Partner Report Series No 9

Understanding Adaptation Planning: Selected Case Studies in Nepal, Philippines and Vietnam

Adaptation Knowledge Platform

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The *Partner Report* Series highlights the insights and outcomes of studies, assessments and other field activities that our national implementing partners have undertaken in their countries to mainstream adaptation into plans, policies and programmes. The intention of the series is to disseminate their findings to partners and relevant professionals in Asia.

We welcome suggestions or comments.

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Preface

During the last three years, the Regional Climate Change Adaptation Knowledge Platform (AKP) has worked towards building bridges between existing knowledge on adaptation to climate change and the governments, agencies and communities that need this knowledge to inform their adaptation to the impacts of climate change, while working for poverty reduction and environmental sustainability. AKP's work has been carried out following three key objectives:

1. Promoting dialogue and improving the exchange of knowledge, information and methods within and between countries on climate change adaptation, and linking existing and emerging networks and initiatives.
2. Generating new climate change adaptation knowledge, promoting understanding and providing guidance relevant to the development and implementation of national and regional climate change adaptation policy, plans and processes focused on reducing vulnerability and strengthening the resilience of the poor and women: the most vulnerable segments of society in most Asian countries.
3. Synthesizing existing and new climate change adaptation knowledge and facilitating its application in sustainable development and poverty reduction practices at the local, national and regional levels.

This publication is a result of these objectives. AKP supported thirteen countries in the Asian region to strengthen their capabilities to introduce effective adaptation measures. This includes undertaking activities at the national, sub-national and local levels to create enabling policy, regulatory, planning and budgeting environments. In each country, the platform facilitated adaptation action and strengthened adaptive capacity.

AKP is implemented by the Stockholm Environment Institute (SEI), AIT's Regional Resource Centre for Asia and the Pacific (AIT RRCAP), and the United Nations Environment Programme Regional Office for Asia and the Pacific (UNEP ROAP) with funding provided by the Swedish Government through the Royal Swedish Embassy in Bangkok and the Swedish International Development Agency (Sida). The former Swedish Environmental Secretariat for Asia (SENSA) was also instrumental in setting up and supporting AKP.

Nepal, the Philippines and Vietnam are three of the thirteen countries supported by AKP. This publication highlights the insights gained from the implementation of activities in these countries, and compares the results in a synthesis study.

A consolidated initiative, known as the *Asia Pacific Adaptation Network* (APAN), has been established and fully implemented starting 2013. Its ultimate objective is to assist the region to build the climate resilience of human systems, ecosystems and economies through the mobilization of knowledge and best practices, enhanced institutional capacity, informed decision making processes, and facilitated access to finance and technologies.

The outcomes of AKP have been made possible by the active participation of partners and various stakeholders. SEI acknowledges the editorial assistance provided by Marion Davis and Pin Pravalprukskul. SEI also expresses heartfelt thanks to John Soussan, Lailai Li, Kai Kim Chiang, Lisa Schipper, Sabita Thapa, Tatirose Vijitpan, Muanpong Juntopas, Nantiya Tangwisutijit, Chanthy Sam, and Dusita Krawanchid for their contribution to AKP.

Lessons for adaptation planners and practitioners from natural resource management and disaster risk reduction planning in Nepal, Philippines and Vietnam – a Summary

Lisa Schipper

Key messages

- Adaptation planning for climate change requires inputs from multiple levels of stakeholders and multiple layers of decision-making. New mechanisms may have to be developed within existing institutional arrangements to facilitate cross-level communication.
- One of the biggest challenges is to determine who 'owns' the adaptation planning process. While by default, it will often be the national government, this is likely to limit the influence of local and marginalized voices, which are crucial to the process. External actors such as international NGOs, meanwhile, can be helpful, but can also take power away from local actors and create dependency.
- Participatory processes need to include all voices to be effective. Power imbalances – based on socio-economic status, ethnicity and cultural traditions – marginalize some groups and limit their capacity to reduce their exposure and sensitivity to climate and disaster risk. To reduce vulnerability, these imbalances must be recognized and addressed, and marginalized groups must be empowered and engaged.
- Budgetary constraints matter. When funds are limited, smaller and less ambitious projects may be preferable to larger, more costly initiatives. However, in many places, transformational change is needed, and this will require large-scale funding.
- Planning is often done based on previous years, but with climate change, historical patterns will increasingly not be reliable predictors of future patterns. Science-based projections will need to be considered as well.

Generating new knowledge

The Regional Climate Change Adaptation Knowledge Platform for Asia (AKP) set out to enhance knowledge about adaptation in the region by combining international-level expertise with national-level policy analysis and local case studies. The project brought together different actors to both identify and fill knowledge gaps specific to planning adaptation at national and sub-national levels, and it provided opportunities for networking among research institutes within and across countries, and for collaboration between researchers, practitioners (NGOs) and government bodies.

The studies in the knowledge-generating component of the AKP focused mainly on the links between autonomous and planned adaptation – in other words, on understanding which gaps in adaptive capacity could be filled through planning, and how to fill them. The studies focused on both actual knowledge gaps as well as perceived knowledge gaps, because these are equally important in adaptation. The studies explored what conditions are enabling and disabling for strengthening the resilience of local communities and stimulating actions to adapt to existing and likely climate-induced change.

The studies were all carried out in a collaborative way that allowed for both network- and capacity-building. The aim was to build small teams that represented different types of actors, and interact with as wide a range of stakeholders as possible. The study *Understanding Planning* presented in this brief examined planning processes that relate to adaptation: coastal zone and community forestry management and disaster risk reduction. The projects identified crucial issues with respect to planning on multiple levels as a tremendous constraint to planning in general, and to adaptation planning in particular.

How well do we understand adaptation planning?

Many countries grapple with the question of how to adapt, because they are unsure of exactly what adaptation will imply. Does it mean building sea-walls as defence from sea-level rise and storm surges? Does it mean relocating entire communities living along riverbanks, in coastal zones or on hills or mountains? Does it mean restructuring national institutions, policies and regulations on disaster risk reduction? Each of these approaches has financial, social, environmental and political implications. Making the decision on which of these strategies to select is one major question; how to actually design and implement them becomes the second major challenge.

It would be easier to understand how to answer such questions if it were absolutely clear what adaptation actually is. For the last 15 years, scientists have been defining and redefining adaptation, but their work has been slow to infiltrate policy-relevant discussions, mainly because moving from theory to practice on adaptation has proved challenging. Despite theoretical definitions, with few practical examples to draw on, scientists, practitioners and decision-makers have come to a near standstill in understanding how to implement adaptation to a climate that is changing in uncertain ways.

It does not help that the original scientific and political thinking around adaptation assumed that any planned adaptation would be built on pre-existing, autonomous adaptive capacity. Measuring this natural adaptive capacity proved far more difficult than was hoped, so stakeholders have been unable to answer fully the questions, 'How much adaptation needs to be planned?' and 'How much can people adapt on their own?' Not only are those questions crucial for planning adaptation, but they also are critical to understanding how much financing is needed for planned adaptation.

Based on physical impacts research, we now know that people will not all be affected by climate change at the same rate, frequency or magnitude. Some parts of the world are more likely to be affected. Broadly speaking, this includes areas close to the equator, mountain environments, coastal zones and small islands. Based on social science research, we also know that people are not equally sensitive to the impacts of climate change. For instance, a wealthy factory owner living in a coastal zone is not as likely to experience adverse effects of climate change as a farmer living in the same area. Therefore, people are not equally *vulnerable* to climate change, and consequently, their adaptive capacity is not equal. This means applying blanket policies might help some people adapt but miss others. This adds a dimension of complexity to planning adaptation.

Planned adaptation is now seen as more explicitly focused on the development process and is often associated with national-level policy making. Specifically, planned adaptation is about reducing or avoiding the impacts of climate change, either as a reaction to what is being experienced, or in anticipation of what is expected to come. But planned adaptation cannot stand apart from other policies, plans, programmes and institutions that deal with climate-relevant issues such as agriculture, human security, or environmental protection.

If such initiatives are not aligned with climate change adaptation objectives, they risk increasing exposure and sensitivity to climate change. For example, prioritizing intensive agriculture with heavy reliance on irrigation may provide high returns in the short term, even in countries where water resources will be threatened by climate change. But in the medium to long term, as water resources become scarcer and unreliable, that will no longer be viable; investments will go to waste; and people will need new options but lack the skills or means to pursue them.

Because sectoral policies can influence both vulnerability and vulnerability reduction, it is important to see a country's entire development model from a larger perspective – identifying the aspects that are likely to make people more vulnerable and the aspects with the greatest potential to enhance resilience to climate change while not compromising on the development objectives of improved well-being, education, health and security. Many people are not well-adjusted to current climate variability, so the adaptation process must not only enable people to absorb shocks (become resilient) but also facilitate moving beyond existing states of underdevelopment. The most effective way to ensure that development objectives are met without increasing people's vulnerability or compromising on well-being is to integrate climate change policies – both for adaptation and for reducing greenhouse gas emissions –into core national development plans. At the same time, national development plans need to take climate change into account, to eliminate or minimize activities, strategies and policies that might expose people to greater climate hazards and increase emissions.

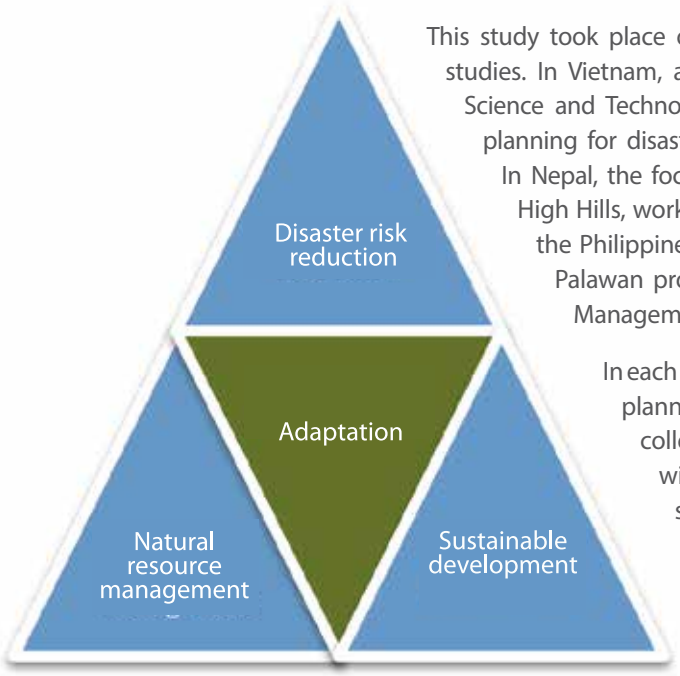
But focusing on planned adaptation at the national level is insufficient to ensure that people at the community level move towards adaptation. National-level approaches to formalizing adaptation policy frequently do not sufficiently integrate parallel local processes for addressing risk and development, and can be disabling for local adaptation processes. A community focus can help make the direct connection between addressing development needs and enhancing adaptive capacity. For this reason, the local level is considered an important entry point for adaptation. Nevertheless, these two cannot be undertaken separately, as they are inherently connected.

Learning through case studies

The study *Understanding Planning* was motivated by the desire to understand how the local and national levels of action and planning interact, examining case studies in natural resource management and disaster risk reduction as proxies for adaptation planning. The case studies in the Philippines, Nepal and Vietnam focused on understanding how local needs, capacities, interests and concerns are taken into account at different levels of decision-making, and how national-level policies and institutions play out at the sub-national level.

When adaptation to climate change is described as 'nothing new', it refers to the three basic underlying pillars that are necessary for adaptation: disaster risk reduction, natural resource management, and sustainable development (Figure 1). The *Understanding Planning* project was grounded in the premise that understanding what works well in planning processes for the components of adaptation will shed light on what exactly 'adaptation planning' is, and how it relates to other very similar policies and institutions.

Figure 1: Three pillars of adaptation to climate change



Approach

This study took place over a 12-month period in 2010-2011 and used three case studies. In Vietnam, a study done in partnership with the National Institute for Science and Technology Policy and Strategy Studies (NISTPASS) looked at local planning for disaster risk management in Binh Dinh and An Giang provinces. In Nepal, the focus was on local forest management in the Middle Hills and High Hills, working with WWF Nepal and the Nepal Foresters' Association. In the Philippines, the focus was on coastal zone management in Albay and Palawan provinces, in collaboration with Partnerships in Environmental Management for the Seas of East Asia (PEMSEA).

In each country, the studies looked at both successful and unsuccessful planning processes, as well as at ongoing processes. The data collection was done through document analysis, interviews with key informants, decision-making process analysis and a stakeholders and network analysis. Questions asked in the study touched on five themes: governance, participation, cross-level interaction, perceptions and lessons for adaptation planning. Table 1 outlines these in more detail.

Table 1: Key themes and question asked in the study

Themes	Questions	Sub-questions	Research methodology
Governance	At what level do the planning processes for natural resource management and/or disaster risk reduction take place? To what extent are national policies implemented and how do national institutions function at a sub-national level?	Who are the actors? What are the key institutions? What are the steps involved in decision-making? What are the power dynamics? Which are the different levels of decision-making?	Document analysis Key informant interviews Focus groups: decision-making matrix (emphasizes actors and interrelation among actors)
Participation	To what extent are communities involved in decision-making at the national level on resources/areas that affect them? To what extent are communities involved in decisions about how national and local policies are implemented at the community level?	Who are the actors? How do they relate to one another? Whose voices matter most, and whose voices matter least? Who makes the decisions about policy/plans? Who makes the decisions about implementing policy/plans?	Key informant interviews Focus groups: decision-making matrix (emphasizes power dynamics between actors) Focus groups: stakeholder network analysis (focuses on interactions and power relations)
Cross-level interaction	To what extent does national planning reflect sub-national priorities and needs? To what extent are sub-national actors involved in national planning? To what extent do national actors, institutions and plans influence sub-national plans and the implementation of those plans?	What is the nature and frequency of interactions between different levels? How receptive are different levels to information provided by the other; or to requests for information or for interactions? What are the mechanisms for communicating across levels (before and after planning)?	Key informant interviews Focus groups: decision-making matrix Focus groups: stakeholder network analysis (focuses on interactions and power relations)
Perceptions	How do different actors perceive knowledge and capacity gaps for planning? Why do some perceive knowledge gaps when others do not? How can knowledge and communication gaps be closed if there are different perceptions about them?	What are the perceptions about how the planning process works? What are the perceptions about whose voices count and whose voices don't count?	Key informant interviews
Lessons for adaptation planning	What can be learned from natural resource management and/or disaster risk reduction for adaptation planning? How country-specific are the lessons?		Based on analysis of other thematic outcomes.

