ‘sustainable development’ inappropriate.

3.2 The emerging food security agenda

A 2005 review of food security and governance consists of a catalogue of the failures to implement elements such as those put forth in the Stockholm Declaration and the continued acute need for a ‘transformation’, but most revealing, no mention is actually made of the Stockholm Declaration (Sahley, *et al.*, 2005). This suggests that the ideas that were put forth in the Stockholm Declaration have since become part of the discourse on food security, but also that little has actually been achieved. The reasons for this have much to do with the political developments in the post-post-Mitch era. The Bolaños regime

(2001-2006) was a favourite of the international community but lacked a domestic power-base, which made it extremely weak in moving ahead with reforms to address vulnerability (Sahley, *et al.*, 2005). Under the Sandinistas, MAGFOR has placed food security at the centre of their priorities. Some NGOs (e.g., World Vision) are in the process of mainstreaming attention to food security in all programmes. The current food security agenda tends toward supply-led or even humanitarian approaches. Lack of food is recognised as the bottom line with regard to both vulnerability in the face of different natural hazards and also to chronic poverty and destitution. Beyond the act of providing the means for food production, there is little explicit analysis of how these programmes will solve the underlying problems. Some of those interviewed note that capacity to assess and understand the complex nature of vulnerability to food insecurity is weak, and this is a reason that these programmes are not anchored in explicit analyses of the causes of food insecurity.

Most agricultural programmes provide inputs that are only distributed (and indeed useful) to those with land. Insufficient data is available to assess the impact of these programmes, but general observations raise concern with regard to excluding the poor, especially those living in houses constructed after Mitch who generally have very little land. Furthermore, many interviewees in the municipalities and in Managua have expressed concern that the livestock (especially pigs) that are being distributed are effectively competing for the same foodstuffs needed for human nutrition and are therefore likely to be sold or eaten by the poorer households. Some NGOs have provided similar forms of support in the past and have learnt lessons from these. One NGO interviewee cited the following lessons regarding livestock distribution. She stated that programmes should:

- assess the capacity of poor households to feed and care for the livestock provided;
- beware of quantitative targets, as these act as a disincentive to targeting these programmes appropriately;
- concentrate efforts on fewer households since highly dispersed investments will have little sustainable impact; and
- assess the very different needs of different households in order to understand where such programmes are most relevant.

3.3 Transformations of the poverty profile

Some macro-level observers conclude that Hurricane Mitch did not have significant impact on the overall poverty profile in Nicaragua (e.g., Danish development assistance to Nicaragua, 2002). For the affected population, livelihood opportunities were temporarily lost, such as wage employment in horticultural production and food production on sloping lands that were degraded by the hurricane. Other opportunities (albeit temporary) arose through investments in construction, re-building of infrastructure for commercial agriculture and a range of food-for-work schemes (CCER, 2000).

Despite the aim of achieving 'transformation' through the recovery effort, there is no evidence that the underlying structures of poverty have been 'transformed' over the past decade by the recovery investments alone. Some things have been transformed. A shift to higher value products has had significant impact. Food security has become a national concern. But this process has been driven by overall market trends, post-Mitch natural events, climate change fears and changing political regimes. The nature of poverty today is not the same as poverty was ten years ago, but there is no data to suggest either placing blame or giving credit for most of these changes to the planners of recovery programmes. It should be noted that surprisingly few analyses of post-Mitch investments even ask whether these efforts have contributed to a 'transformation'.

Some observers have noted that there was interplay between Mitch and the processes surrounding the poverty reduction strategy in raising attention to poverty at the end of the 1990s. The complexity of vulnerability revealed by Mitch suggested a more integrated approach to rural development (Cornally, *et al.*, 2004) This was reinforced as many of the poverty-related institutions that formed during this period were in part initiated as a response to the need for greater coordination and policy coherence in dealing with the post-Mitch recovery operations (Cornally, *et al.*, 2004). It is therefore somewhat of a paradox that this connection did not result in a sustained inclusion of concerns about transient poverty in Nicaraguan poverty policies.

Much of the international NGO polemics directly after Mitch placed the blame for the disaster on commercial agriculture, i.e., coffee in Nicaragua and bananas in Honduras (Russell, 1999). A few years later the same organisations had realised that due to lack of alternative livelihood opportunities these

crops were perhaps at least part of the solution (Gresser & Tickell, 2002). In the first five years after Mitch the coffee crisis was the main impediment to overall recovery (UNDP, 2003; IICA, 2004; Jano & Balsevich, 2004). In Nicaragua poverty increased during 1999-2001 in coffee-growing areas due to the drop in prices, while it decreased on the Pacific Coast due to Mitch aid (Vos & Cabezas, 2006). Though not designed to address the coffee crisis, the post-Mitch recovery operations did have some impact on resilience to this 'silent emergency' and the conjuncture of Mitch recovery operations with the need to increase returns on coffee production was one reason that many recovery investments have promoted a shift to specialty coffee.

There were a number of projects after Mitch to rehabilitate commercial farming. These programmes focused on removal of sand and stones that were deposited on horticultural production areas along river beds, recapitalisation of coffee production, replacement of fencing and irrigation equipment and credit. The most successful of these were demand driven and based on the chosen strategies of producers. The Mitch response also coincided with some of the first experiments with what has come to be known as 'cash-based responses' in provision of cash on the assumption that these grants would be used to purchase the agricultural inputs desired by farmers themselves (Heigh, 1999).

3.4 Vulnerability and social protection

Interviews have confirmed that risk reduction efforts have remained primarily oriented toward analysing hazards, and to some extent risk exposure, but that vulnerability analysis is very limited. It is here that the links between these efforts and poverty alleviation have failed to materialise. Without an understanding of the multitude of structural and local factors that create vulnerability, there is no conceptual basis for justifying an explicit poverty focus when addressing disaster impacts and risks. Interviewees expressed frustration that there are no acceptable methods available that can distil the multitude of factors that generate vulnerability in a form that is useable by actors tasked with risk management. Poverty alleviation and risk reduction were perceived as being linked in the early post-Mitch response, but have returned to their institutional silos today.

Perhaps the most glaring example of how lack of vulnerability analysis has led to a failure to address high levels of risk is how rural poverty alleviation efforts have targeted those with sufficient land to effectively utilise the resources provided. There is a form of triage that has left out the landless or has been based on implicit (but untested) assumptions that the poorest will benefit from labour opportunities on larger farms. Vulnerability analysis could clarify which households can indeed benefit from labour opportunities and seasonal aspects of their vulnerability, perhaps thereby revealing important gaps. But such analyses have not been conducted.

The sustainability of recovery efforts can be assessed in terms of how perceptions of the rights of the population to be protected from suffering caused by disasters and chronic poverty have changed over the years. A major thrust of Nicaragua's poverty reduction strategy has been to create a more "coherent safety net" to replace the temporary and ad hoc measures that have been employed in the past (Bradshaw & Quiróz Viquez, 2008). Continued chronic food insecurity and malnutrition in a country with seemingly relatively abundant land and natural resources suggests that something is wrong in terms of governance (Sahley, *et al.*, 2005). If a 'transformation' of the lives of the chronically poor has not happened, this should at least be partially attributed to a failure of the state to ensure that these resources are used for the benefit of the population. Though rarely mentioned in the development and recovery discourse of the late 1990s, today it is widely assumed that 'good governance' in dealing with both chronic and transient poverty is manifested in the quality of social protection institutions (Barrientos & Hulme, 2008). It is therefore important to analyse if and how social protection has figured in the post-Mitch agenda.

Although Mitch largely predated recent calls for better linking social protection and disaster response mechanisms, there were some positive examples of adapting these existing structures to early recovery. Honduras and Nicaragua have been cited as examples of very successful temporary conversion of pre-existing social funds to recovery programming (World Bank, 2003). Mitch delayed the planned decentralisation of social funds in Nicaragua because priority was given to utilising existing mechanisms as a vehicle for recovery programming (Dijkstra, 2004). These examples show that in terms of flexibility in initial response, a useful and pragmatic link between disaster response and more permanent structures was found.

This did not and does not indicate the existence of a broader commitment to using social protection systems in disaster response. Social protection programmes in Latin America are generally not seen to

be a tool for dealing with disasters. For example, only 2.2% of Mexico's (considerable) social protection budget goes to those affected by disasters (World Bank, 2003). Little attention was given to linking social protection to disaster recovery in Latin America by the World Bank, with no mention of Mitch in analysis of emerging social protection needs due to coffee crisis (World Bank, 2003).

The positive examples of social protection programming being adapted to Mitch refer to social funds for public works. There is no indication that social transfer programming, in the limited extent to which it exists in Nicaragua, has been seen as a useful link with disaster response. An evaluation of the Nicaraguan Social Protection Network (*Red de Protección Social*, RPS) concluded that the benefits of the programme were very positive, but the role of shocks in creating a need for these services and the ability of the service to respond to shocks were given scant attention (Maluccio, *et al.*, 2005). This is despite the fact that the period under study was 1998-2001 and some of the sites studied were heavily affected by Mitch. The report acknowledges that "The premise of CCTs [conditional cash-transfer programmes] is that families remain in poverty from one generation to the next because poor parents cannot invest adequately in their children" (Maluccio, *et al.*, 2005:3). This quote, without reference to shocks, exemplifies how social protection in Nicaragua is almost entirely seen as a way of dealing with chronic rather than transient poverty and risk.

Despite highly positive assessments of the RPS, political support for the programme was considered to be "lukewarm" while it was operating (Davis, 2003), and it was discontinued when donor funds were exhausted due to lack of Nicaraguan ownership of what was perceived as a donor initiative (Moore, 2008). Even when it existed it was far smaller than the World Food Programme's (WFP) various forms of support to 'vulnerable groups'. WFP made a point of avoiding duplication with RPS in programming (though both were operational in some municipalities, such as Terrabona) but there were no attempts made to coordinate in the perspective of constituting a broader national system for social protection or a 'coherent safety net'.

Perhaps the reason for this failure to link social protection to responding to shocks may be that food aid from WFP and other sources has long been the *de facto* response mechanism for shocks, and that alternatives have therefore not been explored. During the period 2002-2006, WFP alone planned to provide 9% of the population with food aid (Baumeister, 2004), a magnitude that dwarfs social protection programming. It is therefore natural that those responsible for limited resources for dealing with chronic poverty would not expend those resources on activities that are much better resourced, the conceptual 'coherence' of the ultimate safety net system notwithstanding.

4. Rebuilding the Social Fabric

4.1 The social fabric: Impacts and recovery

Especially in recent years, both aid agencies and their critics tend to describe 'communities' as having a 'social fabric' that needs to recuperate as part of the overall recovery process. This is particularly true in those disasters where large numbers of people are displaced, resettled or require new housing in less risk-prone locations. Since the most important forms of social protection are said to be based on local structures, the process of rebuilding the social fabric of communities is therefore essential for resilience.