Project findings

The case studies produced several findings that can be useful for the adaptation planning process, most notably in terms of the challenges of integrating local voices into national- or provincial-level planning. Key lessons include:

Multiple layers of stakeholders

Because climate change affects everyone, albeit differentially, there will be numerous actors with influence and interests that matter for adaptation planning. All of the case studies found multiple layers of actors in different roles, including outside organisations such as international NGOs or foreign donor agencies. The studies found that the biggest challenge with these multiple layers of actors is managing the interactions across levels (i.e. national, provincial, local). Although disaster risk and natural resource management are cross-cutting issues, institutional arrangements rarely facilitate cross-level communication, and sometimes they block it. Even as advanced information technology has improved communication between capitals and rural or remote areas, there is still a perception that national authorities' voices are more important.

In Vietnam, for example, although bottom-up approaches are increasingly being embraced in disaster risk planning, the traditional top-down approach is still considered the norm, while the bottom-up approach is considered weak. This bias needs to be addressed before voices will be heard equitably.

A major role for national-level actors is to be expected in countries with a strong centralized government, but this need not preclude the involvement of the local actors from the outset. In Vietnam, new institutions, such as the Community-Based Disaster Risk Management (CBDRM) project management unit, are facilitating this involvement.

Ownership of the planning process

One of the biggest challenges is to identify who should plan adaptation to climate change. The national level may not always be the most appropriate for planning, as local and marginalized voices have little influence. However, national (and to a lesser extent, provincial) governments also have more resources and political power, and they often plan adaptation on a large scale for entire sectors.

In the Philippines and Vietnam, national processes provide guidance for local planning processes. In both countries, however, the guidance gets passed down from level to level with minimal interaction or feedback. Province-level officials, for example, take the guidance from the national level and adjust it to fit their needs, and then pass it down, without necessarily attempting to discuss across levels to deal with potential conflicts. This suggests that the national government still owns the planning process, while the lowest levels have to take the 'table scraps' and try to implement them as best as they can. However, key actors' level of engagement, connections and influence can make an enormous difference. Thus, in Vietnam, supportive local officials were instrumental to the success of a CBDRM project in Binh Dinh province. In the Philippines, meanwhile, the private sector – particularly in extractive industries – wields considerable influence.

In Nepal, on the other hand, a long history of community forestry, of international renown, has given a much stronger voice to local people. There, community forestry is literally 'by the people, for the people', and is based on indigenous knowledge, participatory processes, social inclusion, collective decisions, equitable benefit-sharing, sustainable management and efficient use of forest resources. In other words, management of forests has been entrusted to the people who use them – one quarter of national forest area is managed in this way, involving nearly half of Nepal's population. Strict rules about the use and maintenance of forests have to be in place to ensure that this collective management approach does not result in a tragedy of the commons.

Institutional arrangements can facilitate cross-level interaction, such as Vietnam's Central Committee for Flood and Storm Control and Rescue (CCFSC) structure, which includes a national committee as well as provincial-, district- and commune-level units. However, even with this setup, interaction between stakeholders is typically limited. It is only during final consultation workshops to discuss the draft plan that provincial and sectoral actors are invited to provide inputs. At the implementation level, however, Vietnam's adoption of the 'four on the spot' principles to decentralize disaster response has recognized the important role of local authorities and communities in reducing disaster impact once an event has struck.

In the Philippines, the local communities are consulted in matters related to natural resource management that affect them. The village council will endorse projects through resolutions or ordinances, which then get taken to the municipality or city and later the province for approval.

Who *should* plan is the next question. The Nepal case study found that support from external actors (such as international NGOs) can take power, influence and capacity away from local actors and create dependency. In Vietnam, the Binh Dinh CBDRM project, which was led by the Norwegian Red Cross, led to a huge increase in capacity for disaster management, but there were questions about the project's sustainability and long-term effectiveness.

Money matters

In Vietnam, one consequence of the discrepancy between national/provincial authorities and local communities is a mismatch in fund demands and fund availability. Communities tend to request more funding than is available, not necessarily because they have unrealistic demands, but because national/provincial authorities have set up their budgets based on a different understanding of what the needs are. In Nepal, the success of community forestry depends on the transparent management of common funds to keep maintaining the forests.

Given that budgetary constraints exist in most places, it is essential to make smart spending choices. When funds are limited, smaller and less ambitious projects may be more viable than larger, more costly initiatives. However, in many places, nothing short of transformational change is required for adaptation, and this means large-scale funding will be needed. These considerations are critical in adaptation planning.

Shifting time horizons

Time is an important dimension of planning, and climate change may accelerate certain trends and make response measures more urgent. In planning for adaptation, it is also crucial to consider the time needed to adopt new institutions, change perceptions and shift attitudes, and implement changes.

Planners must recognize that the familiar cycles of climate variability may shift considerably over time, so events (or disasters) that used to happen every 10 years, for example, may now happen every 3 years. New patterns may also emerge, and unprecedented risks may arise. This means the common practice of planning based on historical patterns will need to change, and science-based projections will become more important. In An Giang Province in Vietnam, for example, planning for floods is based on flooding in the previous year. While this approach helps indicate where particularly sensitive or exposed people or infrastructure may be, it may not prepare communities for the possibility that much-larger floods could occur.

Concluding remarks

This project provided valuable insights for adaptation planning, but many questions remain about how to effectively plan for an uncertain future. Conditions also differ significantly from country to country, region to region, even village to village. It is clear that there is no single formula for success; what our studies have done is highlight key issues to consider, key challenges to overcome, and some positive examples from which to learn.

One important take-away from the case studies is that successful projects have benefitted from strong partner participation. In Binh Dinh, for example, the Red Cross and the Province People's Committee played an important role, and paved the way for engagement and support from other local government bodies. The study team cited the openness of the local authorities as a crucial factor. Yet this is also why it may not be easy to replicate successful projects elsewhere: all the ingredients matter, especially the people involved.

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Case Study 1 NEPAL
Natural Resource Management
Nepal Foresters' Association and WWF Nepal

Introduction

Climate change has had an increasingly high profile in the development discourse because of its potential to change the landscape of people's lives. Responses to climate change fall into two broad categories: *mitigation,* which involves reducing greenhouse gas emissions to try to prevent the most dangerous impacts, and *adaptation,* which aims to minimize the negative effects of changes that cannot be avoided. Both require action at all levels, from the international arena to individual communities, but because impacts and circumstances vary significantly from place to place, grassroots-level engagement, planning and implementation are particularly crucial for successful adaptation. It is also important to begin planning before the most serious impacts are felt.

Both mitigation and adaptation efforts are under way in Nepal, though they are only just beginning. Yet already, it is clear that climate change should not be addressed in isolation, but rather be integrated into Nepal's broader policy debates and development planning. This insight comes from the recognition that climate change – and responses to it – will have impacts across the economy and across society. Rather than create parallel institutions to implement climate policies, Nepal will be better served by integrating its climate response into the work of existing institutions, which are also best positioned to support the most vulnerable communities.

That is the context of this study, which evaluates Nepal's community forestry (CF) institutions and natural resource management planning processes to determine whether they can effectively support climate change adaptation, and how they might need to be adjusted to fulfil that purpose.

The study starts by trying to understand what factors contribute to successful natural resource management in Nepal, and what roles different stakeholders play. The goal is to draw lessons from the existing system that can be applied to adaptation mainstreaming.

Community forestry in Nepal

Community forestry (CF) has emerged as a key strategy for protecting and even rebuilding forests while strengthening the livelihoods of the people who depend on them. The Food and Agriculture Organization of the United Nations (FAO) first defined the term, in 1978, as "any situation which intimately involves local people in a forestry activity". The FAO also noted that community forestry could occur at multiple levels, from individual households to entire communities, and could involve a wide range of activities.[1]

In Nepal, community forestry has surged in the last two decades. While in 1991, there were just a few hundred user groups (Iversen et al. 2006), by 2012, there were 17,808 community forest user groups with 2.2 million households as members – around 46% of Nepal's population.[2] Collectively, they manage 1.65 million hectares of forest – well over a quarter of the country's total forest area. For many years, CF in Nepal has been hailed as a "success story" (see, for example, UNEP 2010), and along with domestic investments, CF has received major foreign-aid support (primarily from the U.K., Switzerland, the U.S., Australia and Germany).

The CF practice in Nepal is built on indigenous knowledge, social inclusion, collective decisions, equitable benefit-sharing and sustainable management and efficient use of forest resources. It uses a bottom-up planning approach which helps empower local communities, and it formally places forest resource management in community members' hands, per the provisions of the Forest Act of 1993 and forest regulations issued in 1995. The District Forest Office (DFO) staff – mainly the ranger and forest guards – help a local committee to demarcate the forest area, estimate the existing growing stocks, and recommend the annual allowable harvestable quantity following the forest inventory methodology adopted by national CF inventory guidelines. This inventory is crucial for sustainable harvesting, ensuring that the removal of forest products stays within the limits of that year's growth. The role of government officials is to set CF policies, then provide technical support and guidance to local communities so they can effectively implement those policies.

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[1] For a history and more detailed explanation of the concept, see http://www.fao.org/docrep/u5610e/u5610e04.htm.

[2] CFUG MIS database made available on 16th September 2012 from Community Forestry Division of Department of Forests of Nepal http://dof.gov.np/division/community-forest-division/community-forestry.

The local institutions that manage the forests are called Community Forest User Groups (CFUGs). Only CFUG members have access to the forest resources under their care; to qualify for membership, they must be traditional forest users, be willing to take on the responsibility of managing the forests, and be committed to protecting the forests. Once users of forests are identified based on forest product needs, management capacity and traditional use rights, a user group is formed to develop a set of rules (a "constitution") on forest use rights, responsibilities and management practices. Upon approval of this constitution from the District Forest Office, the user groups call a general assembly to prepare and endorse the operational plan with the technical guidance of forestry professionals. After approval of the plan from the District Forest Office, the users have full legitimacy to implement forest management and produce harvesting activities in their community forests as per provision of the approved operational plan.

The constitution and operational plan serve as the regulatory instrument for the CFUGs as well as for the local forest offices. CFUGs are asked to elect an executive body to handle day-to-day activities. The CFUG assembly is the apex body of user groups and makes all decisions about forest management, utilization, and the rights and obligations of its members. Normally, the executive committee of a CFUG implements the decisions made by the CFUG assembly on different aspects of CF management. An office bearer of the CFUG committee (usually the secretary) records minutes of meetings and all members are informed about major decisions. Any users who violate the rules are subject to punishment. In the case of unauthorized harvesting, a government official confiscates the offender's fuel wood, axes, sickles, doko (basket), *namlos* (headbands) and other tools and equipment.

CFUG members pay a fee to be part of the group and are also expected to make other contributions, such as sharing the cost of a forest watcher, attending monthly meetings, and participating in CFUG activities. There are also CFUG assemblies, usually as when needed but at least once a year, during which quotas are set to meet the households' basic requirements for firewood, timber and other products, following local norms and practices. Forest product harvesting is often associated with silvicultural activities to improve forest management. CFUG members provide volunteer labour for forest management activities such as thinning, fire line construction and removal of less valuable plant species. There is often a cleaning each year, in the winter, when CFUG members remove less valuable species (both green and dead), and distribute them to forest users for household consumption. CFUGs voluntarily restore degraded forests by planting trees in open spaces.

In these communities, forest products are typically the main source of energy, and livestock is the main source of income as well as food security. Many CFUGs allow households to collect dead branches, fallen twigs and ground forage throughout the year for domestic use. However, individual households cannot cut standing trees or gather timber from the forest without approval from the executive committee. Collection of forest products by individual user households for individual benefits is prohibited in all community forests of Nepal. Livestock grazing is regulated either by rotational grazing or full restriction in all community forests. In a field survey conducted for this study, some households reported that restraints imposed by CFUGs hurt their livelihoods, especially for the poor, who have no alternatives. Some studies have documented hardships faced by low-income groups such as firewood sellers, blacksmiths, local wine makers and others who need a large quantity of firewood to run their businesses (Adhikari et al. 2004; Dev and Adhikari 2007).

Livestock fodder collection in the CF structure usually occurs at the end of the dry season, mainly from spring to just before summer; grass (*ghas*), however, can be collected throughout the year. Subsistence farmers in the Terai and Middle Hills regions also collect leaf litter from the forest for animal bedding and mulching. Some CFUGs make special provisions for particular groups, such as charcoal for blacksmiths, if they are members of the CFUG.

The CFUG executive committee, usually dominated by local elites, manages the community funds and handles accounting and audits, while other CFUG members are mostly not aware of or involved in financial decisions. The income generated from forest activities goes directly to the community fund and can be invested into forest management and social development activities such as cleaning, thinning operations, infrastructure development such as school construction, irrigation canals, drinking water supply, etc. Though social development activities are good for village-level economic development, the internalization of benefits generated from such investments is again a function of household private endowments. At the moment, there is no mechanism by which cash generated from CF can be directly distributed among CFUG members, and the income thus forgone is seldom calculated.

Current status of community forests

There are many other community-based management models, such as leasehold forests, buffer zone conservation and watershed conservation. However, forest policy and legislation in Nepal has given highest priority to CF, as have international donors and NGOs (Thoms 2008; Iversen et al. 2006). Out of a total area of 5.5 million hectares, 2 million hectares are categorized as potential CFs and the remaining 3.5 million hectares are categorized as leasehold forests and government managed forests. Almost one-quarter of all forest area has been handed over to communities as CF (Table 2). Up until 16 September 2012, 17,808 forest patches had been handed over to communities. Approximately 2.2 million households, which constitute about 46% of the total population, are involved in community forest management (CFUG MIS database, DoF 2012).

Table 2: Status of CF in Nepal as of 2011

Areas	Area (Ha)*	% of total forest area**	Number of CFUGs*	% of total CFUGs	HHs involved*	% of total population***
CF in Nepal	1,664,918	29	17,808	-	2,194,350	46
High Mountain	269,526	15	2,852	16	292,400	85
Middle Hills	1,095,054	60	12,902	72	1,418,046	64
Terai	300,338	15	2,054	12	483,902	21

*Source: *DoF (2012); **Modified from MPFS (1988a); ***Adjusted from CBS Preliminary report (2011)*

Evaluating the effectiveness of CF institutions in Nepal

This study examines how CFUGs engage in planning, with the goal of understanding whether these institutions could help build resilience to climate change.

Community forest user groups are very diverse, reflecting the diversity of the biophysical and socioeconomic environments in which they operate, and so they handle CF management differently, with varying results. This study focuses on key aspects of CF governance, including the level of participation by different groups, interaction across stakeholder groups, and people's perceptions. It deliberately examines both successful and unsuccessful CFUGs.