Whereas these claims are certainly undisputable, there is reason to question implicit assumptions about the nature of the social fabric in segmented, hierarchical and inequitable societies. The pre-disaster social fabric is often portrayed in a romanticised narrative, as consisting of harmonious and egalitarian socio-political structures with high levels of 'social capital'. These narratives must be critically assessed if realistic and relevant recovery objectives are to be found. In Nicaragua (and indeed in many countries) much of the social fabric that holds communities together, and the informal social protection systems upon which people depend, are far from egalitarian. When confronted by a disaster or great stress the first recourse is family. If additional assistance is needed, disaster-affected people are likely to rely on patrons, especially political, church and other village leaders. Where there are strong relations with aid agencies, as were established after Mitch, these leaders seek to preserve and enhance their roles in the community by tapping aid flows. Findings from the three municipalities analysed in this research indicate that recovery aid has helped in the re-establishment and reinforcement of this clientelistic social fabric.

This is not to say that social capital is a myth. Compared to elsewhere in Central America, Nicaragua has a high density of community groups (WFP, 2002). Local groups and producer cooperatives do indeed

provide a structure for managing risk. The important issue is to understand inclusion/exclusion and the costs for disaster affected people in drawing on these structures. It is also important to understand the dynamics by which recovery from a major disaster such as Mitch influences these social relations.

4.2 Conflict

Given that the areas affected by Hurricane Mitch were partially contiguous with the areas most affected by the conflict ten years earlier, there was awareness that the rapid injection of large levels of aid could rekindle conflict-related tensions. The disaster coincided with an international debate within the humanitarian sector on the “do no harm” approach (Anderson 1999). The Swedish International Development Cooperation Agency (Sida), for example, included the need to avoid contributing to conflict in its “guiding principles” for the Mitch response. It is therefore of notable interest that the post-Mitch reports and studies reviewed here make little mention of whether or not programming ultimately ‘did any harm’ (or any good) in terms of aggravating or mitigating conflicts. An exception is social audit data in 2001 which revealed a mixed picture of perceptions of whether conflict and tensions had increased or decreased in the areas affected by Mitch (CIET International, 2006). Conflicts that have appeared are related to labour markets, e.g., food aid and food for work discouraging people to work in agricultural enterprises, or competition among poor households for a limited number of support packages. The latter has primarily been reported with regard to more recent agriculture and food security programmes that provide vouchers for agricultural investments (*bonos productivos* and *hambre cero*) rather than recovery programming per se. It is not possible to verify the extent to which these conflicts were actually caused by aid or whether these were pre-existing tensions that manifested themselves in dealing with introduction of outside support.

Housing is undoubtedly the main arena of micropolitical tensions in recovery from any major disaster (and indeed many conflicts as well). In locations as disparate as Sri Lanka and Bosnia Herzegovina, access to land and housing is the arena wherein the political struggles for control of the recovery process are most aggressively played out. Control over land and housing is a path to either coercive power or political legitimacy. Very large levels of funding were rapidly committed to shelter after Hurricane Mitch. This stimulated a wave of land speculation that made it extremely difficult for aid agencies to locate and purchase alternative and safer sites for rebuilding the homes lost to landslides and floods. Due to these concerns, much attention has been paid to difficulties in initiating and carrying out resettlement programmes due to land, cadastre, matching services to housing (e.g., Frühling, 2002), but very little analysis has been made of the ultimate impact of these programmes in terms of functional communities.

4.3 Labeling of ‘vulnerable groups’ hides complexity

Targeting is important in response to any disaster. It is not necessarily self-evident what the basis should be for such targeting. Gender factors influence impacts and resilience mechanisms. Culture and religion also affect how hazards are perceived and how people act to manage risk, before and after a major disaster. Social, political and gender factors may enable or limit access to resources (especially land and financial capital) that are essential for recovery. It is dangerous, however, to take such information and build simple and casually generalised taxonomies for distribution of aid to ‘vulnerable groups’. Gender and power in social relations create particularly complex outcomes. The three municipalities studied showed significant differences due to the interactions between gender factors and local socio-economic dynamics. There is considerable evidence that mere labelling of vulnerable groups may hide very important local dynamics that determine the construction of vulnerability. Bradshaw’s research noted the following variations in gendered impacts and responses to Mitch:

- Physical impact of Mitch did not vary significantly according to gender, but psychosocial factors had greater impact on women (Bradshaw, 2001);
- These trends were reinforced afterwards with migration that was primarily male in Honduras but relatively equal in Nicaragua (Bradshaw, 2004);
- Contrary to conventional assumptions, women’s involvement in ‘productive’ (livelihood) activities declined after Mitch (Bradshaw, 2001). They did not move into male roles; and
- Findings indicate diverging tendencies between younger and older women, suggesting the need to disaggregate for age as well as gender to find significant factors (Bradshaw, 2004).

Migration and urbanisation are important factors impacting on gender roles since Mitch, but these have rarely been empirically analysed. The prevailing assumptions at the time have gone unquestioned in the longer-term recovery process (Martine & Guzman, 2002). Some attention was paid to gender related impacts on demographic changes (Martine & Guzman, 2002) but the topic has been generally ignored in the large majority of literature reviewed. Little gender-disaggregated data was collected and many indicators used in data collection would not reveal clear findings due to the complexities of teasing out the nature of gender roles in the household and in agricultural production (Bradshaw, 2004). Some agency staff acknowledge their near complete failure to have impact on gender relations in the disaster risk reduction projects that have come after Mitch (Lavell, *et al.*, 2008).

5. Reduction of Risk

5.1 A window of opportunity to mainstream disaster risk reduction?

In the wake of disasters there is generally assumed to be a 'window of opportunity' to address disaster risk. These assumptions should not be taken for granted (Christoplos, 2006). The early conceptualisation of the Mitch 'window' for using a disaster event to reduce risk fell into three categories. One focus has primarily stressed the need/potential to promote preparedness for disaster response (Durán Vargas, 1999; INCAE & HIID, 1998). Others emphasise how socio-environmental aspects of recovery may reduce risk (Bradshaw, *et al.*, 2000; Barahona & Doryan, 1999). There have also been those who suggest that economic recovery should be designed to carry with it risk reduction (INCAE & HIID, 1998).

The Stockholm Declaration included an assumption that the hurricane would provide an opportunity to initiate a more effective mainstreaming of disaster risk reduction in the overall development process. Recovery efforts were seen to be a means to achieve this wider objective. Evidence from the municipalities studied and from agency interviews in Managua shows that some advances in mainstreaming have been achieved, but that this process has not been linear, and the most important steps have had little explicit links to recovery programming. Indeed, interviews suggest that the 'bad conscience' about failures to act on the mainstreaming agenda during earlier post-Mitch recovery was a significant driving force in later years, when disaster risk reduction programming expanded.

During the first five years after Mitch there were some clear statements of commitment to risk reduction, such as the *Strategic Framework for Vulnerability and Disasters Reduction in Central America*. There were also glaring omissions of significant mention of disaster risk in many important reports, especially those addressing poverty. Most major donors made scant allocations to disaster risk reduction in the early years after Mitch (Danish development assistance to Nicaragua, 2002). Sweden made explicit commitments to risk reduction and included assessment of overall impact on risk reduction in evaluation of its activities but "in spite of this, however, activities within these areas have not been a major priority for Swedish development cooperation in Central America – neither before nor after Mitch" (Frühling, 2002:6). This evaluation goes on to state:

When undertaking the Mid-Term Review concerning the Swedish post-Mitch support, it therefore came as a surprise that this kind of preventive measures at that point in time (towards the end of year 2000) had still been almost forgotten or given low priority only – within the portfolios of almost all major development agencies. Since then, more interest has been shown in disaster prevention and mitigation and several efforts of certain magnitude are now being developed in Central America. (Frühling, 2002:9-10).

Mitch may have created new openings for civil society to engage in and drive risk reduction, but there was a significant delay before this occurred. In the years immediately after Mitch there was little evidence that this impacted on inclusion of disaster risk reduction into NGO programming (Rocha & Christoplos, 2001). Since then coordination of NGO risk reduction efforts has proven difficult. The *Mesa Nacional para la Gestión de Riesgo* (national roundtable on risk management) within the CCER was active in the early Mitch reconstruction period but has since become fairly passive and has not been able to bring together a common agenda (Alcarraz & Gómez Susaeta, 2007). Despite declarations of the need to reduce risk through agro-ecological methods, participatory action research, advocacy and coordination, the NGOs and their networks accomplished little in any of these tasks in the early post-Mitch years (Holt-Giménez, 2002).

Mitch did, however, send a message that things needed to change. Ten months after the hurricane Law 337 on disaster management was adopted and for the first time responsibility for disasters was moved beyond being just a matter for civil defence, resulting in a real demilitarisation of response, new space for NGOs to engage in disaster risk reduction (Rocha, 2007) and a wider approach to disaster management.

LAW 337: A LANDMARK IN DISASTER LEGISLATION IN NICARAGUA

On 8 March 2000, the National Assembly of Nicaragua passed Law 337, which created the National Disaster Prevention, Mitigation and Response System—a true landmark in emergency reduction and response for the Central American country. The law set out the principles, standards, and instruments that would guide the establishment of a nation-wide system aimed at preventing, mitigating, and responding to natural and man-made disasters from a comprehensive and up-to-date perspective.

Among the principles enshrined in Law 337 are the following:

- *The need to handle disasters in an integral fashion, taking into account all environmental, social and economic aspects.*
- *The need for interinstitutional, multisectoral and interdisciplinary coordination.*
- *The preservation of civil rights in emergency situations.*
- *Administrative decentralisation.*
- *Citizen participation.*
- *The need to ensure appropriate funding for these activities.*
- *The integration of risk reduction into all development plans and investments, whether in the public or private sector.*
- *The declaration of all these activities being in the public interest.*
- *In addition, the new National System does not involve the creation of new bureaucratic structures. Instead, it establishes coordinating bodies for all those government agencies already active in the disaster reduction field.*

The system is made up of:

- *A National Committee, which steers and supervises the entire process.*
- *A total of nine Sectoral Working Committees.*
- *Municipal, departmental (provincial) and, in the case of the Atlantic coast, regional committees.*

In addition, a Disaster Operations Center (CODE) has been established, as well as a national Disaster Fund to provide prompt funding for current or imminent disaster situations.

An Executive Secretariat coordinates the various Committees and serves as the technical body in charge of managing the Fund. It is also the entity that carries out the mandates of the National Committee.

All national government institutions, decentralised state organisations, municipal governments and other members of the National System are called upon by law to set up Technical Liaison Units that can serve as focal points for disaster reduction, and coordinate efforts with their counterparts in all other relevant institutions.

The law incorporates a strong component of citizen participation, in order to ensure that timely cooperation takes place between the private and public sectors and civil society.

Source: http://www.eird.org/eng/revista/No5_2002/pagina32.htm

Law 337 was the culmination of a “paper hurricane” of laws, policies and plans after Mitch (Rocha, 2007). The challenge since the introduction of the law has been to apply these new norms in a concerted manner. A report five years after Mitch cited improvement in plans and policies, but limited implementation and integration (UNDP, 2003). A more recent evaluation of DIPECHO’s Action Plans in Central America draws attention to many successful individual initiatives, but also a lack of strategic orientation and dangers of projectisation despite mainstreaming efforts (Lavell, *et al.*, 2008).

Interviews in Managua and in municipalities show a strong awareness of the importance of reducing risk combined with a frustration over the lack of progress and erratic nature of addressing these issues due to

project orientation and limited investment of municipal and state resources. There is a gap between the consensus on new norms and significant implementation.