Consistent with literature on community-based natural resource management, specifically Noble (2000) and Thompson et al. (2005), here a CFUG is deemed to be successful at planning if it meets the following criteria:

- Decisions are made on a consensus basis;
- Marginalized people are involved in the CFUG's decision-making bodies;
- Different classes, interest groups (including poor and seasonal users) and women are well represented;
- All users know and understand decisions made (there is transparency) and generally comply with them;
- The forest operational plan is revised regularly;
- The CFUG carries out development projects that benefit the wider community;
- Conflicts are resolved within the CFUG, with no need for external mediation;
- Forest conditions have improved; and
- There are few or no conflicts on benefit-sharing, decision-making and fund distribution.

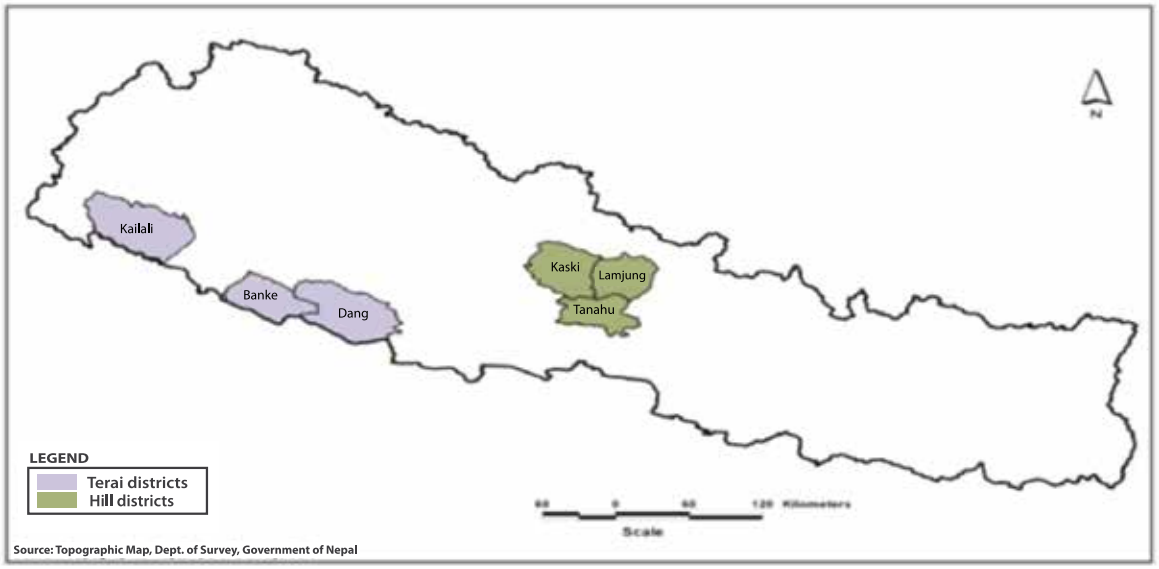
A preliminary selection of relatively successful and unsuccessful CFUGs was made based on discussions with concerned District Forest Officers and local CF stakeholders. Along with the criteria listed above, prizes awarded by District Forest Offices based on performance evaluations were also taken into consideration.

Study sites

Nepal has three major geographic regions: the Terai or southern lowlands, the Middle Hills, and the High Mountains. Each has different vegetation types and socioeconomic conditions, and community forestry is not equally prevalent in all; as shown in Table 2 above, more than half the land and the vast majority of CFUGs are concentrated in the Middle Hills, while the Terai, which has about one-quarter of the CF land, including Nepal's most valuable forests (Iversen et al. 2006), has less than one-third as many CFUGs. However, despite these inherent differences, the government of Nepal has implemented the CF programme uniformly across the country. Thus the regulations, overarching policies and government roles are the same even though the forest resources and demand and use patterns are completely different.

Consistent with the research objectives and assumptions, the three districts selected from the lowlands have populations that migrated from the Middle Hills and High Mountains and are highly dependent on forests for their daily livelihoods; local forests have high market values and strong biodiversity potential, but pressure from local communities on forest resources is relatively high. In the Middle Hills, three districts were selected that have comparatively lower population density; local residents have mostly lived in the region for a long time, and they are very dependent on forests for their basic livelihoods. While the CFUGs in both regions have success stories and failures, the Middle Hills districts are generally viewed as more successful, whereas the lowlands districts have mixed experiences with both CF and government management of forests.

Figure 2: Study sites



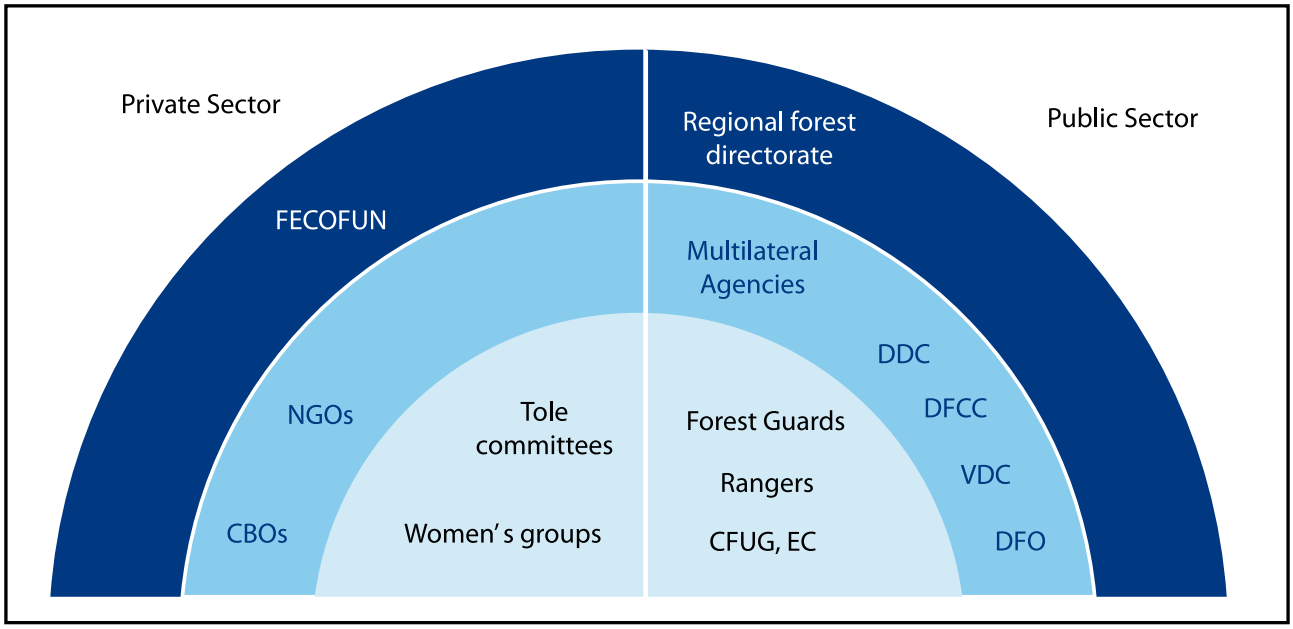
Information for this study was gathered through key-informant interviews, focus group discussions and open-ended interviews. Government officials at three levels – field, district and central – were interviewed in order to understand the CF planning process at both the individual CFUG and district levels; the former is largely based on forest resource availability and demand, local knowledge and experience, while the latter is based on government rules and planning processes. In addition to field research, the study team reviewed government reports, peer-reviewed journal articles, project reports and other documents.

Results and discussion

Governance

Community forest management planning involves both private and public-sector actors. Figure 3, below, shows the key players on both sides at different levels; the largest-scale private-sector group is the Federation of Community Forestry Users Nepal (FECOFUN). Multilateral agencies are only involved in areas where they are providing support for forest management activities; in one study site, for example, the Western Terai Landscape Complex Project (WTLCP) was involved in planning of CFs in wildlife corridor and bottleneck areas.

Figure 3: Actors involved in Nepal's community forestry planning process

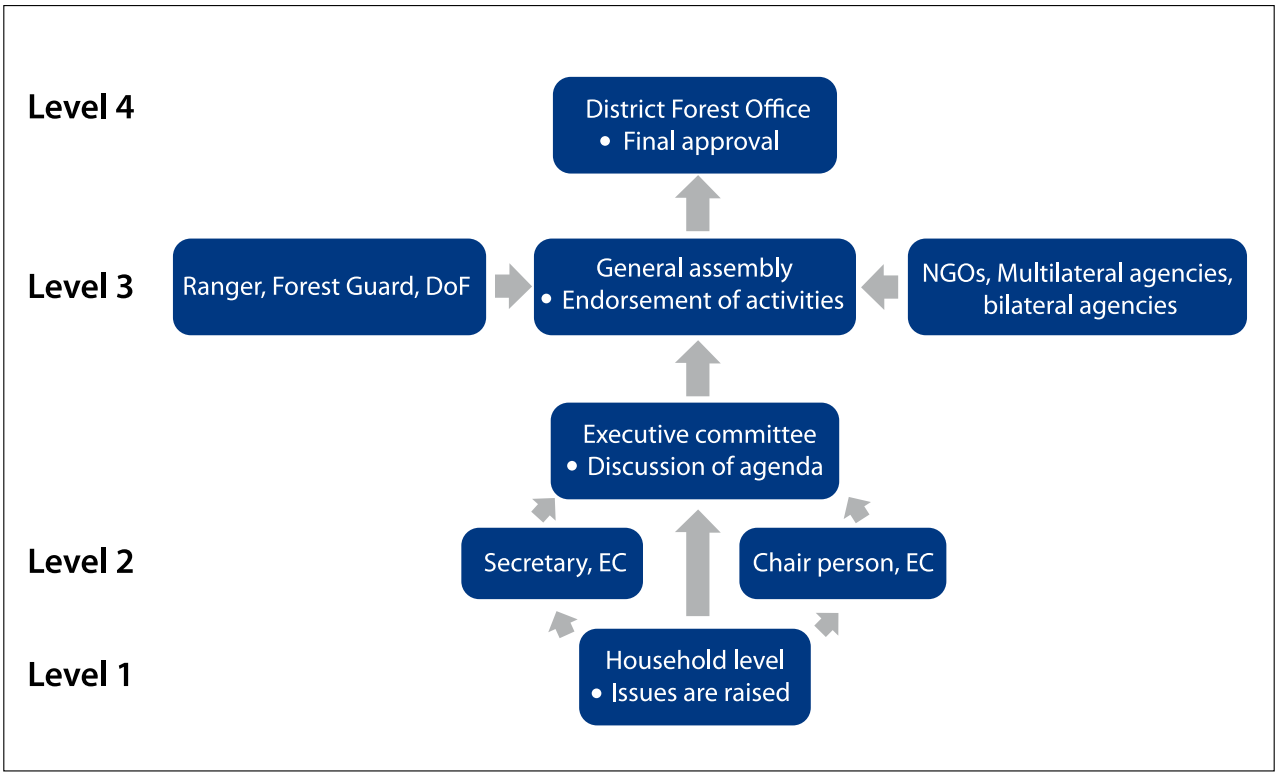


Planning is generally governed by formal institutions and legal structures, such as the Forest Act of 1993, Forest Regulation of 1995, and CF guidelines, though in some places informal institutions guide the process. Formal institutions explicitly provide for the involvement of multiple stakeholders, particularly women, the poor and marginalized groups.

At the sub-national level, decision-making about plans for development activities generally takes place in four levels, as shown in Figure 4. Households first raise issues informally with their executive committee members, who then bring the issues to the full committee. Even though CF policy clearly says the CFUG (as a whole) is responsible for forest management, in practice much of the authority remains with the executive committee. As noted earlier, several studies have found that executive committees are often dominated by elites and exclude marginalized and poor people, and their decisions reflect the committee members' interests (Adhikari et al. 2004).

The next step is to bring the agenda approved by the executive committee to CFUG general assembly for discussion. External actors such as government agencies, NGOs, and bilateral and multilateral agencies often serve as facilitators (Banjade and Ojha 2005). In theory, all CFUG members can raise concerns or express their views, but as Thoms (2008) notes, "the poor and marginalized are generally not accustomed to expressing opinions in formal forums or are intimidated or otherwise unaccustomed to being asked to make decisions. The silence of the marginalized is often filled by the more confident voices of well-positioned users, who are then able to shape forest management institutions to their own benefit". Finally, after the CFUG general assembly makes its decisions, the proposed activities are submitted to the District Forest Office for approval.

Figure 4: Sub-national planning process in CF management



The exclusion of marginalized and poor people from decision-making in the CF context has great implications for climate change adaptation, because these are the populations that are most vulnerable to climate change. Unlike their wealthier counterparts, they are likely to depend entirely on natural resources for their livelihoods, with no viable alternatives, and they have less capacity to adjust to adverse impacts (Jones and Thornton 2003; Smit and Pilifosova 2001).

The limited range of participants in the CFUG planning process also limits its usefulness for adaptation planning. Adaptation can require a wide range of activities to increase resilience and reduce vulnerability, including not just forest management but also sustainable water management, disaster risk reduction, and establishment of diverse agricultural systems (Füssel 2007). Therefore, effective adaptation planning requires involvement of multiple sectors, which can also provide additional opportunities for knowledge, information, ideas and culture sharing (Banjade and Ojha 2005). In this context, other relevant government agencies might include the District Soil Conservation Office, the District Agriculture Office, the District Irrigation Office, Village Development Committees, and the District Livestock Office. Nepal's National Adaptation Plan of Action (NAPA), which is already in place, could help ensure effective inter-departmental coordination.