Parts of a risk reduction agenda have become integrated into the activities of government and civil society. This agenda is, however, widely acknowledged as being skewed toward disaster preparedness and response, rather than prevention and vulnerability reduction. This is partly related to reliance on donor funding, wherein small 'windows of opportunity' to access budgetary resources are perceived (rightly or wrongly) as being easier to access in association with a disaster, rather than as part of commitments to long-term vulnerability reduction. Particularly at municipal level, actors are acutely aware of the cycles of outside aid and how they are more associated with response to recurrent droughts and floods than with the need for preventive measures.

5.2 Risk mapping, decentralisation and sustainability

Decentralisation has been the most important theme in recommendations for risk reduction after Mitch (see e.g., Valdés, *et al.*, 2000). The search for sustainability in risk reduction efforts has focused on provision of tools and skills for municipal planning, on the assumption that these investments will lead to local ownership and engagement in risk reduction efforts, and ultimately the integration of risk reduction into municipal planning efforts.

The major area of practical focus regarding decentralised and participatory disaster risk reduction during the past five years has been on municipal risk mapping. A large number of maps have been prepared (up to 80, though reports differ regarding the total). These maps primarily focus on hazards and are oriented toward land use planning and relief response. The success or failure in creating local ownership and sustainability in disaster risk reduction is reliant on municipal government deciding that disaster risk reduction involves more than producing "pretty maps" (Rocha, 2007), and also in acting on the information collected in those maps.

It is also important that those maps accurately reflect the landscape of risk facing the municipalities. There have been fears that pre-existing concepts of 'disaster' may skew priorities. DIPECHO programming has been criticised as unduly focused on floods and landslides and response to sudden onset disasters (Lavell, *et al.*, 2008), a finding mirrored in the municipalities reviewed in this research. Slow onset hazards, such as drought, are less likely to be labelled as 'disasters' and economic vulnerabilities (such as the coffee crisis) are also ignored. Interviewees state that the hazards focus of these mapping efforts is detached from the factors of vulnerability that turn these hazards into risk.

In many development plans risk reduction is equated with integrated watershed management, often with the 'risk reduction component' involving physical erosion control and related measures. This reflects genuine concerns with the impacts of land degradation. In much post-Mitch programming assumptions that improved watershed management equals risk reduction limits empirical attention to actual risk. For example, an evaluation of PROCASITAS (*Proyecto de rehabilitación social y ambiental con enfoque de cuencas* – River basin social and environmental rehabilitation project) makes no mention of whether risks have been reduced even though this was the aim of the project. Assessment is instead made of outputs with regard to improved watershed management with the implicit assumption that these outputs will result in reduced risk (MAGFOR-PROFOR, 2005).

Perhaps the ultimate indicator of sustainable commitment and ownership of disaster risk reduction objectives is readiness to cover costs from state resources. The modalities of the Paris Declaration on Aid Effectiveness imply a reliance on allocations from the treasury rather than donor-financed projects. Disaster risk reduction will only remain a priority if aid is matched by local and national government resources. The prospects for this are not good in Nicaragua.

In discussing the sustainability of municipal-level interventions, interviewees relate a range of work to identify environmental problems and disaster risks, to prioritise these according to need and urgency and development of plans for microprojects and other activities. But virtually all of those interviewed report that very little is being implemented. The few activities that have been implemented are directly funded from outside sources and are recognised as being unsustainable unless local resources are allocated for follow-up, recurrent costs and to move beyond pilots. At national level the situation is not better. Ninety percent of funding for SINAPRED comes from donors (Linneker & Rodríguez, 2007).

5.3 Climate change and risk reduction

Over the last few years, the disaster risk reduction community of practitioners, researchers and policymakers has acknowledged that climate change must also be addressed as a major factor causing vulnerability to hazards, as well as changing the frequency, magnitude, dimensions and location of hazards. This may open a new window of opportunity to think about disaster risk reduction in a more holistic and long-term manner. Addressing climate change requires a rethinking of many aspects of prevailing development paradigms. This means considering both the reduction of greenhouse gas emissions, as well as the process of adapting to climate changes.

One component of adaptation to climate change is sound disaster risk reduction. It has been a struggle by many agencies, individuals and governments to reach the current point of global acknowledgement that disaster risk reduction and adaptation to climate change are closely related (Schipper, 2009), but in many respects this conceptual hurdle has now been overcome. Even the UN Framework Convention on Climate Change's Bali Action Plan to determine the rules and modalities of climate change policy after 2012 recognises that disaster risk reduction must be a feature. But there are some fundamental practical differences, which are particularly pertinent when (and if) 'climate change' takes over from or complements 'disaster risk' in the risk discourse.

Fieldwork in El Salvador in 2002 indicated that 'climate change' had little meaning and that 'risk management' was more commonly understood among the communities interviewed (Schipper, 2006). It is likely that a similar pattern was evident in other Central American countries. However, since 2002, the international development community has begun to embrace climate change as a fundamental concept to be considered in development planning. Substantial sums are now channelled to climate change activities, both greenhouse gas reduction and adaptation. Consequently, many agencies are seeking to access climate change funding, by making some linkage to this new discourse.

The research in Nicaragua sought to understand to what extent the climate change discourse had influenced the discussion on disaster risk reduction, and understand how it had affected the recovery process during the ten-year period since Mitch. It was hypothesised that 'risk management' would now be at least partially replaced by 'adaptation to climate change', mostly in response to the changed donor language. The findings indicated that although climate change was mentioned consistently, it was primarily in the context of reducing greenhouse gas emissions, rather than adapting to the impacts of climate change. Thus, if climate change has replaced disaster risk reduction in the risk discourse, it has done so only to move away from the concept of reducing risk and vulnerability, and focuses on the role of activities to reduce greenhouse gas emissions in protecting people from floods and droughts.

The confusion surrounding the purpose and use of risk/hazard maps described above is in some ways symbolic of the confusion around the level on which the action needs to take place to reduce vulnerability to hazards, including those additional threats posed by climate change. This illustrates how the disaster management discourse in Nicaragua has yet to acknowledge that many development processes themselves have increased vulnerability to hazards. This also suggests that there are great challenges in ensuring that underlying vulnerability to climate change features more prominently in future thinking about disaster risk. Interviews in Managua and discussions in the municipalities indicate that the scope of climate change may not be fully understood. The roles and responsibilities for government and other organisations in terms of shaping policy to respond to climate change are also unclear. Most likely, the same factors constraining disaster risk reduction will influence the implementation of adaptation to climate change.

It is clear that the threat of climate change is related to institutional weaknesses and inappropriate developmental trajectories and priorities. These differ around the world, but already experienced and expected adverse effects are most severe where governance is poor, environmental degradation high, and poverty severe. The existing pattern of extreme climate events and the impacts of these on human well-being give some indication of the likely consequences of climate change, but there are potential hidden sensitivities that might emerge as the fabric of society and environment decay over time. The interplay between weak institutions multiplying the effects of climate change and climate change having a detrimental impact on institutions is complex, dynamic and unpredictable. O'Brien, *et al.* (2008) note that with the changes in climate expected, existing patterns of variability cannot reliably be used to guide a future that is becoming more uncertain. What is certain, however, is that there are links between preventing, preparing for and responding to disaster risk and climate change.

The difference between actions to reduce disaster risk and adaptation to climate change often has to do with the time-frame in mind. Climate change actions usually consider three types of changes: changes

that will happen gradually over a long period, such as 50-100 years; changes of patterns to extreme hazard events in the future (including the introduction of new hazards); and changes that are already being experienced. Individual 'events' might in reality incorporate all three of these, by manifesting themselves already now while also leading to gradual changes that result in extreme and rapid-onset events in the future. In other words, these phenomena do not necessarily have to be discrete. It is useful, however, to consider them as separate processes for the purpose of considering how to reduce the risks that they pose.

Rapid-onset hazards such as hurricanes are easily recognised as disasters, but as noted above, slow-onset hazards are not as easily defined. In the communities studied, drought was one of the major concerns. Community members noted its recurrence over the years since Mitch took place while also stressing that it was not part of risk management frameworks. This is so because their impact tends to be incremental; the longer a dry spell lasts, the more intense the physical impact is, until it is finally declared a 'drought'. On the other hand, the impact can be social and economic, rather than physical, and therefore monitoring and measuring are difficult (Smakhtin and Schipper, 2008). What is experienced only as a dry spell to some will to others have severe adverse social and economic consequences as a 'drought' depending on their level of vulnerability.

The role of recurrent hazards, such as drought, can illustrate what the 'adaptation deficit' with regards to climate change might be – i.e., the difference between the effects of current droughts and what would be necessary to avoid adverse impacts of drought in the future. In this regard, it is also necessary to think about how the cumulative effects of hazards are being taken into account in planning for reducing disaster risk and implementing adaptation to climate change. The cumulative effect of hazards has impacts for the recovery of natural resources and livelihoods, but also means those affected start off at a position of lower capacity and resilience each time (O'Brien, *et al.*, 2008).

Recurrent hazards can sensitise society to the risks posed by the combination of natural hazards and their own livelihoods. Although it may not be clear to them why, people will notice that some are less affected than others by hazards. The differential nature of vulnerability (sensitivity, exposure and resilience) will therefore become apparent. How this translates into taking action to reduce risk is less clear. In Nicaragua, the field research showed how those affected by Mitch moved back to their original property because they decided that the loss of quality of life and (above all) access to livelihood opportunities in the new settlements were more detrimental than the one-off risk represented by Mitch. However, with climate change, hazards such as Mitch might become more frequent, intense and widespread – which may gradually influence their judgements with regard to the 'lesser evil' of increased disaster risks. This may represent a tipping point – after which adaptation through relocation within a given municipality is no longer viable since safety and access to livelihoods cannot be combined. During the 1990s the neo-liberal regimes of Latin America withdrew services to isolated rural areas that were then considered 'non-viable' (this classification was viewed as flawed due to the failure of this technocratic perspective to encompass the variety of livelihoods and creativity of rural people, see Bebbington, 1999). Climate change may raise new questions and challenges related to the viability of 'climate proof' livelihoods in many areas.

6. Lessons from Hurricane Mitch in Dipilto, Terrabona and San Francisco Libre

6.1 Dipilto

Dipilto is the smallest municipality in Nueva Segovia with a surface area of 108 km². It is located in northern Nicaragua and borders to the north with Honduras, to the south with the municipality of Ocotal, to the east with the municipality of Mozonte and to the west with the municipality of Macuelizo. The urban centre is located at 880 metres above sea level and is 239 kilometres from Managua. In 2008 it had a population of 5,666 inhabitants. It is a predominantly rural municipality. Of the total population, 97% lives in the countryside, occupying 1,477 homes. Few people live in the only urban centre, Dipilto Nuevo, where there are only 54 homes (INIDE 2007).

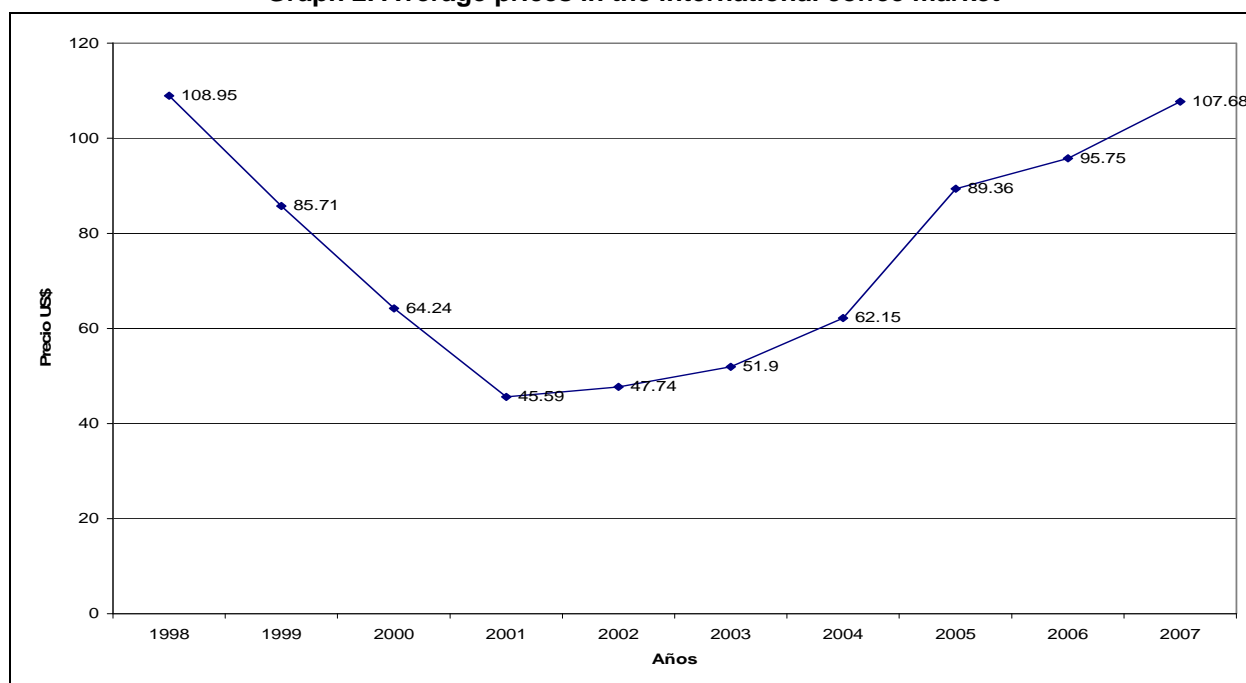
When discussing potential risks with the population, it became evident that a number of threats and risk factors have been left unattended which may have a strong impact on their lives, beyond disaster events

caused by strong rainfall such as Hurricane Mitch. The informants noted the following risk factors faced during the past decade:

- First, all issues related to sustenance and family livelihood, especially the negative impacts of unemployment, the drop in coffee prices, and low crop yields.
- Second, the social aspects related to the family, i.e. citizen insecurity, crime, problems with drugs and alcohol; as well as disputes over land.
- Third, as regards the environment, landslides causing losses in productive areas, which turn into stony unproductive soils; deforestation; slash-and-burn practices; pollution of water sources with runoff from coffee processing plants, latrines and agrochemicals; droughts and floods were also noted.

After Mitch the next great shock was the drop in coffee prices. International coffee prices crashed between the years 2000 and 2004. The drop in the international price of coffee from US\$108 dollars to US\$ 45 per 100-pound bag can be seen in graph 2, below. This led to a crisis in the territory. Coffee farmers had to lay off their hired help. Coffee farms are the main source of work for landless families in the area and unemployment led to severe concerns for basic food security.

Graph 2. Average prices in the international coffee market



Source: Drawn up based on data from the International Coffee Organisation

In 2003, 2004 and 2005 forest fires broke out in the municipality, affecting mainly the coniferous forests. Fires have become more frequent due to an infestation of pine bark beetle (*dentroctonus frontalis*) in the 1990s, which decimated 2,004 hectares and 502,560 trees (INAFOR, 2002). As a result of the infestation, the municipality is now vulnerable to forest fires. In order to secure natural regeneration of the forest, restrictions on logging were decreed and are still in force. Tree density per hectare was estimated at 1,291 in 2005 (INAFOR, 2005:5).

During the emergency phase and reconstruction period after Hurricane Mitch, all communities saw examples of solidarity with those most affected. In some cases, new settlements were established as people were transferred from at-risk areas to new settlements (Barrio Solidaridad, Barrio Santa Rita). However, homes were later abandoned in many of these new settlements. In others, social cohesion is not high due to temporary migration in search of livelihood opportunities. In other communities, home improvements were made on the same plots where families lived before the hurricane, or to plots they moved to within the same community (El Volcán and La Laguna 2).

There is a certain degree of social fragmentation in the communities in Dipilto due to differences in the standard of living, a reflection of levels of land ownership and the availability of employment on the coffee plantations. In these communities, those with higher economic power relate more to external actors and

receive most of the benefits from projects, as is the case of El Volcán. Another factor in fragmentation is social disintegration and with it, crime and drug consumption problems among youth, as is happening in Barrio Solidaridad. In contrast with La Laguna, which was considered to be an integrated community where the existence of a producers' cooperative has prevented conflicts and problems from arising, there have been conflicts in other communities due to the distribution of project benefits among only a few families.

As concerns leadership, it was generally assessed as very active and legitimate. The communities are organised to undertake negotiations with external actors. Among these El Volcán and La Laguna 2 stand out, as their leaders have established a positive dynamic in the community and through negotiating efforts they have attracted support from several organisations, thus receiving training on soil conservation and coffee production. In contrast, the Barrio Solidaridad has passive leadership, the district committee lacks coordination with the Municipal Development Committees (CDMs), there is apathy on the part of external actors towards the Barrio due to the presence of youth groups engaged in theft and the consumption of alcohol and drugs, leading to citizen insecurity.

The municipality's organisational level is good, especially as regards the communities of El Volcán and La Laguna 2. Both these communities coordinate closely with formal organisations, among which the coffee producers' cooperatives are the most stable and successful in negotiating productive projects. In addition, the community committees, water committees, rescue and fire brigades also participate actively in meetings or negotiations with the CDMs. In this respect, the Barrio Solidaridad can be described as a non-organised community, with only a passive community committee not considered representative by the other members of the community.

The role of external actors comes to the fore in the way communities operate. Dipilto has enjoyed a continuous flow of aid from donor agencies. These have supported local organisations by means of programmes and projects, focusing on integration into agro-export markets, basically coffee (consistent with national development plans aimed at economic growth), and food security (food-for-work and kitchen gardens).

In some cases impacts are positive and in others they are not. The most notable organisations are those focused on improving coffee production by facilitating technical assistance and the betterment of coffee plantations and infrastructure. Thus, these organisations help strengthen internal ties and underpin the economic level of the participating families.

Organisation also generates social fragmentation. Capacity to organise (or lack of such capacity) is a factor in differences within the social networks of the communities in Dipilto. In the communities of La Laguna 2 and El Volcán differences exist between those who belong to cooperatives and those who do not. Organised groups receive credit, technical assistance and training, but in order to organise, there are requirements that need to be fulfilled, such as having a coffee plantation, a specified land area, and ability to make a contribution in inputs. These are requirements that most of Dipilto's poor population cannot comply with. Therefore, that which unites some can also be the reason why others are excluded.

External actors can create conflict when their projects benefit only part of the population, as was the case with a project providing solar panels in the community of El Volcán. The population was unaware of the criteria used to select beneficiaries, thus causing a great deal of disagreement and suspicion, particularly because one of those who benefited was a leader's relative who already had access to electricity.

The municipality has hazard and risk maps, and has identified the population at risk. It has mitigation maps and organised groups to respond to disasters and forest fires, in addition to a radio-communication network that connects the communities with the municipality and SINAPRED. Despite these tools, the municipality shows a high level of vulnerability to a variety of risks, mainly economic in nature, given its dependence on fluctuating world coffee prices and the increase in coffee production costs, but also natural hazards (earthquakes and landslides) due to a high and irregular geography, as well as tectonic faults; social, given the outbreak of crime associated with lack of employment; and productive, due to the loss of soil fertility, among other factors.

The lack of access to land suitable for growing staple grains is a factor in preventing a reduction of the economic vulnerability of many families. The sale of labour to coffee or tobacco farms in Ocotal is the main livelihood for families with little or no land. Others provide masonry services, prepare tortillas, sell coffee seedlings, or work as hired hands. Many have migrated elsewhere (i.e. Ocotal, Managua, and Costa Rica) in search for work.

A risk aware approach would seem to need to be included among priorities in the Municipal Investment Plan. Investment priorities are still driven by the more immediate needs of the population, which in most cases are of a social nature (housing, roads, food, etc.), but do not take into account investments to reduce the threats identified in the various disaster risk studies. Only by creating sources of agricultural and non-agricultural jobs will economic vulnerability be reduced.

6.2 Terrabona

The municipality of Terrabona, a mostly dry area, is located in the department of Matagalpa, 116 km from Managua, and 62 kilometres from the capital of the department (INIFOM 2000). It extends over an area of 248.89 square kilometres at 540 meters above sea level. It borders to the north with the municipalities of Sébaco and Matagalpa; to the south with the municipality of San José de Los Remates; to the east with the municipalities of San Dionisio and Esquipulas; and to the west with the municipality of Ciudad Darío.

When discussing the hazard and risk factors faced by the population over the past ten years, the scarcity of rain and frequent droughts are mentioned most frequently. People said that when the first rains arrive, they feel motivated to plant, but as the dry spells within the rainy season keep getting longer, they often lose their crops. This situation is the main cause of food insecurity in the territory. In a participatory diagnostic assessment conducted in the municipality in 2005, and in the focus group discussions in this study, it was determined that the greatest risk is the lack of food resulting from drought. Climatic factors (droughts) are aggravated by inappropriate human activities, such as deforestation and unsuitable agricultural practices. To this must be added that the municipal government takes little action to reduce the level of risk to which these communities are exposed.

Poverty has been reduced in the municipality of Terrabona. Nonetheless, it is difficult to ascribe this effect to any one initiative or to concerted efforts to 'transform' livelihoods in the municipality after Mitch. Even after improving income distribution, the absolute number of poor persons increased from 1998 to 2005, since the population is growing at a higher rate than any improvement to the wealth distribution index.

In contrast with Dipilto, the municipality of Terrabona has had more support from national and local NGOs than from bilateral donors. However, limited efforts have been made to reduce risk. Mostly activities have been undertaken to create disaster preparedness capacities in the community, mostly to respond to such disasters as floods – when really it is droughts that are the greatest hazard and cause more damage to economic activity than floods.

The horticultural sector in the municipality is not as dynamic as the coffee economy of places such as Dipilto. Maybe this is the reason why aid initiatives for economic development have not continued. Limitations stem from structural conditions, such as the poor road conditions, limited access to financing and technical assistance, and few incentives to break with traditional marketing chains. The promotion of horticulture has not improved living conditions in terms of jobs and incomes, nor has it reduced the differences between rich and poor. Support for vegetable cultivation may have actually worsened exclusion patterns, as the benefits only reached people who had suitable land to grow vegetables or were already involved in horticulture.

Overall, the local level of organisation in the territory is weak, with no internal initiatives; those that do exist are conditioned or motivated from the outside. The community did not even seem to be aware of any civil and cultural organisations (i.e., sport and dance teams, etc.) existing in the community.