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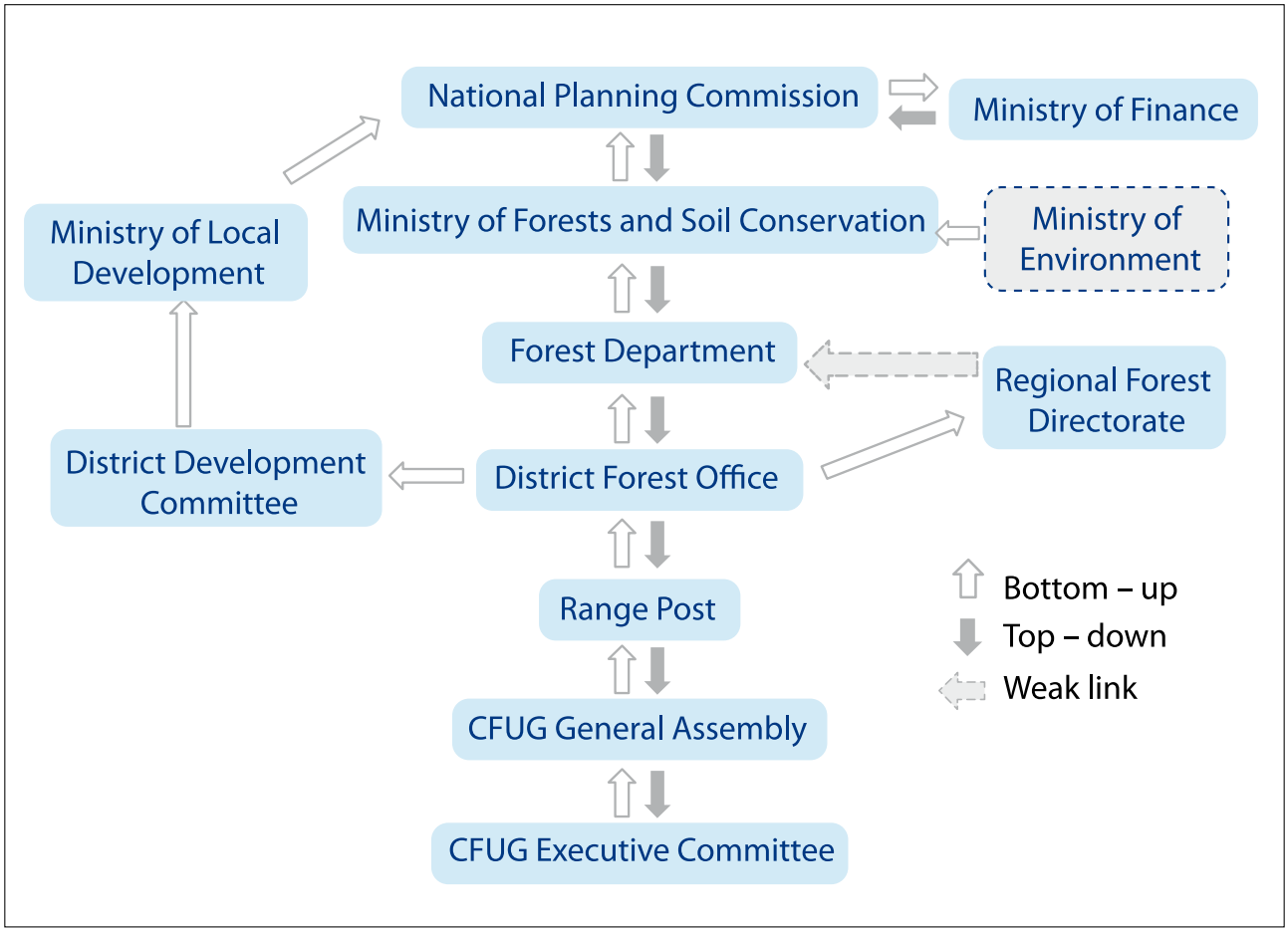
National-level planning: Bottom-up and top-down

Just as ideas can emerge from individual households at the local level, in national-level planning, proposals can arise from discussions within CFUGs and at the District Forest Office. The Regional Forest Directorate facilitates the regional planning process; at this level only the planning agencies under the Ministry of Forests and Soil Conservation (MFSC) are involved. The issues and programmes presented at the regional level are then forwarded to the Ministry, which compiles the plans and forwards them to the National Planning Commission (NPC). At the NPC, there is a series of discussions between members of the NPC, the MFSC and other planning agencies, and the NPC evaluates the relevance and expected outcomes of programmes. The NPC then sends proposals to the Ministry of Finance; those that receive final approval are then sent back to the MFSC for implementation. From the MFSC, annual budgets are forwarded to district line agencies.

Figure 5: Policy planning process leading to national level



Parallel to the planning at the regional level, the District Development Committees (DDCs) also carry out planning activities with various stakeholders, including both governmental and non-governmental agencies. Proposals are then forwarded to the National Planning Commission and finally to the Ministry of Finance.

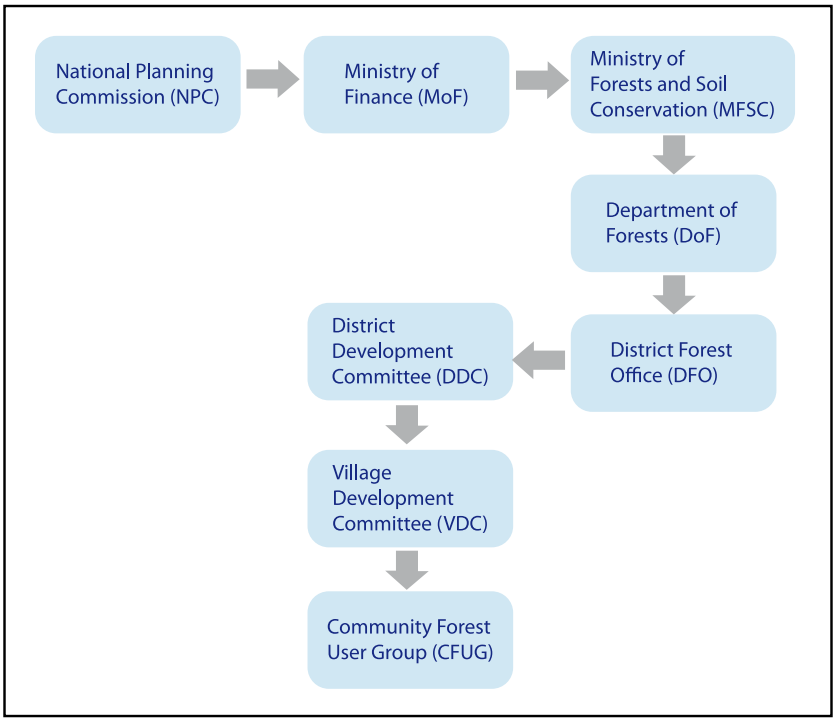
The dark arrows in Figure 5 show the top-down planning process, which is the institutional arrangement for financial resources delivery and public service delivery related to CF management. Once the plans are approved by the Ministry of Finance, they are implemented through the MFSC, DoF and District Forest Office. Several people interviewed for this study said this process takes a long time, so the CFUGs' plans are often delayed.

In the context of this study, the key question is whether this approach to natural resource management planning fits the needs of adaptation planning. The top-down process mostly involves the concerned ministry and its sub-elements. Only in a few instances are other agencies involved; however, the planning commission, which coordinates planning of entire ministries, accepts the planning process that goes through the MFSC. This limits stakeholder inputs, especially on matters not directly related to that specific ministry's concerns. And even though CFUGs have a voice at the outset, few of the issues they raise are actually translated into policy and activities. Government officials argue that CFUGs have multiple problems, and with limited resources of government, it is not possible to address all of them. However, such an approach will not work for adaptation planning, which requires much stronger linkages between the needs identified at the local level and the policies and measures adopted at the national level.

While greater bottom-up and top-down integration is arguably helpful in all policy-making, it is particularly important with adaptation because communities' needs can vary significantly. Thus a key step in effective adaptation planning is to assess vulnerability at the local level, looking at factors such as socio-economic conditions, livelihoods, exposure to hazards, and access to resources. At the same time, adaptation planning requires high-quality climate data: temperature and precipitation trends, existing and expected disaster risks, and areas that are likely to be hardest-hit – all of which is likely to come from national-level and even international experts. Combining the two and finding locally appropriate solutions requires a good flow of information from the community level to the top, and vice-versa.

Given that District Development Committees – and under them, Village Development Committees (VDCs) – have a broader agenda than District Forest Offices, they may be better positioned to manage resources to meet communities' needs. Figure 6, below, shows a potential alternate approach to delivering top-down financial support, channelling funds through the DDCs and VDCs.

Figure 6: An alternative approach to delivering resources from the national to the local level

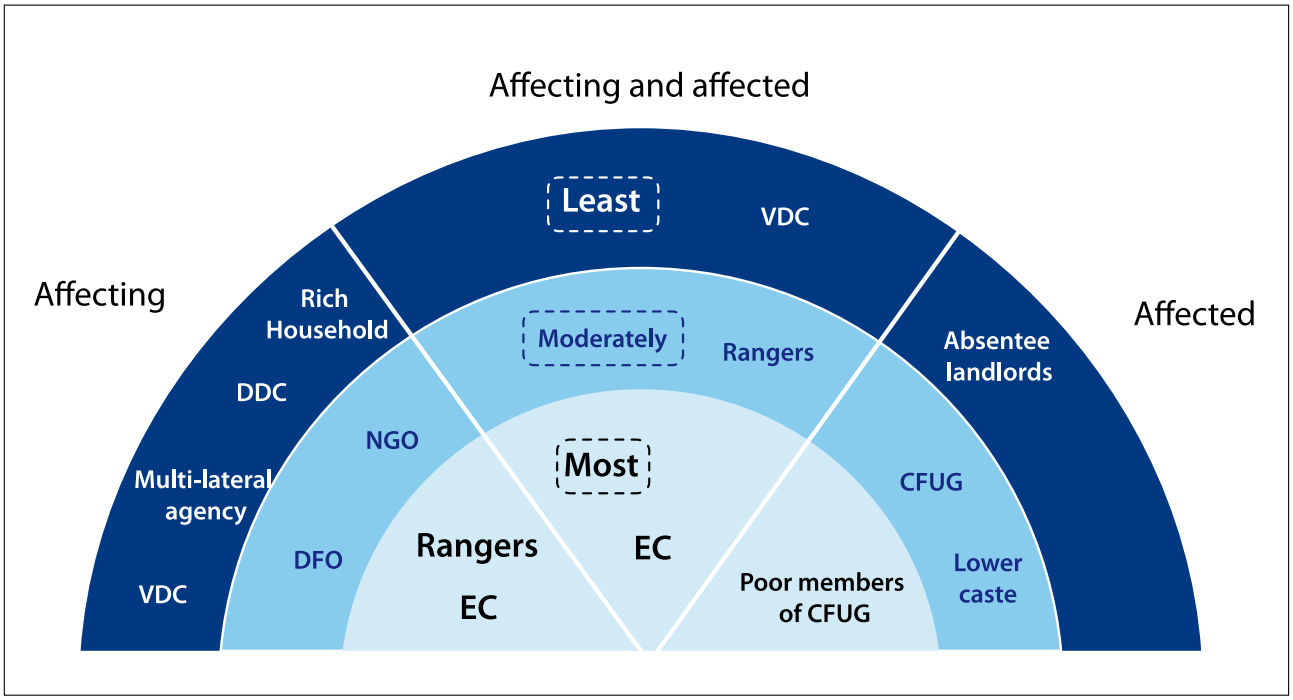


Participation

Community engagement has long been part of development planning, but it has recently become mandatory in Nepal. Views vary, however, on whom to involve and what to achieve from participatory processes. In community forestry, multiple stakeholders participate in decision-making. This study identified three categories of stakeholders: (1) those who make decisions, (2) those who are affected by decisions, and (3) those who make and are affected by decisions.

Figure 7 classifies stakeholders in community forestry management according to how much they can affect or be affected by decision-making. At the community level, the CFUG executive committee and District Forest Office staff have the greatest influence on decisions. Agencies such as VDCs, DDCs and multilateral agencies have the least effect. On the other hand, the stakeholders who are most affected by decisions include different economic classes of people. The effect may be negative or positive depending on the type of activities carried out by a CFUG. Development activities such as temple construction mainly benefit the higher caste group. Activities such as irrigation channel construction mostly provide benefits to the wealthy members, because they have larger land holdings that benefit more from irrigation, while poor people often have little or no irrigable land (Dev & Adhikari 2007). On the other hand, activities such as school support may render benefits to both rich and poor people of a CFUG.

Figure 7: Stakeholders involved in community forestry management



Planning of development activities are generally carried out by executive committee members and DFO staff. In many situations, certain group members have more production factors and can exploit resources more than medium or poor households (Dev et al. 2003; Malla 2001). In addition, members who have greater knowledge and capital endowments, and who are from higher castes, generally control the executive committee (Timsina 2003). These disparities generate power inequalities among the forest users, also manifested in decision-making. However, in many instances, poor and marginalized households are still well served , because good rules have been set up (Adhikari & Lovett 2006; Timsina 2003). External interventions can also reduce disparities in decision-making power. For example, government officials and other facilitators can be trained to engage with marginalized members as well as more elite members in order to ensure that the interests of all group members are considered (Nightingale, nd). Recently, the government has also addressed the issue through public policy: the community forestry operation guidelines require that at least 33% of the executive committee come from marginalized groups.

Communities are not directly involved in regional-level planning, but rather are limited to the district level. Yet regional-level planning is where most of the policy and planning discussions occur. Generally, CFUGs request a large number of activities, but only a few make it to the regional-level planning process.

To optimize the welfare of community members and manage forests sustainably, it is essential to evaluate the relationships among stakeholders (Reed et al. 2009). Stakeholders were initially identified through the focus group discussion and were then asked which individuals and groups had interest in and influence over decision-making. Figure 8 shows the results, following a matrix from Reed et al. (2009). It is likely that stakeholders with legal rights and significant personal capital endowments are most influential (Nightingale, nd).

Figure 8: Interest–influence matrix for planning process

High interest and high influence (A)	High interest and low influence (B)
CFUG Elite members of CFUG CFUG advisor Executive committee chairman DFO staff	Non-governmental organizations (NGOs) District soil conservation office Women's groups International NGOs Community forestry coordination committee Multilateral agencies (WTLCP, TAL) FECOFUN Marginalized members
Low interest and high influence (C)	**Low interest and low influence (D)**
Teachers Retired executive members Local political leaders	VDC/DDC Community-based organization (e.g., clubs)

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Stakeholders who are identified as having high interest but low influence are crucial to improving the performance of community forestry and development activities, but they are not necessarily the decision-makers. Special initiatives will be needed to ensure their interests are taken into account. Women, for example, are highly interested in CF management, but their voices are not always heard. The same holds true for marginalized people such as *dalit* ("untouchables") and indigenous people. Capacity development of the stakeholders could be one option to bridge gaps in their ability to participate equally in community activities.

Members such as teachers and retired executive members, meanwhile, are highly influential but show little interest in community activities. They could play an important role because they possess knowledge and skills related to CF management and development activities. This and other studies have revealed that the village development committee and community-based organizations have little influence on or interest in CF management. With the VDC, this may be due to the lack of elected members.

It is said that CF decision-making is bottom-up, but the stakeholders in Figure 8 above generally make decisions and impose them on others. Although the local stakeholders expect to be heard by government agencies before policies on CF are set, the consultation process – holding community meetings, etc. – seems to only serve to meet a requirement, rather than to seek opinions or allow for influence. Even if the government does consider this input, only a few issues may be discussed adequately.

Cross-level interaction

CF governance occurs at two main levels: national, and sub-national (which in turn involves both community- and district-level governance). Both bottom–up and top-down approaches have been recognized and adopted for decision-making and planning processes. Interaction between the national and sub-national levels is mandatory and generally occurs once a year, with limited engagement of stakeholders. In addition, the DFOs, representing sub-national level stakeholders, interact with national-level governance as often as needed. It is generally observed that only a limited number of CF management issues raised at sub-national levels are reflected in national-level planning and policy processes. However, national-level governance is more receptive towards issues related to soft support, mostly involving small investments in capacity-building and knowledge-based activities (R. Dangi, personal communication, October 17, 2011).