The social networks in *El Caracol* are influenced by the economic conditions of the population, as the landowners in the community do not get involved in local activities and only spend a few days a week in the community. In *La Esperanza* the social networks reflect the political leanings of the population, regardless of their economic status. In the *Barrio San José (Barrio Mitch)* these networks are based on proximity, friendship or shared labour interests, and not on politics or economic status.

There is no correlation between being a member of a social network and being a member of a formal community committee. The integration of the population into community committees is related to level of interest and being able to find "clever" ways of becoming members and thus reaping benefits, as many people have done. People in the territory have become used to seeking individual benefits rather than that of the community as a whole. The emergency caused by Hurricane Mitch led to a degree of mutual support within and among the communities. However, this sense of solidarity was not maintained over time.

6.3 San Francisco Libre

The municipality of San Francisco Libre is located in the department of Managua. It is the department's third largest municipality. The municipal seat is 79 km from the capital city, Managua. It has an area of 753 km² and is located in an area primarily suitable for cattle-raising. It has an irregular topography, which is primarily characterised as a dry, flat, rocky area, though there are also hills throughout the municipality. It borders to the north with the municipality of *Ciudad Darío* (department of Matagalpa), to the south with Lake Managua, to the east with the municipality of Tipitapa (department of Managua), to the west with the municipality of *La Paz Centro*, and to the northwest with the municipality of *El Jicaral* (both in the department of León).

People who participated in the focus groups in San Francisco Libre stated that they felt vulnerable to a range of different hazards. After Hurricane Mitch, the municipality of San Francisco Libre has faced a number of problems related to the climate, health and pests affecting agricultural production. According to the population, since Hurricane Mitch floods are more frequent during the rainy season, as are droughts during the dry season. The two extremes can occur during the same year, so that seasons are now more marked.

Over the past years, drought has affected most of the municipality, limiting access to water and causing crop losses. Further, the population has shown concern over the increase in pests during the past years, especially locusts, inchworms and rats. These outbreaks have negative effects on production and family health; there have even been cases of Leptospirosis (Weil's disease) in the past year.

In the municipality of San Francisco Libre very few changes have been made to reduce risks from events such as Hurricane Mitch. During the wet season, every strong rainfall (which occurs frequently) will cause the rivers and Lake Xolotlán to overflow, damaging access roads and cutting off communication with some communities. Throughout the year the municipality is affected by extreme weather events, ranging from rainy-season floods to dry-season droughts. In both cases the production of staple foods is severely threatened.

Given these endemic emergencies in the municipality, the communities have established links with external organisations that provide aid whenever such an event takes place. However, no long-term solutions have been sought to reduce the risk to which families are exposed or to make them less vulnerable, except for some slope conservation works. The municipal government has given priority to road maintenance and works that meet basic needs, rather than to the implementation of works geared toward reducing risk.

Unequal access to livelihood opportunities among families and communities affects the possibility of attracting large-scale projects to change this situation of inequality. In communities where there is a higher number of relatively well-off families, the likelihood of attracting foreign-sponsored projects is higher, as is the case of *La Conquista*. External interventions have helped many families improve their standard of living, but they have also fostered fragmentation due to their limited coverage and since they tend to work with the groups that are somewhat better off.

Several issues affect social cohesion, e.g., the location of houses, religion, geographical features, living conditions, and links with NGOs. Communities where major progress has been made in terms of their social capital (organisation, leadership, cohesion) have an active leader searching for external support. Further, it is difficult to achieve strong cohesion in large and scattered communities, where many of the inhabitants barely know each other and have no interests in common that could create synergy. The lack of livelihood opportunities is another factor in preventing social cohesion. Many in the local population migrate in search for work and there is a high turnover of families in the various communities, with some leaving to look for better opportunities, while others take advantage of the chance to move in and occupy the empty homes.

A large investment was made in new houses after Mitch, but many of these housing projects failed or were abandoned for a number of reasons, among which were the lack of livelihood opportunities or isolation, as well as the failure to form communities due to the diverse origin of the population or unwillingness to live in a more urban environment. In the next chapter these issues related to the mismatch between housing investments and rural development are explored in more detail.

7. Comparisons of the three municipalities

7.1 Return of the state and civil society

Central government entities have only a limited presence in the municipalities under study. The Ministry of Education provides coverage in all three municipalities through its schools, while the Ministry of Health has a network of health posts and centres. The other public entity active locally is the National Police. MAGFOR, the Institute of Rural Development (IRD), the Nicaraguan Institute for Agricultural Technology (INTA, the agricultural extension service) and MARENA have little or no presence in the territory, either physically or through projects. Only INTA has an office in one of the municipalities under study (San Francisco Libre).

The number of central government entities in the municipality remains unchanged from before Hurricane Mitch. In the case of the municipality of Dipilto, its close proximity to the town of Ocotal makes it unnecessary for these entities to have physical offices locally. However, in practice international donors or NGOs sponsor more projects than the government.

Once the emergency ended and reconstruction projects were completed, the number of external organisations in the territories decreased considerably between 2001 and 2002. The work of the organisations that remained in the municipalities after that point in time grew more relevant.

Municipal government is institutionally responsible by law to prevent disasters, and in practice the municipalities have been making significant natural disaster preparedness efforts by setting up emergency committees, bringing together the various organisations in the municipality, and coordinating with SINAPRED. Nonetheless, the emergency response focus of these committees is far greater than their prevention efforts. Training committees to identify the areas most at-risk in each territory has allowed for locating them for mapping purposes, a matter we will address below.

Local governments know the existing risks in their municipalities and often also know the steps needed to prevent potential disasters in the territories. However, the difficulty resides in implementing these measures, as resources to implement prevention works involving infrastructure such as retaining walls, gabions or bridges are scarce.

In addition to local governments, producers' organisations are another permanent feature in the territory, but they have received considerable additional support in the years since Hurricane Mitch. Most of these have turned into cooperatives and to a lesser extent into associations. These organisations play a significant role in the economic and social development of the territories. Their ability to negotiate foreign resources and the influence they exert on the productive processes of their members stems from leadership with local roots. The examples of coffee and forestry organisations in Dipilto and the cooperative in the community of *La Conquista* in San Francisco Libre illustrate the ability of these organisations to negotiate projects and secure resources in a sustained manner over time.

These organisations may generate economic activity but also social differentiation in their communities. Not everybody shares in the benefits in an equitable manner, mainly because not everybody qualifies to join an organisation. The main factor in social fragmentation is the ownership or lack of land, and this is one of the variables that determine poverty, as will be seen in the next section. Some local gender oriented NGOs have found a significant level of sustainability over the past ten years. Activities are focused on achieving gender equity and promoting women's rights. The impact of their work has increased women's participation in the community, but traditional gender roles in the home have remained mostly unchanged. Another positive factor has been the decrease in domestic violence.

Some international NGOs have had a long-term presence in the territory. The population express respect for those few agencies that stayed beyond the initial post-Mitch recovery phase but have little recollection of those that came and went.

Finally there are a number of organisations that implemented shorter projects, but have kept in almost constant contact with the territories, particularly as regards response to emergencies. Though it cannot be denied that their aid in emergency situations is helpful, they do not put forward permanent solutions that might decrease the vulnerability of the population to these events.

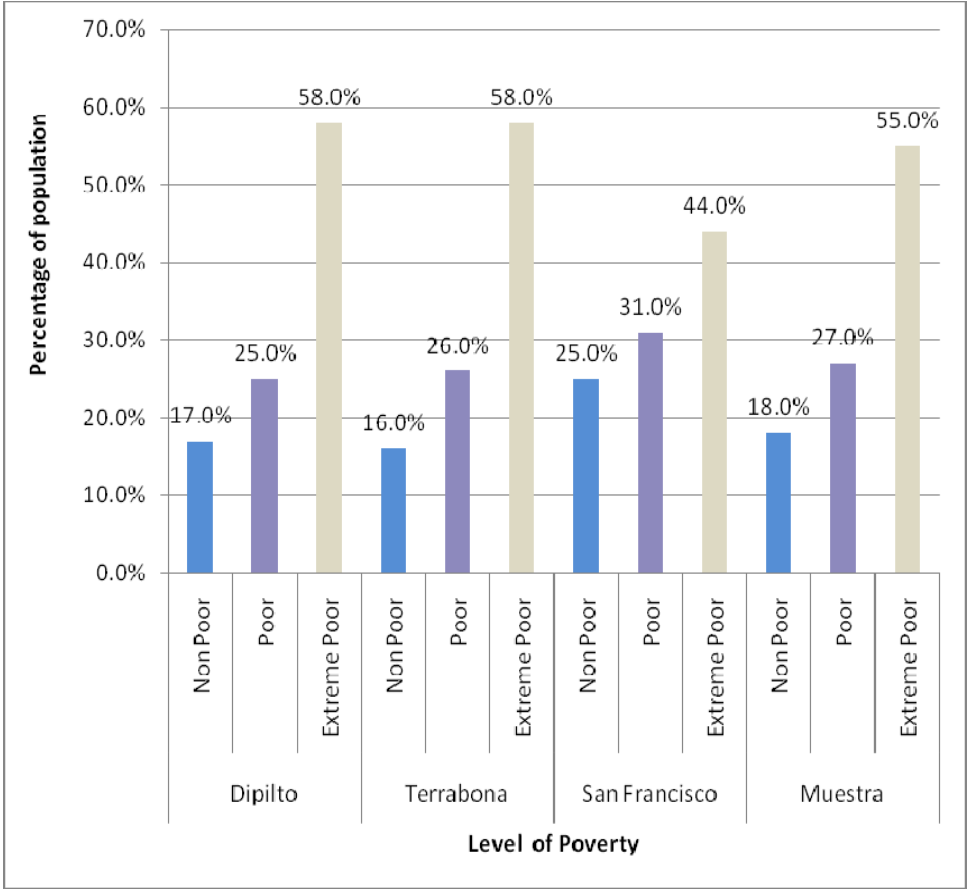
7.2 Poverty, livelihoods and economic recovery

Poverty is the main factor in the vulnerability of the Nicaraguan population. According to the Standard of Living Survey (INIDE, 2005), 48.3% of the national population lives in poverty and 17.2% in extreme

poverty. In rural areas, 70.3% of families live in poverty, with 30.5% in extreme poverty, while 91% of the rural population lives on less than two dollars a day.

In the area under study the perception among locals is that 18% of the population is not poor, 27% is poor and 55% very poor. It is worth mentioning that these results are not comparable to those of the Living Standards Measurement Survey 2005, because different methodologies were used.

Graph 3. Poverty levels in the municipalities under study



Source: Drawn up based on well-being classifications

Livelihoods

Differences reflected in the criteria used to define the levels of well-being are related to livelihood opportunities; i.e., ownership vs. non-ownership of coffee plantations in Dipilto and cattle ownership in San Francisco Libre. Access to irrigation and higher wage agricultural tasks are the most appreciated economic activities.

The somewhat better off households typically have the capacity to cover their basic needs throughout the year by means of stable livelihoods and flows of resources that do not fluctuate much in scale or type of activity. Families with an intermediate status have access to the same livelihood opportunities, but at a smaller scale. They have less land and cattle, and smaller plantations, but they earn more than day labourers. However, their agricultural activities are less profitable. Most importantly, however, they do not have to make ends meet on a day-to-day basis, as the poorest must do.

The poorest have no resources and rely more on day labour or domestic work. Only rarely do they have access to income from small commerce and service businesses. Remittances have become a key element in rural areas. In Terrabona, for instance, migration is important at all levels of well-being,

including the non-poor and less poor returning from abroad. The poorest receive remittances from their children who engage in domestic work in Managua or find work as farm hands in other municipalities.

Some livelihood activities carried out in the territories are detrimental to the environment, such as the collection of fuelwood in San Francisco Libre. The poorest collect the fuelwood and sell it cheaply to the non-poor, who carry it to Managua in their trucks and make a profit from the sales.

Access to land suitable for planting staple grains has a bearing on the situation of poverty of the municipal population. In some municipalities there is more access to land than in others by means of sharecropping and rented land. The landless in Terrabona have more access to farming land than the poor in Dipilto. As with the land, cattle ownership is a key element because it is a privileged means of capitalisation in most of the country's rural areas.

In addition to defining the level of well-being based on livelihood, the importance of housing conditions is evident. The better homes were built with solid materials, good construction techniques, good quality blocks, tin roofs, and had a tiled floor. Some houses have kitchens built outside and consider this to be a good improvement. The homes of the poorest are shacks built with rubble, sticks, mud, straw roofs, or often badly built adobe walls and dirt floors. Another characteristic mentioned in all the municipalities was access to food: whether people eat three or two times a day, or just once, differentiates between those who go hungry and those who do not.

Economic projects

Economic recovery has come in tandem with projects sponsored by donor agencies, the central government, and national NGOs. These programmes and projects have been focused on integration into agro-export markets and food security (Food-for-work and kitchen gardens).

This logic is due in part to government strategies expressed in development programmes, with particular emphasis on the rural sector, which has specific sub-programmes for the main export commodities and food security in general (www.prorural.net.ni). Donors have supported technical training programmes, credits and the creation of channels and infrastructure to collect and market such commodities as coffee, vegetables, cocoa and milk. The main donor agencies (Danida, FINNIDA, SDC, USAID, Sida and AECI), have launched interventions of this nature in several areas of the country where these export commodities are produced. The goals include an increase in productivity, improved quality, productive diversification, and product differentiation.

The observations made in PRORURAL's mid-term evaluation regarding this approach seem entirely valid. The strategy is excessively focused on agriculture; it does not take into account the remainder of the rural sector; it unduly favours export commodities through value chain development, and is directed to medium and large-scale producers. PRORURAL's strategic proposal does not provide an adequate solution for small-scale farmers, poor rural families and the areas with least potential (Tapia, 2007).

The case of UCAFE in Dipilto is a good example of these interventions, focused as it is on an export commodity such as high-quality coffee. They have improved the coffee quality by promoting organic production, differentiating their products and adding elements to the chain value, i.e., the production of packaged ground coffee. However, not all cases found in the territory are successful, and in this respect we can mention the case of horticultural cooperatives in the municipality of Terrabona. A factor in the success or failure of these projects is the existence and consolidation of local entrepreneurial groups (mainly in the form of cooperatives) who make the best use of these opportunities. The consolidation of these groups depends on the transfer of capacities, ownership, and decision-making autonomy.

In the emergency and rehabilitation phases, food-for-work programmes were promoted. These projects are seen as positive by the poorest population, in contrast with entrepreneurial groups who look at these with suspicion, as they create competition for labour. In fact, these programmes do not solve the structural problems of lack of employment or scarcity of food that may exist in the territories.

Kitchen garden projects have been increasingly promoted. It has been noted that kitchen gardens are a good complement for families who are able to sustain them, as these provide other sources of income, as part of a productive diversification strategy. In the past year the government has implemented the *Hambre Cero* Programme. The assessment of the local population and of some of the project sponsor organisations is that it has too limited a scope and does not reach the poorest sectors. In order to have access to these projects, families must own land and, as previously mentioned, the poorest have no land of their own. Some families also have problems regarding the upkeep of their animals due to lack of fodder, as these compete with humans for food.

7.3 Rebuilding the social fabric

A method for ranking affinity was applied for the purpose of defining the influence of social capital on the post-Mitch reconstruction process. This method is based on interviews with a variety of participants from the communities, and is intended to determine who relates to whom and the type of values that unite or divide communities.

This section includes the overall results of the analysis of the social networks in the nine communities visited. The main findings refer to factors that define the social networks, the gender-based characteristics of women's and men's networks, the types of communities according to their level of cohesion, leadership and organisation, as well as the role of external actors, and lastly the role of social networks in post-Mitch reconstruction efforts.

Six main factors in the shaping of social networks were identified in the communities under study. These include the origin of families in the community, the way in which houses are distributed according to the geographic features of the community, religion, political parties, and the level of association, well-being and gender.

Origin of the families that make up the community: Social cohesion is the result of many years of coexistence, of sharing and being supportive of each other. In recently established communities this process is much shorter and thus, the process of creating trust is still underway. New settlements were formed after the hurricane, but these have not always been able to function as communities; e.g., *Barrio Solidaridad* has not been able to consolidate as an integrated community. This situation is fairly similar to that of the recent communities in the new agricultural frontier (areas where agro-pastoralism is expanding at the expense of natural forests) where non-compliance with the law leads to the predominance of uncertainty and distrust. Thus, relationships are based on strong family ties and friendships, cooperation with the rest of families in the community is limited, and links with external actors are very few.

Distribution of houses according to their geographic location: In all the communities, the geographical features of the terrain and the distribution of houses have a determining impact on social networks. Those features that affect communities the most include rivers, gullies, and hills, as well as the lack of roads or bridges. The rainy season is an element that hinders social interaction between sectors in the community. In communities that are crossed by rivers, such as *La Conquista*, *El Caracol* and *Laurel Galán*, there is always a group of people who are thought of as being "from the other side of the river", and depending upon the severity of the rains there are times of the year when they are cut off from the rest due to flooding. The communities are organised by neighbourhoods, although often networks too are segmented by neighbourhood, thus reducing their circle of relations to those closer to them. As a result, family ties and friendships are strengthened, while relationships with neighbours are weak.

The religion of families in the community: Catholics and Protestants ("Evangelicals") predominate in the communities. This is a source of contact among those who share the same faith and of differentiation from those with a different faith. This situation is common to all the communities and affects women's networks more than those of men. Many protestant women create close networks of "sisters", within which they interact socially when they go to church. Network members are supportive of each other when they face economic hardship or other kinds of problems. If there are Catholics in the community, they meet separately and do not accept those who do not belong to their church. They celebrate mass with the lay religious leaders of the Delegates of the Word or priests who visit the communities once a year to carry out marriages, baptisms, confirmations, etc. Further, they celebrate all activities in the liturgical calendar of the Church. A constant feature is that regardless of the existence of actual Catholic churches or Protestant "temples" locally, there always are groups of people from both religions. This is one of the most common reasons for fragmentation in the rural communities. Women's social networks take the religious factor more into account than the men do, in part because they take this factor more seriously and create groups that exclude women from another faith, even in non-religious activities such as community meetings.

Presence of political parties: The two political parties that generate the most political polarisation in the communities are the Sandinista and Liberal Parties. This politicised situation creates conflict within the communities and is related to ties with key external actors. For instance, if the mayor is a Liberal, the local government will tend to provide benefits only to communities with predominantly Liberal constituencies. The same happens if the mayor is Sandinista; support is directed at communities that vote mainly for the FSLN. With the introduction of the Citizen Power Cabinets (CPCs) in all of the communities, there is a group of persons who have been selected to participate in and receive access to

the *Hambre Cero* programme (food production vouchers), the *Usura Cero* programme, delivery of gas stoves, and other specific benefits.

Level of participation in associations: To be organised or not is another form of differentiation within social networks in the communities. In communities where there are producers' or women's cooperatives, there is differentiation between cooperative members and non-members. Members receive credit, technical assistance and training. However, a number of requirements need to be complied with in order to be able to join these organisations. Members of a cattle ranchers' cooperative must of course own cattle in order to participate, for example. This means that what unites some differentiates others. It seems a contradiction to say that organisation also generates social fragmentation, but the biases created by external actors also cause this kind of divisions. For instance, some of the non-benefiting local population are requesting to be accepted as families of children sponsored by World Vision in Nicaragua, since they meet all the criteria for sponsorship. In the analysis of evaluation criteria matrices of local and external organisations, one of the most valued criteria is the number of project beneficiaries. Projects benefiting only a few families in the community create many conflicts, as is clearly stated by a leader in *El Caracol*: "*If they don't bring benefits to all, it is better for them not to bring anything at all, or else there will be conflict*".

Differences due to the levels of well-being and economic conditions: The wealthier families in the communities do not participate in the local social networks. Most are large-scale farmers who live in urban centres. It is their foremen who live on the farms. They come to the communities to pay their worker's wages, or when they need to make an investment, sell cattle or crops. Social networks exclude these few families. They are described as people *who do not mix with anybody, as they have no need, don't live here or only stay briefly*. However, many large-scale farmers have engaged in sharecropping arrangements with landless neighbours, whereby they allow them to plant staple foods on their farms. In exchange, these people work as day labourers when needed or must feed their stubble to the cattle of the landowners. However, this type of dependence is not classified by the population as based on friendship or neighbour relations according to the classifications by affinity.

Gender factors: There are marked differences in the way men and women relate among themselves. The clearest difference is how men relate to each other, depending on who they work with, whether they participate jointly in a project, attend meetings together, go out together for a drink or play baseball. Women relate more among themselves due to the proximity of their homes, as neighbours, or as members of the same church. In some cases, women's negative characteristics stand out, i.e., if they are gossipy, difficult to get along with or unsociable; in other cases, it is their positive characteristics that are noticed, i.e., if they are supportive and collaborative. In either instance, men and women engage in relationships based on friendship or kinship.

Women's networks are grouped according to the close proximity between homes due to the fact that they are in charge of domestic chores and the children's care. Thus, they do not go out much. This reduces their circle of relationships to that of their female neighbours. Participation in church activities is an important way of relating among themselves. Another way of interacting socially is carrying water from water wells or rivers, or washing clothes. They use these moments to talk about their children, their husbands, and themselves: their illnesses, their sad or happy moments. Members of women's organisations, cooperatives or local committees interact at the meetings they attend, though women integrated into these organisations are only a minority in the rural area.

No statistical significance was found when analysing the correlation between participating in a committee and belonging to a given social network. In only two cases did this appear to make a difference: a community in which the leader is a woman where those participating in the local committee belong to the leader's network, and another where some of the women in the community belong to a cooperative set up more than 15 years ago, which is currently implementing small-scale economic projects with support from NGOs. Furthermore, there is no relation between the levels of well-being and women's social networks, in contrast with men's networks that reflected significant differences in five of the nine communities. This may be due to the fact that in the case of women's interactions, these are in most cases not based on the exchange of economic resources, but rather on such values as friendship, proximity, and religion. Moreover, this is due to women's access to small economic projects, since they do not own land, in contrast to men.