One example of scaling up is the introduction of the leasehold forestry programme concept within community forestry. The concept was introduced to address livelihood issues among the poor (M. Dhakal, personal communication, October 17, 2011). Development interventions or policies involving higher-cost investments, such as for irrigation and transportation facilities, are less likely to be addressed. This reflects the limited resources available.

National actors have greater influence on sub-national plans and implementation than the other way around. CFUGs are relatively more receptive towards policies or activities promoted by the national government, provided that the programme addresses communities' desires (Lane & McDonald 2005). CFUGs appear more receptive when livelihood issues are addressed in a manner appropriate to the local socio-economic conditions. Acceptance also depends on how policies and programmes are designed. Those that are designed with engagement of the broader community are more likely to be accepted (Oosterveer & Van Vliet 2010). Elsewhere, it has been found that policies enabling substantial economic benefits are more accepted by the people (Ezebilo 2011; Maikhuri et al. 2001; Mehta & Kellert 1998).

The mechanisms by which messages are communicated across governance levels receive a great deal of attention in planning and policy design. Communication can create a social learning environment for actors across the different levels (Leeuwis, 2000). The CFUG planning process generally employs multiple means of communication, including workshops, informal discussions, and seminars. The communication is two-way, and this approach has helped to sort out conflicts and smooth the planning process (Kanel, 2004). Moreover, two-way communication allows for timely revision of policies if needed.

Perception

Policy-makers generally accept that the current planning and decision-making processes have some pitfalls. For example, in an interview, DFO staff said that financial resources are not adequate to address community members' demands. The communities are focusing their activities more on development work such as building schools, roads and irrigation systems, leaving forest management needs unmet. CFUG members do not realize that national government resources are limited, and tend to present a large number of activities for approval. DFO staff also argue that they lack the resources to support CFUGs in their planning and decision-making processes. They also say the district-level planning process does not consider the issues that arise in community-level planning. The planning which takes place through DDC hardly covers forestry activities. There is a lack of coordination between DFO planning and DDC planning, and planning through the DDC is costly, because of multiple tiers in the DDC planning process. On top of that, there is a mismatch between the timing of DDC planning and MFSC planning.

CFUG members say their participation in the planning process is not adequate. Key informant interviews show that only community elites participate. The government staff generally liaise with elite members, and rarely hold discussions with other parts of the community to identify their needs and wishes. Many other studies related to community forest management in Nepal have also noted this (Banjade & Ojha 2005b; Thoms 2007). CFUG members interviewed for this study want wider involvement of stakeholders in planning and suggest there should be regular monitoring of the activities implemented so far. There is no simple way to increase involvement of marginalized members in planning and decision-making processes, due to social and cultural factors. However, changes in policy, such as mandatory involvement and the education of community members, could enhance participation in decision-making, CFUG members say (Adhikari & Lovett, 2006).

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Factors affecting the CFUG planning process

Planning and decision-making in CFUGs is affected by various factors, including the socio-economic make-up of the CFUG as well as external factors. There are significant differences in the amount of funds in different CFUGs' accounts, and relatively better planning was observed in CFUGs with more funds. Having more funds may encourage users to get involved in the planning process, because they can expect higher individual benefits (Maskey et al. 2006).

According to CF development guidelines, women must be included in the executive committee, but their level of representation varies among CFUGs. Our analysis found that CFUGs with a higher proportion of women in their executive committee were performing better in the planning process.

Likewise, the CFUGs which had frequent interactions with the District Forest Office had better planning practices. Interactions mostly take place regarding development, fund allocation and benefit distribution issues. These interactions and feedback from the DFO help make the planning process more effective.

The proximity of a CFUG to a service provider, such as a Range Post (RP), also affects the planning process. It was found that CFUGs which were close to the RP had better planning; this is likely because they can get access to the government office more easily. This makes closer CFUGs better informed in terms of forest management practices, forest-related rules and regulations (Agrawal & Gupta 2005). CFUGs have to get approval from the DFO before implementing activities such as harvesting and distributing forest products, as well as development activities. Easy access to the DFO may reduce the costs of acquiring these approvals.

The role of external agencies in CF management is contentious. Authors such as Agrawal (2001) argue that external actors' involvement in community-based management increases the CFUG's dependency. Yet many CFUGs receive help from agencies other than the DFO in implementing CF management activities, and this study found that the CFUGs that have obtained help from external agencies perform better in CF activity planning. The external agencies facilitate implementation of plans developed by local communities which meet their priorities.

The education level of executive members also affects the planning process. Our analysis found that CFUGs in which more executive committee members are moderately educated (have completed their schooling) perform better than CFUGs that have a lower share of educated executive members. Highly educated executive committee members, meanwhile, are likely to be engaged in business other than CF management, so they invest less time and effort in CF activities (Dhakal & Bhatta 2009). Moderately educated executive committee members were generally engaged in public services such as teaching, civil service, etc. prior to joining the executive committee. They have extensive experience working in the community, and they may have already built a good rapport with other community members. This suggests that successful planning is the result of knowledge, effort, and time monitoring the activities, rather than higher formal education (Alvarez & Crespi 2003).

A context for climate change adaptation planning

Institutional arrangements and planning processes are essential for effectively integrating climate change adaptation into all areas of public policy-making. Regmi and Subedi (2010) have identified the following principles for the effective streamlining of climate change adaptation into sectoral planning processes:

- Planning must be community-led, owned and driven, inspired by poor, vulnerable and marginalized people, women, and different ethnic groups;
- The community should participate in assessing impacts, identifying adaptation needs, and implementation; and
- Plans and projects should draw on local resources, knowledge, capacity and innovation.

In addition, the following concerns must also be considered:

- National and sub-national stakeholders must consider integrating the perspectives of community at all levels;
- Planning requires inputs into policy-making from a wide range of stakeholders to integrate expertise into development policy and planning;
- Good adaptation planning requires a range of inputs and approaches from the knowledge of vulnerable communities; and
- A vertical link must be established between the national-scale, top-down assessment of current climate and future risks and bottom-up input from communities on factors that make people vulnerable, access to resources, political access and livelihoods.

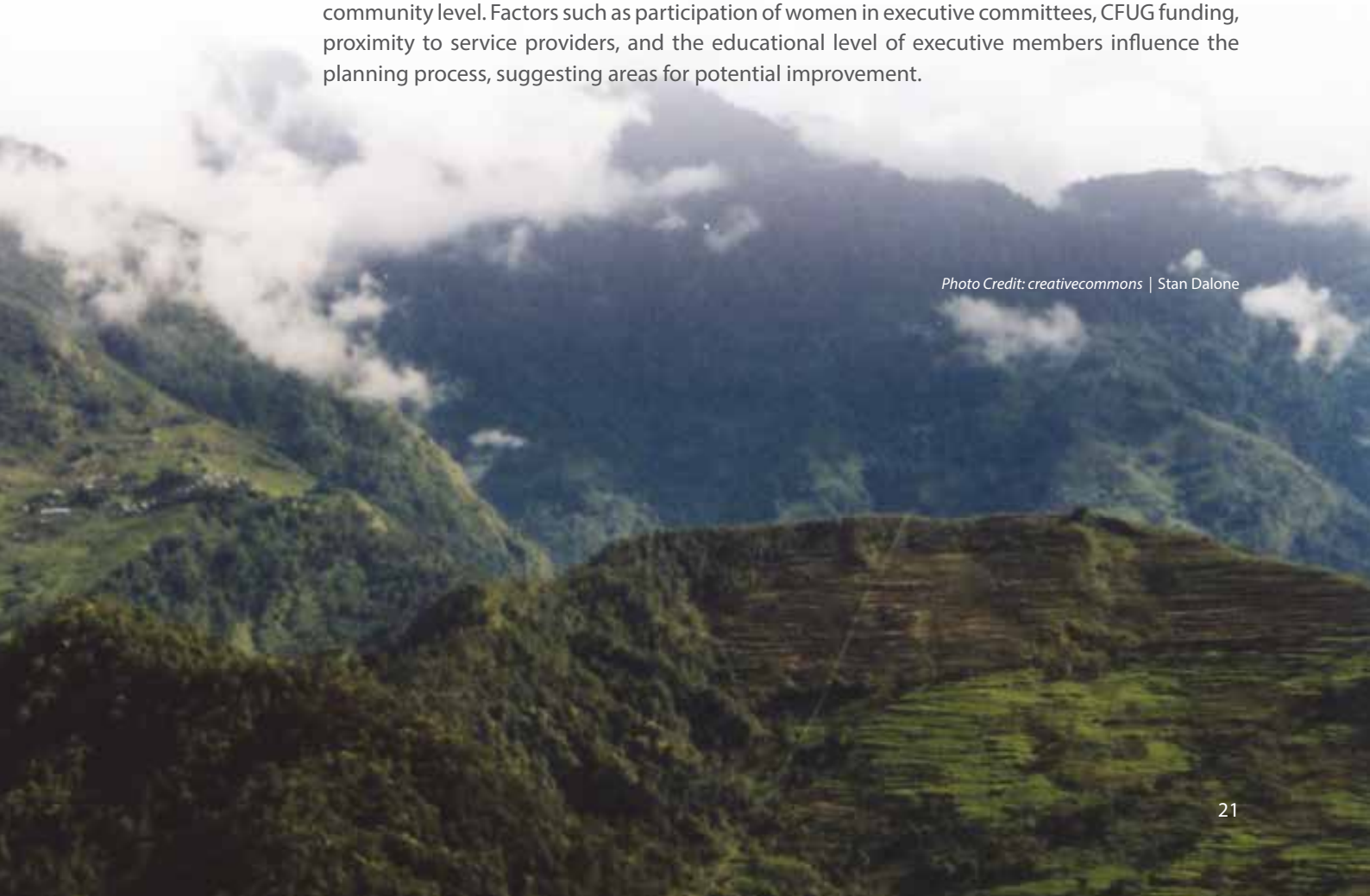
Lessons for adaptation planning

This study's findings and literature related to the community forestry suggest that there is potential for mainstreaming local-level climate change adaptation through the CFUG network. CFUGs are established as strong, sustainable community-level civil society institutions and possess legal recognition. They have been functioning for more than 30 years, and they have large networks influencing a considerable share of the population.

Community forestry management has engaged multiple stakeholders in decision-making and planning processes, though with the shortcomings described above. Despite those shortcomings, the processes at the community level appear to be relatively inclusive and take a bottom-up approach to livelihoods and development issues. Design modifications that ensure users are properly identified and that marginalized members are duly considered could improve the decision-making process (Adhikari & Lovett 2006; Thoms 2008).

Regarding cross-level interaction, although CFUGs are not directly represented in national-level planning, many issues raised at the community level are taken to the national government through district-level government agencies. CFUGs always raise a large number of issues, and it is not possible to translate all of them into policy given the scarce resources at the national level. Nevertheless, the national government appears to be very receptive towards requests that can be addressed at a low cost. Similarly, communities are likely to be receptive to national-level initiatives as the policies have been developed with community input and are compatible with local socio-economic conditions. Again, this suggests good potential for integrating climate change adaptation into CFUG activities. Under the current CFUG model, issues related to vulnerability, such as access to resources and services, political access and livelihoods could be integrated into national-level planning. Likewise, the information related to existing and potential climate stresses encompassing predicted climate change trends, climatic hazards and degrees of impact could be conveyed from the national level to the community level.

The econometric analysis shows that various socio-economic factors influence planning at the community level. Factors such as participation of women in executive committees, CFUG funding, proximity to service providers, and the educational level of executive members influence the planning process, suggesting areas for potential improvement.



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Case Study 2 THE PHILIPPINES
Natural Resource Management Disaster Risk Reduction Management and Climate Change Adaptation Planning

Michael D. Pido and Manuel C. Rangasa

Introduction

The Philippines study was coordinated by the Partnership in Environmental Management for the Seas of East Asia[3] (PEMSEA) in partnership with the Stockholm Environment Institute (SEI). Two case study sites were selected, in the provinces of Palawan and Albay. The Palawan case study was led by Dr. Michael Pido, Director of the Center for Strategic Policy and Governance of Palawan State University; the Albay case study was conducted by Manuel C. Rangasa of Center for Initiatives and Research for Climate Adaptation (CIRCA) and Albay Climate Change Academy for Local Government. The key question for the case studies was: *What lessons can natural resource management and disaster risk reduction planning teach us for adaptation planning?*

[3] Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is a partnership arrangement involving various stakeholders of the Seas of East Asia, including national and local governments, civil society, the private sector, research and education institutions, communities, international agencies, regional programmes, financial institutions and donors. It is also the regional coordinating mechanism for the implementation of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA). Through stronger partnerships, networking and collaboration, PEMSEA is broadening its portfolio of services and stepping up its efforts to bring about governance and management changes in the Seas of East Asia region. For more information, visit www.PEMSEA.org.

Methodological approach

Both case studies involved complementary research methods. The first step was a review of relevant literature, including government documents, academic publications, materials from non-governmental organizations and other gray literature, and online materials. The literature review was complemented by key informant interviews with individuals and/or focus groups of officials who have first-hand knowledge of natural resource management, disaster risk reduction and management and climate change adaptation. The research questions and sub-questions examined in the study are provided in Table 1 of the summary chapter.

Case study background

The study sites, Palawan and Albay provinces, were selected on the basis of their extent of experience in natural resource management, disaster risk reduction and management and climate change adaptation. Figure 9 shows the sites' locations in the Philippines and relative to neighbouring Asian countries.

Figure 9: Location of Palawan and Albay provinces

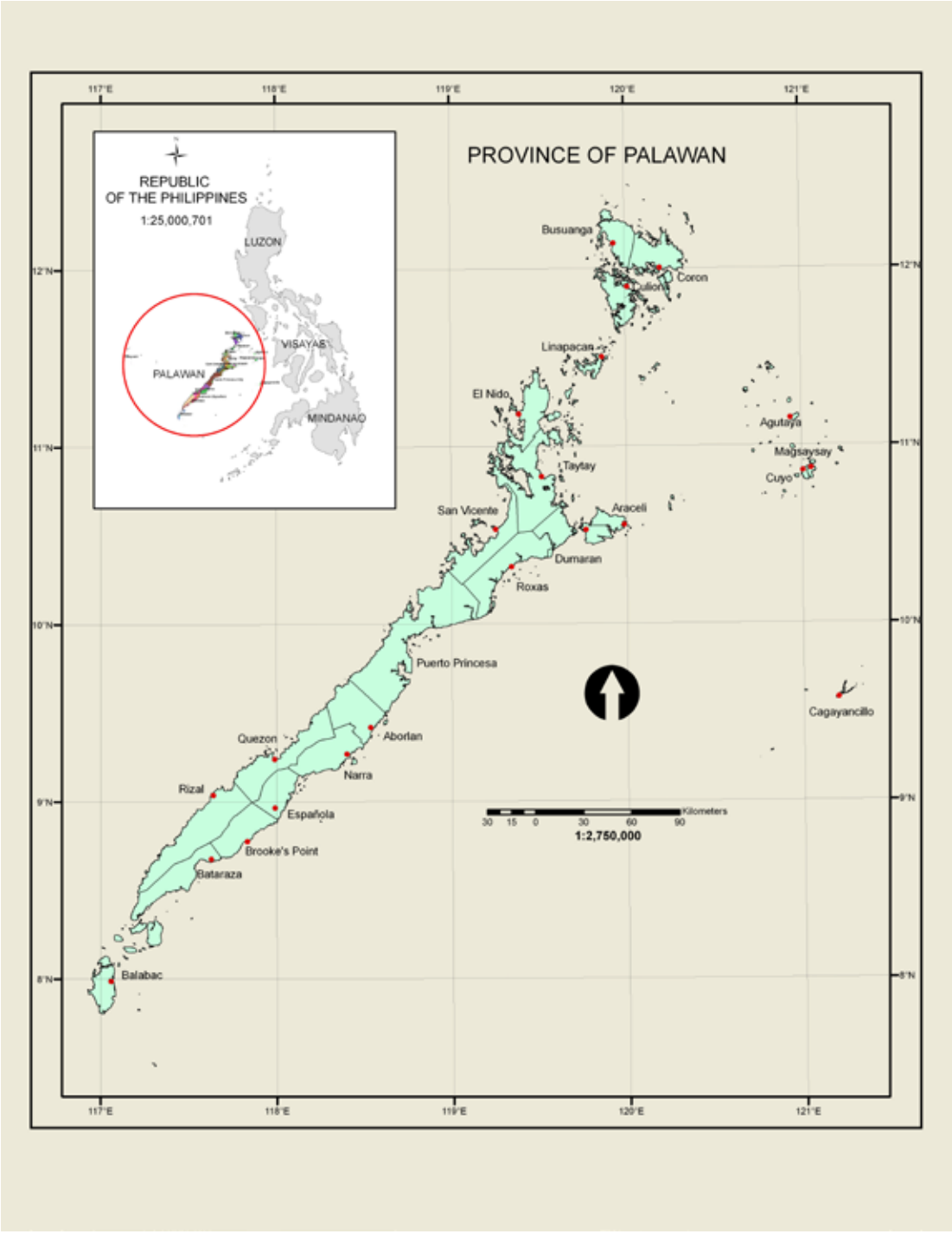
Palawan province

The province of Palawan consists of the island of Palawan and more than a thousand smaller islands, with a combined total area of nearly 15,000 km^2. It includes 23 municipalities (equivalent to a district-level government unit) and the capital city, Puerto Princesa, which is classified as a highly urbanized city and/or an independent component city, and thus is able to operate administratively outside the province's jurisdictional domain. Palawan province is one of the least densely populated provinces in the Philippines, with only 771,667 residents as of 2010 (excluding Puerto Princesa City, which had another 222,673).[4]

[4] Per the *2010 Census of Population and Housing;* see http://census.gov.ph/content/2010-census-population-and-housing-reveals-philippine-population-9234-million.

Biogeographically, Palawan province is more similar to the Indo-Malayan sub-region than to the rest of the Philippines, and its flora and fauna are akin to those found in Borneo. In fact, some distinct species have evolved on certain islands, such as the Calamianes deer *(Axis calamianes)* in the northernmost Calamianes islands and the Philippine mouse-deer, also known as the Balabac chevrotain or *pilandok (Tragulus nigricans)* in the southernmost islands of Balabac near Sabah. Discoveries of new species of pitcher plant (Robinson et al. 2009) and gecko (Brown et al. 2010) have been published in scientific literature during the past two years. These new discoveries highlight the biogeographic distinctiveness and level of floral and vertebrate endemism of Palawan Island groups (Esselstyn et al. 2004).

Figure 10: Location map of Palawan Province and Puerto Princesa City, Philippines



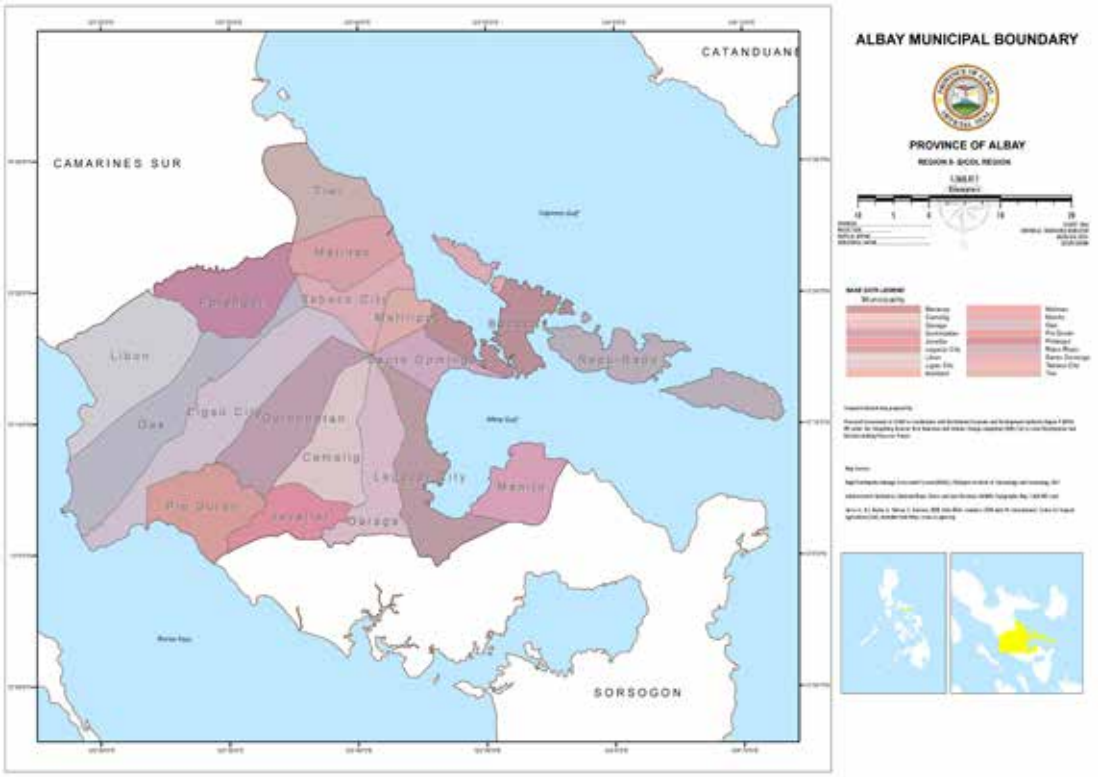
Palawan provides a unique setting for understanding natural resource management, disaster risk reduction and climate change adaptation. Despite the presence of extractive industries (such as mining) and destructive forestry practices (shifting cultivation/slash-and-burn farming), the province still has the largest tract of mangroves and terrestrial forest in the country. Some 46% of the province's land area still has natural vegetation; after World War II, the total estimated forest cover was around 89%, or 1.3 million hectares (Barrera et al. 1960). Moreover, some 42% of the total remaining mangroves in the Philippines are found in the province (PCSDS 2010). Although there are already signs of overfishing, its near-shore and offshore marine areas remain fairly productive, supplying metro Manila with more than half of its fish requirements.

Palawan is not on a fault line and thus it is not exposed to earthquakes, and it is generally outside the path of the typhoons that often hit the Bicol Region (including Albay). As an island province, however, Palawan is quite susceptible to climate change impacts and sea level rise. Its main island (about 12,000 km^2) is ecologically fragile, a rather long island (over 400 km in length) but quite narrow (less than 10 km at its narrowest point) with quite steep mountain ranges in the middle. Aside from small watersheds and narrow river courses, it has steep topography as well as highly erodible and impermeable soils (PIADPO 1985). The disaster map of the Mines and Geosciences Bureau has identified the eastern flank as prone to flooding, while the western flank is categorized as at high risk for tsunamis and storm surges. Hence, all environmentally destructive activities in the uplands and low hills will affect the lowlands and the adjoining coastal marine areas as well.

Albay province

The province of Albay lies at the southern tail of Luzon and is bounded by Camarines Sur to the North, Lagonoy Gulf to the Northeast, Pacific Ocean to the East, Sorsogon to the South and Burias Pass to the West (see Figure 11). The 2010 Census estimated a total population of 1,233,432.[5] It is the second largest province in the Bicol Region, with three legislative districts, three cities and 15 municipalities. It has a total land area of 2,567 km^2. Its coastline extends 364 km, with 149 coastal barangays (villages). It has four major islands: Cagraray, Rapu-Rapu, Batan and San Miguel.

Figure 11: Map of Albay Province



[5] See see http://census.gov.ph/content/2010-census-population-and-housing-reveals-philippine-population-9234-million.

Albay lies in the Western Pacific Basin and is exposed to many weather conditions, including monsoons, severe thunderstorms, the Intertropical Convergence Zone (ITCZ), typhoons, and tropical cyclones. Each year, three to five typhoons hit the province directly, with as many as 350,000 people evacuated from their homes. There are also landslides, floods and tsunamis. In addition, Albay is exposed to volcanic eruptions and is on an active fault line. Like Palawan, it is at risk from sea level rise.

Study findings

Governance

The planning processes for natural resource management and/or disaster risk reduction take place at five administrative levels: (1) central/national, (2) regional, (3) provincial, (4) city/municipal, and (5) barangay (village). Most national government agencies operate at the top three levels. Some have offices at the city/municipal level or an office for a cluster of cities/municipalities.

The province, the city/municipality, and the barangay constitute the so-called local government units, in descending order. The general "mode" in the Philippines is bottom-up planning. Local-level plans normally emanate at the barangay level. Then, such plans are elevated to the city/municipal level and then the provincial level.

The national government provides republic acts and executive issuances related to natural resource management, disaster risk reduction and climate change adaptation. These policies are usually implemented at sub-national levels, often by region (clusters of provinces).

The province of Palawan belongs to the MIMAROPA Region (Region IV-B), along with Marinduque, Occidental Mindoro, Oriental Mindoro and Romblon. The province of Albay belongs to the Bicol Region (Region V), along with Camarines Sur, Camarines Norte, Sorsogon and the island province of Catanduanes.

National policies may also be implemented at the individual province, city/municipality or barangay levels. Palawan includes 23 municipalities plus Puerto Princesa City. There are 66 barangays within Puerto Princesa City and 367 barangays covering the 23 municipalities. Albay province is composed of 15 municipalities and three cities (Legazpi, Ligao and Tabaco City). The cities have a total of 172 barangays, while the municipalities include 548 barangays.

Who are the actors?

The stakeholders in natural resource management, disaster risk reduction and adaptation include (1) governments, (2) the private sector, (3) local communities, (4) civil society, (5) international organizations, (6) donor agencies, and (7) scientific communities/academia. Government actors include both national and sub-national/local officials, as well as representatives from the judiciary and legislative branches. The judiciary includes the Supreme Court and lower courts. The legislative (Congress of the Philippines) is broadly classified between the House of Representatives (whose members are elected by Congressional District) and the Senate Representatives (whose members are elected nationwide).

Private-sector actors include agriculture developers, aquaculturists, commercial fishers, energy developers, miners, shippers, traders and tourism operators. Representatives from local communities include artisanal/municipal fishers and reef gleaners, among others. Those from the civil society include non-governmental organizations (NGOs), media and people's organizations. Prominent global NGOs include Conservation International and the World Wildlife Fund, while local environmental NGOs include the Environmental Legal Assistance Center (ELAC), Haribon Palawan and Sagip Gubat Dagat (SAGUDA), and the Center for Initiatives and Research for Climate Adaptation (CIRCA). International organizations (such as The World Fish Center and World Vision), donor agencies (e.g. the development aid agencies of the European Union, Spain and the United States, as well as the United Nations Development Programme), and scientific communities/academia are also quite active.

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Which are the institutions?

In the Philippines, concerns related to natural resource management, disaster risk reduction and climate change adaptation fall within the jurisdiction of several national government agencies.

Natural resource management

The Department of Environment and Natural Resources (DENR) is the top national agency in charge of overseeing the exploration, development, utilization and conservation of the Philippines' natural resources. It is mandated to stop environmental abuses, reverse ecological degradation, conserve remaining natural resources and ensure that they benefit the Filipino people. The DENR operates from the national level down to the municipal/city levels. To carry out its functions, it has six bureaus: Environmental Management Bureau, Forest Management Bureau, Mines and Geosciences Bureau, Protected Areas and Wildlife Bureau, Ecosystems Research and Development Bureau and Lands Management Bureau.

Sources of environmental and natural resource management laws include the 1987 Philippine Constitution, Republic Acts, Executive Orders, Administrative Orders, local ordinances and judicial decisions as well as international doctrines and principles. Constitutional provisions are paramount. The 1987 Philippine Constitution highlights the right to a balanced ecology: "The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature" (Article II, Section 16); and efficient use of resources (Article XII, Section 1).

The DENR spearheads the implementation of several key laws, such as Republic Act 7586, or the National Integrated Protected Areas System (NIPAS) Act of 1992, which established a system for designating national parks and protected areas. The thrust of this legislation is "to preserve genetic diversity, to ensure the sustainable use of resources therein, and to maintain their natural conditions to the greatest extent possible". In Palawan, nine sites were included in the initial components of NIPAS.

The Environmental Impact Statement (EIS) System (Presidential Decree 1586) of 1978 is another key natural resource management law. It requires government agencies, government-owned or controlled corporations and private companies to prepare an environmental impact assessment (EIA) for any project or activity that significantly affects the quality of the environment. The law also provided for the proclamation of environmentally critical areas and projects.

The DENR has 14 regional offices, each of which includes Provincial Environment and Natural Resources Offices (PENROs) that have administrative control over the respective province's environmental matters. The latter are located in the provincial capitals, Puerto Princesa City in Palawan and Legazpi City in Albay.

Under the PENROs are the Community Environment and Natural Resources Offices (CENROs), which have jurisdiction over one or more municipalities. The PENROs and CENROs provide various services related to natural resource management. These include services related to: (1) forest management (e.g. community-based forest management, forest lease management agreement, forest protection and law enforcement); (2) land management (e.g. land surveys, land titling, issuance of certificate of ancestral domain/land claims, etc.); (3) environmental management (e.g. solid waste management, enforcement of EIA system); and (4) protected areas and wildlife (e.g. conduct of biodiversity monitoring systems and management of coastal and marine resources).