Men's social networks: As explained above, an element of unity mentioned by men is the fact that they work together as day labourers, collect firewood or pick coffee together, engage in sharecropping, or support each other in preparing the land and harvesting crops. In other words, who works with whom is a factor in the establishment of men's social networks. Mention was made of men who belong to cooperatives and attend project meetings, as being *the ones that inform others of the meetings that will*

be held or the ones that always participate. In most communities, groups of men were classified as those who go out for a drink or play on a baseball team. Men also formed networks of family members and friends, and mention was made of such values as *they always help each other, share information on a potential work opportunity, and support one another.*

Types of communities according to social networks

According to the interviews carried out in order to understand the role of leadership, determining factors in the networks and the characteristics of men's and women's networks, three types of communities were identified: i) communities living in virtuous circles; ii) communities in intermediate situations; and iii) communities trapped in vicious development cycles.

Communities living in virtuous circles: These communities have comprehensive social networks, that is, with no major conflicts due to religion, politics or differences in economic status. These social networks have an active and legitimate leadership, and they are organised to negotiate with external actors. In the case of *Los Tiosos* the level of cohesion is due mainly to the central role played by their leader. She has engaged the community in positive dynamics despite the adverse conditions in which they live. This community is made up of people affected by Hurricane Mitch who got together in a very dry zone, far from their sources of work. The leader's efforts have attracted the support of several organisations, thus receiving training and changing gender relations.

Communities in an intermediate situation: Communities with good leadership, but which also have some level of social fragmentation despite their level of organisation, have been ranked as communities in an intermediate situation. The reasons for fragmentation in three of four communities classified under this category owe their differences to the living conditions and particularly to ownership of land, coffee plantations and cattle farms. This is the case of the communities of *El Caracol*, *La Conquista* and *El Volcán*. In these communities those with some economic power have more contacts with external actors and receive most project benefits. There are instances in which fragmentation is economic rather than political, as in the case of *La Esperanza*, where the Liberals from the upper part of the community have the leadership and exclude the population from lower *La Esperanza*, who are Sandinistas.

Communities trapped in vicious cycles: Some communities are affected by social fragmentation, problems of leadership and lack of organisation. These communities are *Laurel Galán* and *Solidaridad*. A number of reasons have led to the disintegration of the former, including the imposition of a leadership acting as mandated by an external organisation, thus creating differences between beneficiaries and non-beneficiaries. *Laurel Galán* is a very large, densely populated community, making it more difficult to communicate and impeding cohesion. Many different trades are practiced in the community and people leave for other municipalities in search of work. Its size allows for a large and very diverse quantity of actors and interests. The community of *Solidaridad*, for its part, was set up during the post-Mitch reconstruction phase. It shows strong signs of social disintegration, crime and drug consumption problems among youth, and the lack of livelihood opportunities aggravate the situation.

Whereas overall findings highlight how internal networks are of primary importance, this does not mean that external actors have failed to influence the ways communities function. In some cases impacts are positive and in others they are not. Examples include:

- Terrabona's RPS introduced a temporary social protection system which collapsed without external funds.
- The municipalities in their role of local government have been supportive for some and not for others. This is the case with communities that have not received any municipal support because the local population belongs to a different party.
- POSAF helped improve the production practices of organised producers in San Francisco Libre, as well as forest management, including timber and fuelwood extraction.
- World Vision has had a positive impact on the communities where it has been working for a number of years. In contrast, in other communities where it still has limited impact, benefits reach only a small segment of the population, thus leading to social conflict.
- UCAFE and ADEPROFOCA receive support from Danida and ACRA. These are focused on improving coffee production among organised producers by facilitating technical assistance and the betterment of coffee plantations and infrastructure. Thus, these organisations help strengthen internal ties and underpin the economic level of participating families.

- SINAPRED set up rescue brigades in the communities of *El Volcán* and *La Laguna 2*. These are made up of exclusively of men because of their participation in rescue efforts or forest fires. Thus, SINAPRED has a bearing on the establishment of a formal network.

During the emergency caused by Hurricane Mitch, all the communities showed expressions of solidarity towards those most affected. There were instances where the population living in at-risk areas was moved to new settlements in other safer places. However, many houses in these new settlements were abandoned and in others temporary migration in search of a livelihood has impeded social cohesion. In other communities, improvements were made to the homes in the same plots where people lived before the hurricane, or people moved to other homes within the same community. It was not possible to build social cohesion in most communities for four main reasons:

- The lack of sustainable livelihoods prevents families from staying in these new settlements, forcing many of them to migrate temporarily or permanently.
- People were accustomed to living on large plots and raising animals. The change to more urban areas has affected the way they interact and in some cases led to difficulties with neighbours and other misunderstandings.
- Social disintegration came about as a result of alcohol and drug consumption, and the lack of livelihood opportunities.
- Absence of active leaders has prevented efforts to seek support in solving the needs of the community. *Los Tiesos* is as poor as *La Esperanza*, but the former has a higher level of organisation due to the role played by their leader in attracting support. In contrast, the lack of leadership in *Solidaridad* has made people passive. They limit themselves to waiting for aid to arrive.

Abandonment of the housing projects reflects the poor viability of this type of intervention from the perspective of the expected inhabitants, taking into account their practices, social cohesion and the availability of nearby livelihood opportunities that ensure that people choose to stay over the long term.

7.4 Risk reduction

All donor organisations, central government entities, NGOs and local governments shared their positive assessment of the enactment of Law 337, which created the National Disaster Prevention, Mitigation and Response System, and with it the establishment and operation of SINAPRED. All organisations expressed their willingness and interest in working within the framework of Law 337 and SINAPRED. Overall, public institutions at both central and local government level are and feel part of SINAPRED.

Some international donor agencies point to the lack of government investment initiatives as partially responsible for the lack of progress. Most of the proposed projects are directed at financing current expenses in public sector institutions and very little is allocated to investment. The institutions themselves admit they rely to a considerable degree on projects in order to operate and comply with their mandates. This reliance on projects does not allow for addressing underlying, structural vulnerability. In some cases, national institutions are prevented from drawing up their own agendas because of the need to focus on projects for their very survival.

In the area of prevention at municipal level, efforts by SINAPRED, SDC and others led to the preparation of risk maps. However, the different institutions involved use different mapping methods, though both are focused on floods and landslides. The method used by SDC also includes earthquake risks (SDC, 2002). These maps do not include other types of risks such as the droughts, which affect several municipalities, including San Francisco Libre and Terrabona. Several municipalities have their own disaster response emergency plans and emergency brigades or committees. Some of the municipal committees have received training and equipment. However, there have been cases of inadequate maintenance of this equipment, and when its lifespan ends it is not replaced.

Municipal authorities and organisations with long-term commitments to the municipalities know the problems that make the population vulnerable. There is hazard awareness in the territories but little capacity to carry out disaster risk reduction initiatives. The clearest case is that of San Francisco Libre, where year after year the same emergency situations arise due to floods during the rainy season and droughts during the dry season. However, no appropriate measures are taken to reduce vulnerability and prevent these emergencies. The solutions that need to be implemented are known, but there is a lack of resources for implementation.

The municipalities allege they have no resources for disaster risk reduction investments, and several donor agencies have therefore allocated funds to this type of investment. However, bottlenecks form in accessing these funds due to lack of capacity to generate technically appropriate proposals, provide counterpart funds and set up administrative mechanisms to ensure transparency in the use of municipal funds.

Some municipalities, such as Dipilto, also have environmental management plans and units. Plans are for the most part focused on protecting hydrological basins, ensuring the quality of water and preventing deforestation. Some development projects linked to the promotion of agro-export commodities take into account the need for soil conservation and clean production practices. As regards the municipality of Dipilto, the introduction of contour lines, hedges, and filters for wastewater from coffee processing facilities was noted. This type of work contributes to differentiate the product, in this case coffee production, and allows for certifying producers in the ecological market. The same soil conservation practices were introduced to the municipality of Terrabona to plant staple grains. However, when the projects ended people did not continue to implement these practices. In San Francisco Libre, a project linked to the environment (POSAF) also has productive management components and has been more successful. It appears that environmental management efforts related to commercial agriculture are more effective than those related to subsistence production, but these examples are too few to draw clear conclusions.

Overall, risk reduction policies are insufficiently linked to efforts aimed at economic development, poverty reduction, disaster prevention and reduction of vulnerability. This is the case at all levels -- the state, donors and civil society organisations. In much the same way as the state is divided into ministries, donors and NGOs divide the programmes among themselves. On occasion certain programmes do not know what other programmes in the same area are doing, thus displaying weak coordination.

This research sought to highlight the efforts linked to adaptation to climate change. In the territories visited the population is oblivious to the issue. They consider it a remote problem that does not directly affect them and ignore that some changes in weather patterns are already related to this event. The government has recently created the General Climate Change Directorate at MARENA, which may contribute to giving the issue more relevance on the national agenda. However, donors are aware that this interest seems to be more motivated by accessing funds than reducing risk.

8. Conclusions

Return of the State and civil society

Early fears that the Mitch response would undermine the leadership of the State and the engagement of civil society were exaggerated. The problems that occurred were instead a reflection of a failure on the part of the international community to understand issues of local capacity, much less engage in contributing to developing Nicaraguan organisations and institutional frameworks. For the most part this was a reflection of the timeframes and modalities of humanitarian response. The aid community failed to engage because:

- they did not have incentives to acknowledge (much less explore) how a prevailing lack of capacities at strategic levels would ultimately render many efforts futile;
- they were primarily focused on 'picking winners' to lead future development, and were therefore uninterested in how to deal with pre-existing inability to address the vulnerability of the 'losers' of Mitch at municipal level; and
- even those agencies that retained a longer term commitment to addressing recurrent disasters were in most cases not equipped to address capacity gaps.

Despite these deficiencies, institutional capacities have been developed. There is now a far better legal and structural environment for dealing with recovery. Human resource investments have resulted in the existence of a large number of staff in government and civil society who know what should be done. The primary gap in the return of the State and civil society is that the organisations in which these people work lack the financial resources and political incentives to address the segmentation of economic growth, poverty alleviation and environmental protection at local level. Relief response remains the most politically attractive and financially accessible approach to dealing with disasters, even though legal frameworks

and prevailing knowledge would seem to suggest alternative priorities related to risk reduction and indeed changes in prevailing development paradigms.

One area where the repercussions of Hurricane Mitch can still be felt is in the nature of aid relations. The declarations, coordination structures and macro plans of the Mitch era may be long forgotten, but a process of change starting from that time can be observed. Even if attribution of how much the hurricane affected these relations cannot be strictly verified, this study has detected the echoes of a process of change that began at that time. It is not possible to prove that the current attention to risk was sparked by Mitch or to state with certainty that the dialogue which began with the Stockholm Declaration has helped to form approaches to harmonisation and alignment that characterise the current discourse. It is nonetheless likely, given that the consensus against narrow, project approaches which was at first a reaction to fears of poorly coordinated recovery has been a central feature of the development discourse in Nicaragua throughout the subsequent decade.

There are two stages that can be discerned in the relations between donors and Nicaraguan actors in issues related to recovery. In hindsight, the Stockholm Declaration cannot be said to have achieved its objectives in a sustainable manner. However, it did ask the right questions and did create an initial impetus for a number of changes that have borne fruit in different ways. The Stockholm Declaration set the stage for what was for some time a positive process of moving toward aims that would later be codified in the Paris Declaration. It provided an international seal of approval on recognition of civil society as being more than 'implementing partners'. Despite as yet modest outcomes, it did (after some delays) get risk reduction onto the agendas of government and civil society. It also helped to ensure that transparency was and is a core aspect of the Nicaraguan political discourse, albeit with great challenges in putting this principle into practice.