The Department of the Interior and Local Government (DILG), meanwhile, is mandated to promote peace and order, ensure public safety, and strengthen the capability of local government units to effectively deliver basic services to the citizenry. One of its expected "organizational outcomes" is "improved performance of local governments in environmental management". Section 4 of the 1987 Philippine Constitution stipulates that the President of the Philippines shall exercise general supervision over local governments, and that authority may be delegated to the DILG Secretary. The DILG is thus essentially a support agency to ensure that national laws, policies and regulations are carried out by the local government units. The Philippine National Police is under the DILG. The basic relationship among the DENR, DILG and local governments is visually represented in Table 3 below.

Table 3: Major government bodies involved in environment and natural resources management

Administrative Hierarchy/ Level	Department of Environment and Natural Resources (DENR)	Department of Interior and Local Government (DILG)	Local government units
National	Central office	Central office	-
Regional	Regional offices	Regional offices	-
Provincial	Provincial Environment and Natural Resources Offices (PENROs)	Provincial offices	Provincial government
Municipal/City	Provincial Environment and Natural Resources Offices (PENROs)	Municipal/City offices	Municipal/City government
Village (Barangay)	-	-	Village government

Other national agencies are involved in natural resources management, particularly in law enforcement. The Department of National Defense (DND) has armed forces which enforce forestry laws. The Philippine Coast Guard (PCG), which is under the Department of Transportation and Communications (DOTC), enforces maritime laws to protect the seas and oceans. The Department of Agriculture (DA), through its Bureau of Fisheries and Aquatic Resources (BFAR), is also involved in natural resources management. Particularly for the fisheries sector, BFAR mainly handles commercial fisheries (outside 15 km from the shoreline involving fishing vessels that are more than three gross tons) and aquaculture.

Some national laws devolved the management of natural resources to local government units. The Local Government Code of 1991 (RA 7160) established local government units as the key managers of resources within their jurisdictions, discharging the functions and responsibilities of national agencies and offices devolved to them. Hence, local government units share with the national government the responsibility in the management and maintenance of ecological balance. Responsibilities related to natural resources management devolved to local government units include the enforcement of environment and natural resources laws within their territory, water and soil resources utilization and conservation projects, as well as the provision of extension and on-site research services and facilities related to agriculture and fishery activities.

Some governmental functions specify a particular local government level. For example, for a barangay, this includes solid waste collection. Key roles for a municipality include water and soil resource utilization, conservation projects, enforcement of fishery laws in municipal waters, and the conservation of mangroves. Municipalities also have primary responsibility for solid waste disposal and environmental management of general hygiene and sanitation, as well as tourism facilities and conservation of tourist attractions.

Moreover, the Local Government Code specifies that pursuant to national policies and subject to the supervision, control and review of the DENR, municipalities shall be involved in the implementation of community-based forestry projects, which include integrated social forestry programs and similar projects; management and control of communal forests with an area not exceeding 50 km^2; and establishment of tree parks, green belts, and similar forest development projects. For a province, natural resources management-related functions include inter-municipal waterworks, drainage, sewerage and flood control as well as tourism development and promotion programmes, including eco-tourism. Pursuant to national policies and subject to the supervision, control and review of the DENR, a province shall be involved in the enforcement of forestry laws (but limited to community-based forestry projects), pollution control law, small-scale mining law, and other laws on the protection of the environment; and mini-hydroelectric projects for local purposes. Among the local government units, municipalities and cities have the greatest mandates in terms of natural resources management and disaster risk reduction.

The Philippine Fisheries Code of 1998 (RA 8550) has devolved more functions to local government units pertaining to the management of fishery resources. Municipal waters under the Fisheries Code include streams, lakes, inland bodies of water and tidal waters within the municipality spatially within 15 km away from the shoreline. Excluded under municipal waters are protected areas as defined in the NIPAS Act of 1992.

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Disaster risk reduction and climate change adaptation

Prior to 2010, the Philippine Disaster Management System (PDMS) was run through the National Disaster Coordinating Council (NDCC). The PDMS consisted of 17 Regional Disaster Coordinating Councils, 80 Provincial Disaster Coordinating Councils, 113 City Disaster Coordinating Councils, 1,496 Municipal Disaster Coordinating Councils, and 41,956 Barangay Disaster Coordinating Councils (Duque 2005). The NDCC is the highest policy-making body for emergency management programmes in the Philippines, with the Office of Civil Defense (OCD) as its operating arm.

On 27 May 2010, then-President Arroyo signed Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010. The Implementing Rules and Regulations of 10121 were issued on 27 September 2010. This Act provides for 'the development of policies and plans and the implementation of actions and measures pertaining to all aspects of disaster risk reduction and management, including good governance, risk assessment and early warning, knowledge building and awareness raising, reducing underlying risk factors, and preparedness for effective response and early recovery'. The law acknowledges the need to 'adopt a disaster risk reduction and management approach that is holistic, comprehensive, integrated, and proactive in lessening the socio-economic and environmental impacts of disasters including climate change, and promote the involvement and participation of all sectors and all stakeholders concerned, at all levels, especially the local community'.

This legislation has reorganized the NDCC, now called the National Disaster Risk Reduction and Management Council (NDRRMC), and empowered it with policy-making, coordination, integration, supervision, monitoring and evaluation. Among the functions of the NDRMC are the development of a national disaster risk reduction and management framework, which shall provide for comprehensive, all-hazards, multi-sectoral, inter-agency and community-based approach to disaster risk reduction and management. The OCD remains, headed by an administrator who also serves as the executive director of the NDRMC (Sy 2010). Structurally, the OCD is under the DND.

The lead government agency on climate change in the Philippines is the Climate Change Commission, which was established under the Climate Change Act of 2009 (RA 9729), enacted on 23 October 2009. The commission was mandated to draft a National Framework Strategy on Climate Change, which was signed on April 28, 2010, in Puerto Princesa City.[6] The strategy envisions a "climate risk-resilient Philippines with healthy, safe, prosperous and self-reliant communities, and thriving and productive ecosystems", and outlines cross-cutting strategies relating to capacity development, knowledge management, information, education, communication and advocacy, research and development/technology transfer and gender mainstreaming. The means of implementation include multi-stakeholder partnerships, financing, valuation, policy, planning and mainstreaming.

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[6] See http://*www.neda.gov.ph/references/Guidelines/DRR/nfscc_sgd.pdf.*

The law also required the Climate Change Commission to formulate a National Climate Change Action Plan, which was completed in 2011.[7] It involves (1) assessment of climate change national impacts, (2) identification of most vulnerable communities/areas, (3) identification of differential impacts of climate change on men, women and children, (4) assessment and management of risk and vulnerability, (5) mitigation potentials, (6) identification of options, prioritization of appropriate adaptation measures, and (7) climate financing. In addition, the law required the creation of Local Climate Change Action Plans, and called for barangays to be directly involved with other local government units in prioritizing climate change issues. Adaptation was also to become a regular function of municipal and city government units and of inter-agency collaboration; all were directed to ensure their plans reflected social, economic, and environmental conditions and emerging issues. Moreover, local government units were required to act as frontline agencies; regularly update climate action plans; mobilize and allocate resources to implement those plans; and authorize the use of their Internal Revenue Allotments to implement the plans.

Under the Climate Change Act of 2009, several national government agencies were given specific mandates. The DENR was appointed to serve as the knowledge hub of all climate change matters. The Department of Education (DepEd) was appointed to integrate climate change into curricula at the primary and secondary levels. The DILG was appointed to provide training to build capacity among local government units in climate change planning and adaptation. The Department of Foreign Affairs (DFA) was appointed to review international climate change-related agreements. The Philippine Information Agency (PIA) was appointed to take charge of IEC concerns pertaining to climate change. The Government Financing Institutions (GFIs) were appointed to provide preferential financial packages, mostly loans, for some on-the-ground actions and interventions.

It should be noted that local government units operate under mandates and/or directives from the national government. At the province level in Palawan, the DRRM concerns are handled by the Provincial Disaster Risk Reduction and Management Office (PDRRMO). The environment-related concerns are handled by the Provincial Government Environment and Natural Resources Office (PG-ENRO). The PG-ENRO serves as the local counterpart of the DENR's PENRO. The PG-ENRO is also one of the organizational units within the Provincial Government that handles climate change-related concerns. The PG-ENRO is a member of the PDRRMO.

Palawan Province is the only province with a special environmental law, the Strategic Environmental Plan law (RA 7611), enacted in 1992. The law provides a framework for the province's sustainable development and environmental conservation efforts. This landmark legislation has brought together multi-sectoral efforts in effecting a serious and sustained agenda that will provide for the continued existence of Palawan as a unique ecological system.

The presence of a unique policy-making body – the Palawan Council for Sustainable Development (PCSD) – is also the first of its kind in the Philippines. The PCSD has legislative, executive and quasi-judicial functions. Between 1992 and March 30, 2011, the PCSD issued 418 resolutions about agriculture, ancestral domain, economics, fisheries, forestry, licensing/permitting, miscellaneous concerns, power/energy, protected areas, SEP concerns, tourism, caves and wildlife.

Another distinct feature in Palawan is the unusual amount of local control over natural resources management. Puerto Princesa City is the only local government unit in the Philippines that directly manages a protected area, the Puerto Princesa Subterranean River National Park, a World Heritage Site. Normally, the DENR chairs the management of the protected areas under the NIPAS Act of 1992. In the province of Palawan, management of protected areas is shared by DENR and PCSD. This arrangement is the necessary consequence of the declaration by a court of law that in the province of Palawan the SEP law is the primary law, while NIPAS is only supplementary.

Albay, meanwhile, stands out for its strong political leadership on adaptation. After suffering extensive damages from devastating typhoons, the Albay Provincial Board (Sangguniang Panlalawigan) approved Resolution 2007-04, proclaiming adaptation as a policy priority for the province. To implement the policy, the provincial government created three units: the Albay Public Safety and Emergency Office (APSEMO), to focus on disaster risk reduction; the Centre for Initiatives and Research for Climate Adaptation (CIRCA); and the Albay Millennium Development Goals Office (AMDGO).

[7] For a summary, see http://climate.gov.ph/index.php/nccap-executive-summary.

What are the steps involved in decision-making?

The steps vary according to the institutions involved. With regard to natural resources management, the DENR has a fully functional setup, depending on the areas being addressed, such as forest or mineral resources. For the devolved natural resources management functions in local government units, there are already established procedures at the barangay, municipal/city and provincial levels. DA-BFAR also supports natural resources management and has established procedures related to the fisheries sector, such as the issuance of permits for commercial fishing vessels and aquaculture farms. Although the fundamental steps involved in planning and decision-making for disaster risk reduction and adaptation are also established, they are not as "fine-tuned", and the more detailed steps at the municipal and/or barangay levels are still being developed. In any case in Palawan, local plans (such as Comprehensive Land Use Plans, CCA plan, DRR plan, and Environmentally Critical Areas Network Zoning Plan) need to be integrated and/or harmonized. Protocols for this integrated planning have to be developed and tested.

In the province of Palawan, the Palawan Council for Sustainable Development (PCSD) serves as the policy and decision-making body regarding conservation and development efforts, spanning natural resources management, disaster risk reduction and adaptation. The PCSD meets monthly. For some urgent matters, the Executive Committee of the PCSD may meet to make decisions. Another avenue for multistakeholder participation is the City/Municipal ECAN Boards. Normally projects have to be endorsed first by ECAN Boards to city/municipal council. And even if extractive projects have already been approved, there are still avenues for cross-level/multistakeholder interaction of various stakeholders in certain multi-partite monitoring teams (MMTs).

In the province of Albay, the Provincial Governor makes the policy and local laws are enacted by the Sangguniang Panlalawigan. The different offices under the Office of the Governor ensure the implementation of the policy sanctioned by the provincial legislative body.

In evaluating the power dynamics among these government agencies, it is important to note that each has a specific legal mandate, and some operate individually, while others are part of a cluster of institutions. The DENR undertakes the "regular" natural resources management functions, while the municipal/city ENROs implement the "devolved" natural resources management functions. Similarly, the PG-ENRO handles climate concerns in collaboration with other agencies. The PDRRMC is made up of various agencies that provide the general direction for the DRRM concerns at the provincial level.

What are the different levels of decision-making?

The levels of decision-making vary among the institutions, offices or councils involved. For the DENR, the premier agency in-charge of natural resources management, issues at the level of municipality (or cluster of municipalities) are decided at the CENRO level, such as a permit to cut trees. Concerns at the level of the province are addressed at the PENRO level. Issues involving two or more provinces are tackled at the regional level. As needed, these concerns are elevated to the national level.

Some natural resources management functions devolved to the local level are decided at the appropriate administrative hierarchy. Solid waste collection is a natural resources management function that could be addressed at the barangay or village level. Key roles for a municipality include water and soil resource utilization and conservation projects, as well as the enforcement of fishery laws in municipal waters, including the conservation of mangroves. Municipalities are responsible for solid waste disposal systems, environmental management systems, facilities related to general hygiene and sanitation, tourism facilities and conservation of tourist attractions.

For a province, natural resources management-related functions relate to inter-municipal waterworks, drainage and sewerage and flood control as well as tourism development and promotion programmes, including eco-tourism. Pursuant to national policies and subject to the supervision, control and review of the DENR, a province shall be involved in the enforcement of forestry laws limited to community-based forestry projects, pollution control law, small-scale mining law, and other laws on the protection of the environment. A province may also act on mini-hydroelectric projects for local purposes.

In the case of disaster risk reduction, the PDRRMO coordinates efforts at the provincial level. The barangay DRRMO (BDRRMO) is the first organization to act on a localized disaster incident, such as flash floods or landslides. Then, the BDRRMO reports the disaster incident to the municipal DRRMO (MDRRMO) and/or simultaneously to the PDRRMO. If the situation can be sufficiently addressed by the MDRRMO, the decision making may stop at that level. Otherwise, the PDRRMO shall dispatch its quick reaction teams. In the case of adaptation concerns, the PG-ENRO is one of the units involved in the provincial efforts. Although there is coordination of planning and related organizational efforts, Puerto Princesa City operates independently of the province with regard to adaptation and disaster risk reduction concerns.

Participation

To what extent are communities involved in decision-making on resources/areas that affect them?

Community consultation has been a key requirement for natural resources management in particular and economic development in general in the Philippines. Overall, extensive community consultations are required prior to the implementation of major programmes and projects.

At the lowest level, local communities (at the village or barangay level) are always consulted in matters related to natural resources management that affect them. Examples include small-scale mining operations and commercial oil palm plantations. Before operations, the village council will first have to endorse the project through either a barangay resolution or ordinance. Then, such endorsement will be elevated to the municipality/city for approval by the municipality/city, and then at the provincial level.