Poverty, livelihoods and economic recovery

Ten years after Hurricane Mitch, it can be asserted that few changes have been made in terms of reducing the population's vulnerability to natural disasters. The population is also vulnerable to other types of social and economic events, such as rises in the price of food commodities, drops in agricultural prices, unemployment, crime and disease. The main cause of vulnerability is the poverty in which almost half the national population and mainly rural families are steeped.

From the perspective of families, poverty consists of a lack of livelihood opportunities, and for rural families' access to land, together with cattle ownership, is one of the main factors differentiating social status among themselves. The local population has few work alternatives except in low-paying jobs. Access to or lack of livelihoods increases or reduces the possibility that a family will live in poverty.

Ten years after Hurricane Mitch the main 'impact' of the hurricane and the recovery effort is the creation of new 'communities' among those who received housing. The hurricane and the response have changed the rural landscape in large areas of (primarily) rural Nicaragua. Mitch provided many families the opportunity to obtain a home in safe conditions. However, housing projects did not always result in viable alternatives for the population and in many cases it was not possible to build the social fabric due to the remoteness of cultivation area or the lack of sources of work in the vicinity.

Apart from these new settlement patterns, most of the claims made in 1998 and 1999 about the profound nature of impact on livelihoods and development have been proven false. It is thus among the residents of these communities (and even those who have abandoned the houses that they received) that the extent of the changes in poverty, livelihoods and economic recovery can be judged, since it is they who are still living in the shadow of Mitch.

After the provision of housing, the main strategy which was pursued was to 'pick winners' who could take advantage of the opportunities of economic development. The assumption (usually implicit and rarely analysed) was that these winners would create jobs, investment or other spin-off effects that would address the poverty and inequity that were created (or intensified) by Mitch in a sustainable manner. 'Picking winners' has worked – for the winners at least – but the positive externalities have not been forthcoming. Nonetheless, it would be inappropriate to laud those who called for alternatives or accused the aid community of feeding a neoliberal model that would enhance poverty further. There was also considerable investment in agro-environmental measures, with equally meagre impact on the overall poverty profile of the Mitch affected areas. It is impossible to assess the counterfactual of what the ten year after situation for the losers would be if the winners had not been supported. A failure to invest in commercialisation might have led to even greater stagnation in the livelihoods of the poor.

The winners of the recovery process have been the organised commercial actors. With the exception of a few programmes, it is the cooperative sector that has been able to best benefit from recovery programming, and even then, only where they have represented their members. This highlights how organisational capacity is a precondition for benefiting from recovery investments, rather than an outcome of aid inputs. If vulnerable populations are to benefit from livelihood recovery efforts, there must be efforts to promote organisational development before the disaster. Capacities are more important than capitalisation.

Food security programming does not usually 'pick winners', but it does not reach the real losers either. These efforts can reach a somewhat poorer section of the population than conventional economic development efforts, but not those who have the least pre-existing access to productive assets. Some of these efforts, such as investments in home gardens, seem to have sustainable impact, but small livestock investments are more problematic. Those who have lost the most in Mitch are dependent on more structural solutions to create access to livelihoods. A link between livelihood support and social protection would seem in order, but there were no concerted attempts to explore this juncture in the Mitch recovery process.

Rebuilding the social fabric and community development

Location, geography, history, leadership and opportunities for social interaction between men and women play a determining role in the cohesion of social networks. Social fragmentation is present in most communities, with the main confrontations between groups stemming from political differences between Sandinistas and Liberals; religious differences between Catholics and Protestants (evangelicals); differences in living conditions between landowners and the landless; the levels of association between members and non-members; and between beneficiaries and non-beneficiaries of assistance brought in by external organisations. When analysing the communities based on virtuous circles, intermediate situations, and vicious cycles, the predominance of communities in an intermediate situation is due to their level of organisation and leadership, although there are elements leading to fragmentation embedded in the social networks. Communities in virtuous circles show that it is not enough for a community to function correctly based on such values as solidarity, cohesion and good leadership, if local actors do not follow the same values. The role of local governments, NGOs and other actors is key to succeeding in achieving sustainable development. The non-functional communities have too many conflicting interests due to the large size of the community, the high number of actors, and the dispersal of interests, all of which impede social cohesion. In other communities there is a high degree of social disintegration as a result of high crime levels, alcohol consumption and family disintegration due to the prevailing chauvinistic (*machista*) culture and the lack of work opportunities for youths that are now joining the labour market, among others.

Conflicts within micro and national political structures have been fuelled by the Mitch aid flows. These conflicts have proven manageable, but tend to be exclusionary. It is within this exclusion where the recovery effort has most strayed from professed ideals of equity and transformation, but the observers of recovery are surprisingly silent about these community level processes, perhaps taking them for granted, perhaps being uneasy with unpacking the uncivil nature of civil society.

Some efforts that were initiated during Mitch have changed social relations, gender most notably. But this has only occurred where these efforts outlive the recovery projects and continue in other forms. This suggests that realism does not need to be equated with fatalism and a *laissez faire* approach to changes in the social fabric. Aid can influence the nature of community development, but not if quick fixes and visions of harmony and equity blur strategic thinking.

Reduction of risk

So ultimately, has disaster risk been reduced? Most of those interviewed at municipal level felt that things were the same or somewhat better. At national level there is more pessimism. Despite major gains in terms of policies, awareness, skills, organisational development and legal structures, the impact of small disasters appears to be greater. There are said to be more fatalities (though reliable comparable statistics are not available) and greater destructive impact of floods on housing and livelihoods. An institutional framework is now in place, but it remains seriously under-resourced. Furthermore, given the improvements in many respects in responding to hazards, this would indicate that growing risk derives from increasing vulnerability. Little progress can be observed in coming to grips with vulnerability.

The intentions of recovery after Mitch were to bridge the gap that existed in prevailing concepts of disaster. When Mitch struck, there existed a dichotomy wherein disaster was merely associated with response and development was focused on economic growth. The bridge that was to be built after Mitch was to consist of a holistic perspective on hazards, risk and vulnerability. Today the conceptual and formal institutional superstructure of that bridge has been established, but apart from a few pilot efforts there is little traffic flowing across it. The primary reasons for this are as follows:

- lack of state and municipal budgetary resources to move from words to action;
- risk is a secondary priority that is acted upon only if international funding is available;
- risk is associated with hazards and response, rather than vulnerability;
- vulnerability reduction is seen as being an ambiguous and overwhelming task, and there is a perceived lack of tools to integrate vulnerability analysis in development planning; and
- there is an assumption that reducing vulnerability would be too expensive to undertake, so there is hesitancy toward investing in the transaction costs of coordinating and mobilising the actors that would need to be involved in addressing vulnerability to disasters.

Hence, despite the bridge, vulnerability reduction remains lost in the gaps caused by the segmentation of economic development, poverty alleviation and environmental protection efforts. An awareness of the implications of climate change should break down this segmentation, but thus far it is instead getting stuck in these very same gaps. Application of the lessons of Mitch could contribute to overcoming these gaps, but these challenges have not been linked in the national discourse. Climate change is just starting to raise attention to the need to look again at how to overcome these obstacles, but the financial, human and organisational capacities to act remain as they were. This research has found that Nicaragua has made enormous progress in hazard assessment and, to an extent, in understanding risk management. But skills, methods and the financial resources to undertake a serious analysis of vulnerability do not exist, and therefore the equation of how disasters and development contribute to risk remains incomplete.

Vulnerability is primarily a product of the same factors that generate poverty, above all the lack of livelihood opportunities for those who lack the assets required to take advantage of existing economic development trajectories. But poverty is not vulnerability. One interviewee stated that it was wrong to assume that poverty generates vulnerability, since in a high risk context it is instead vulnerability that generates poverty. The findings from the three municipalities studied confirm that this is indeed the case and that the failure to understand how vulnerability can generate poverty can be seen in the abandoned houses and impoverished resettlement zones. This is a challenge for recovery planning, but one that can only be addressed by addressing the capacity gaps that exist in vulnerability analysis.

Recommendations

The findings presented here describe a situation that is in many respects unique for Nicaragua. But the lessons of Hurricane Mitch have implications for a far greater range of contexts. There is no template for recovery, but there are several factors that need to be rethought. The following recommendations thus describe what factors should be considered, rather than what specifically should be done, on recovery and risk reduction after major disasters:

- It should be recognised that humanitarian response, regardless of the scale, is likely to have far less long-term impact than is popularly assumed and feared during the relief response phase. Therefore it is important to ensure that risk reduction and recovery are planned with greater attention to developmental trends than to the immediate concerns facing the aid community (usually driven by the media, by pipeline pressures and by the discourse within the humanitarian community). LRRD is important, but everything does not need to be linked.
- Early recovery is likely to differ in content and ownership from 'late recovery', and this is not necessarily a problem. Early recovery can contribute to recapitalising livelihoods and resettlement. Plans for later recovery should emerge from efforts to ensure that the dialogue within the development community reflects new understandings about risk and failed development models that were revealed by the disaster. It is important to allow this learning process to take its course. There is a need for principles to guide this process (such as the Stockholm Declaration) rather than reliance on grand designs and coordination schemes.

- Large aid investments, whether for recovery or for development, have profound and often unexpected impacts on local social and political processes. Only by monitoring these processes will the impact of such investments be revealed. The initial causal assumptions and theories of change in recovery planning are very likely to be flawed in any recovery effort, and therefore impact indicators should be treated in a critical manner.
- More efforts should be channelled through local institutions, but this will only be effective if it is combined with critical analyses of what is happening within these local institutions. Particular attention needs to be paid to how to both build on existing local networks and organisations while also recognising that these institutions are rarely inclusive. Special efforts are needed to address the needs of those who have been affected by the disaster but who lack the social capital to access outside support.
- Livelihoods are linked to location. It is important to take a realistic and flexible perspective in assessing where there are likely to be markets for the products and labour of people displaced in a disaster, and not assume that a few livelihood projects will succeed in turning inappropriately placed housing projects into viable communities.
- Whereas disasters can increase awareness of risk, the greatest challenges relate to translating this awareness into actionable interventions that reflect the ways in which vulnerability and poverty are interlinked. It may therefore be important to maintain interest in risk reduction by working with preparedness and hazard response, while also taking explicit measures to analyse the ways that poverty and vulnerability are related and insert elements of risk aware thinking in a range of poverty alleviation efforts.
- Climate change may be recognised as a 'risk multiplier', but there is little awareness of what that implies for practical action. This is largely due to the fact that most potential entry points in rural areas for managing the resulting risk are in agricultural efforts, whereas climate remains the preserve of environmental authorities. In order to overcome this impasse, efforts to address the increasing risks related to climate change should be anchored in collaboration with the public, private and civil society actors in the agricultural sector. This will involve aligning climate change adaptation efforts with the ways that these actors are simultaneously managing climate, market, food security and other risks.

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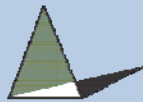
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The ProVention Consortium is a global coalition of international organisations, governments, academic institutions, the private sector and civil society organisations dedicated to reducing the risk and social, economic and environmental impacts of natural hazards on vulnerable populations in developing countries.