Still, the involvement and/or influence of the communities in actual decisions are difficult to ascertain. This is because the term "community" does not necessarily refer to a group of people in a defined geographical area as a single organizational entity. Most local communities or villages in the Philippines have heterogeneous ethnic/migrant populations. While such groups of people may share the same ethnicity or geographical location, their aspirations about socio-economic development may widely vary.

The Indigenous People's Rights Act (IPRA) of 1997 is one of the national laws governing natural resource management. Indigenous Peoples (IPs) are usually distinguished from local communities so that the major stakeholder group is usually called indigenous and local communities (ILC), not just "local communities." It is very relevant in Palawan as there are various IPs or Indigenous Cultural Communities (ICCs) with large ancestral domain claims. The participation of IPs in the natural resource management planning process is significant, given that Free and Prior Informed Consent (FPIC) , the IPs/ICCs' right to self-determination, and development of ancestral domain sustainable development plans are important natural resource management concerns and mechanisms.

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Who are the actors?

Key actors in natural resources management, disaster risk reduction and adaptation include national and local government officials and agency line staff, the private sector, local communities, civil society, international organizations, donor agencies, and scientific communities/academia.

Major national government agencies involved in these issues, as noted above include the Department of Environment and Natural Resources (DENR), the Department of Interior and Local Government (DILG), and the Department of National Defense (DND). These agencies operate at the national, regional, and provincial levels; some also have offices at the municipal/city levels.

Private-sector representation varies. These include those stakeholders involved in extractive industries (such as mineral resources and fisheries), resource-based industries (those engaged in recreational diving and eco-tourism) and service industries. Local community members are those who normally reside in the villages. Civil society groups include international environmental NGOs.

Note that some actors are a conglomeration of various organizational entities. For example, the Provincial Development Council consists of members from various socio-economic sectors, both public and private.

Generally, the actors concerned with these issues relate in a friendly and/or collegial manner. Hence, the mandates of the respective institutions/agencies are fully recognized. The relationship may be considered as fluid, however, depending on the issues involved. This ranges from fully cooperative engagement to relationships that might be antagonistic.

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Whose voices matter most?

Overall, the voices of all stakeholder groups are given the chance to be heard. There are other avenues through which the voices of different actors may be heard. In Palawan, for instance, several summits were held to discuss the various concerns and issues about live fish trade. Formal fora were likewise held to deliberate the issue of mining. These voices' relative importance is difficult to classify because the capability to be heard is contingent on several factors, such as the number of members of a stakeholder group, the capability to influence the media, the power of its lobby group, etc.

It can be argued, though, that certain interest groups are relatively influential. That means they are able to continue their commercial operations despite opposition from other sectors of society. The fact that mining operations and live fish trade continue implies that voices of these interest groups are influential.

Who makes the decisions about policies/plans and their implementation?

Plans at the provincial and municipal level are generally prepared by the Office of the Governor or Municipal Mayor as well as other organizational units, and submitted to the respective legislative body for approval, i.e. the Provincial Board (Sangguniang Panlalawigan) or Municipal Board (Sangguniang Bayan).

The city/municipal governments also make some decisions directly, such as the approval of their comprehensive land use plans (CLUPs) through their respective legislative councils. The same holds true for the city/municipal development plans. Barangay governments also prepare their Barangay Development Plans.

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Cross-level interaction

To what extent does national planning reflect sub-national priorities and needs?

National planning reflects some sub-national priorities and needs, but not all elements are accepted thoroughly at the local level. There is a tacit understanding and/or general agreement that some natural resources will be used for local consumption and/or national development. These involve the use of non-renewable resources (such as minerals) and harvesting of renewable resources (such as live reef fish).

Sub-national actors, such as local government units, are involved in national planning in a number of ways. The preparation of the country's Medium-Term Philippine Development Plan (MTPDP) is contingent upon the provincial and regional development plans. Hence, national development plans are partly influenced or dictated by some local initiatives. These relate to various economic sectors including agriculture, mineral resources development, forestry, fisheries and tourism, among others.

The national actors, institutions and plans, on the other hand, influence sub-national plans and the implementation of those plans in a variety of ways. Generally, however, the national influence is more in terms of policy direction and/or technical guidance. The preparation of the operational details of the sub-national plans is often left in the hands of the local actors. Hence, preparation (as well as implementation) of the provincial and city/municipal development plans are left largely in the hands of the provincial and city/municipal development planning agencies, respectively. The same holds true for the implementation or on-the-ground operations of such plans.

The nature and frequency of interactions between different levels also vary. The preparation and/or adoption of a new MTPDP usually occurs every six years. This often happens at the onset of the new President's term. The local government units' plans usually have a three-year horizon. The provincial plans generally parallel the governor's three-year term. In the same way, the city/municipal development plans are within the three-year term of office of the duly elected mayor.

Generally, information is freely exchanged between the various levels of administrative hierarchy. Information requested through official or regular channels is provided to the concerned agencies. Interactions may take various forms. Some information exchanges are through formal fora, such as structured summits. Others are though semi-formal interactions, such as seminars or workshops. In other cases, though, some information may be furnished even through verbal request.

What are the mechanisms for communicating across levels (before and after planning)?

Various mechanisms are available for communicating across levels (before and after planning). Information is normally transmitted in written form, often accompanied by a formal correspondence. The President may issue an Executive Order; for example, former President Gloria Macapagal-Arroyo issued EO 533 in 2006 about Integrated Coastal Management, which covered cross-cutting issues related to natural resources management, disaster risk reduction and climate change adaptation.

The same issuances could be done by the heads of certain agencies; the Secretary of the DENR or Bureau Director may issue a Department Administrative Order. The Bureau Director of DA-BFAR has issued various Fisheries Administrative Orders concerning the fisheries sector. Natural resource management mechanisms at the international level such as multilateral environmental agreements (MEAs) are specifically mentioned. As a signatory, the Philippines is bound by them and the country has certain obligations toward their fulfillment. These include the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention on Biological Diversity (UNCBD). The UNFCCC is particularly relevant especially when the Philippines start participating in the carbon market trade by 2020 through the REDD-Plus project.

Perceptions

How do different actors perceive knowledge and capacity gaps for planning?

Overall, the different actors perceive that there are knowledge and capacity gaps for planning. Where they may disagree is on the extent of those gaps and/or the level of detail that is needed for good decision-making. The protocols for natural resource management are generally well established, so there are fewer knowledge gaps in this field. The national laws governing adaptation and disaster risk reduction, however, were only enacted in 2009 and 2010, respectively. Hence, it is understandable that there are more knowledge gaps concerning these issues.

Those involved in natural resources management perceive that more advanced research and/or methodological tools are required for planning and management. They do acknowledge that more detailed or quantitative information needs to be generated as a scientific basis for more informed decision-making. Such knowledge gaps include the need for a thorough inventory of the province's natural resources; trends in environmental destruction (such as the trends in actual areas of terrestrial forest converted into human settlements and agricultural purposes); and areas of coral reefs destroyed by destructive fishing activities.

In the case of adaptation and disaster risk reduction, those involved have identified gaps in knowledge for quantitative or predictive modelling. Although the vulnerable areas in the terrestrial and coastal/marine areas of Palawan have been identified, better quantitative models would help policy-makers and politicians. The current vulnerability maps do not specify the areas to be affected if the current sea level were to rise. In the same way, this spatial information does not explicitly quantify the areas of coral reefs that will be smothered by the continuous siltation of major rivers.

Many of the capacity gaps are in terms of human resources. At the moment, a limited number of technical personnel are involved in natural resources management, both at the national and sub-national/local levels. The number of personnel engaged in adaptation and disaster risk reduction is even more limited. Few civilians have been fully trained for search and rescue operations in the case of disaster, compared with their police and military counterparts. Limited training exists for using computers and remotely sensed data.

How can knowledge and communication gaps be closed?

Knowledge and communication gaps can be closed through enhanced information and education campaigns. National agencies, particularly DENR, DND, NEDA and the Climate Change Commission, must continuously provide the necessary information at the local or ground level and complement it with capacity-building.

Partners need to collaborate more proactively and factor in the information transmission time lag. More time is needed for the corresponding actions and/or change in behaviour. For example, a village that has been informed about disaster risk reduction and adaptation concerns may require time before it can undertake the necessary on-the-ground action.

Information may likewise have to be tailored according to the needs and capacities of the stakeholders. A few pages of policy briefs may be more useful to busy politicians and decision-makers than longer technical reports. For the general public, light reading materials – such as comics and posters – may be more suitable. Programme implementers, government planners and bureaucrats will need technical materials.

What are the perceptions about the planning process?

The general perception is that planning processes work, especially in natural resources management, for which, as previously noted, the protocols have long been established, and the roles and responsibilities of involved agencies are fairly defined.

The planning process for disaster risk reduction and adaptation may already be established; nonetheless, its implementation on the ground is another matter. Many of the protocols are new, and local capacity needs to be built. Moreover, the mandates for a few of the actors, such as NGOs and civic organizations, are not yet fully defined.

What are the perceptions about whose voices count?

The perceptions about whose voices count and don't count is quite difficult to ascertain. This is due to the fact that various stakeholder groups carry with them their distinctive voices through their own socio-economic and/or political agenda. As described earlier, a major development project has to pass through five stages (village, municipal/city, province, PCSD and DENR) before it can formally commence. At each stage, all interest or stakeholder groups are given the chance to be heard, whether they are for or against the project.

In general, all interest groups are able to express freely their sentiments. The final decisions on certain issues are still highly dependent on the actions of some political leaders, both locally and nationally.

Discussion

If this is an example of successful planning, which criteria and/or models have contributed?

There are some elements of success regarding natural resource management in Palawan. For example, the rate of forest destruction has been reduced from 19,000 ha/year in the 1980s to 5,577 ha/year in 2005 (PCSDS 2005).

The organizations needed for DRRM have already been set up and/or initiated. This holds true for the Palawan DRRMO as well as the DRRMO of Puerto Princesa City. More efforts are still needed, though, to make the lower-level DRRMOs fully functional at the municipal and village levels. Relevant trainings and appropriate equipment/facilities must likewise be provided.

Albay provides elements of success in DRRM and adaptation, because of strong leadership supported by all stakeholders in the province.

If this is an example of unsuccessful planning, which models, processes or characteristics might contribute to this?

The case of Palawan Province and Puerto Princesa City has some successes and limitations. Hence, it cannot be classified in a straightforward manner as either a success or failure. Natural resource management is relatively successful, as most of the systems and procedures – as well as institutional mechanisms – are already in place. The same argument does not hold true for DRRM and adaptation as these concerns have been enacted into national laws only fairly recently. Unlike Albay in the Bicol Region, which has been traditionally ravaged by natural disasters, these are fairly new phenomena in Palawan. Thus, planning efforts related to DRRM and adaptations are in transition.

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How is quantitative and qualitative information used in the planning process?

Information (both quantitative and qualitative) generated through research or studies has helped prepare the necessary NRM, DRRM and adaptation-related plans and policies: for example, quantitative and qualitative information generated by various institutions and individuals. Similarly, those generated concerning the status of resources are used in preparing the comprehensive land use plans and related management plans. Some indigenous technical knowledge (ITK) has likewise been documented.

How are different stakeholders involved in the planning process?

Governments, both at the local and national levels, provide the necessary regulatory and policy environments. The private sector provides the necessary capital and entrepreneurial capability.

Local communities participate in various consultative processes, such as on-the-ground NRM activities, e.g. mangrove reforestation or tree planting activities. Civil society provides the necessary advocacy. International organizations may be involved in catalytic research, while donor agencies provide the necessary funding for NRM, DRRM and adaptation concerns. The academe – including the associated scientific communities – generates the pertinent information and/or knowledge and supports the necessary information, education and communication activities. The effectiveness of their involvement, however, is difficult to ascertain quantitatively at this stage.

What tools are used for planning?

Qualitative tools, such as rapid and participatory methodologies, and quantitative tools, such as resource forecasting and modelling, are used to prepare the requisite NRM, DRRM and adaptation plans, including comprehensive land-use plans and vulnerability maps.

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Case Study 3 VIETNAM
Disaster Risk Management

Bach Tan Sinh, Vu Canh Toan, Nguyen Duy Can and Nguyen Tuan Anh

Executive summary

By examining the planning process for disaster risk reduction in Vietnam, this study aims to fill knowledge gaps concerning climate change adaptation, and provide guidance for future planning. We evaluate adaptation planning and decision-making for planning at the community, sub-national and national levels, with two local case studies focused on Binh Dinh province and An Giang province.

The first case study is a review of the Community Based Disaster Risk Management (CBDRM) project in Binh Dinh, ran by the Norwegian Red Cross. We found that CBDRM paid attention to community voices, concerns and capabilities, and supported the local population in improving its capacity to deal with disasters. The CBDRM approach was more effective than traditional forms of disaster risk management planning, in which each group (community representatives included) participates in turn.

The CBDRM project has increased local awareness of disaster preparedness, disaster response and related issues. As CBDRM is a process, however, time is needed to evaluate its eventual impact. In addition, as limited resources may affect the overall sustainability of this project, greater participation by local authorities in the project planning stage is also required.

The second case study examines the flood protected residential cluster (FPRC) programme in An Giang Province, identifying factors that supported successful outcomes, versus factors that limited success. The factors that contributed to success include:

- Applying a participatory approach to the planning process that increased the involvement of the community;
- Combining both structural and non-structural measures;
- Promoting and sharing information about the programme with the wider community;
- Integrating the programme with international organizations working in Vietnam; and
- Prioritizing the quality of housing and provision for essential services.

Factors that limited success of the project include:

- A focus on structural measures (i.e. a focus on the quantity of housing provided);
- Taking a top-down approach to planning; and
- Overlooking non-structural measures (e.g. capacity-building).

Recommendations for more effective planning and coordination of the flood protected residential cluster, especially with respect to climate change adaptation, include more site-specific and participatory planning, and the use of verifiable evaluation criteria to assist the monitoring and evaluation process.

Introduction

Climate change poses particular hurdles for developing countries and communities as they work towards sustainable development. The key issue for millions of people in Asia is how to adapt to the uncertainties posed by climate change, across multiple sectors. International attention has largely focused on mitigating future impacts by reducing greenhouse gas emissions. However, adaptation is now gaining more attention, with an emphasis on ensuring access to crucial knowledge through networks and other sharing mechanisms.

In the context of development, the challenge is to understand how planning and decision-making need to change in order to strengthen resilience and reduce climate-related risks. By examining the planning process for disaster risk reduction in Vietnam, this study aims to fill gaps in knowledge concerning climate change adaptation and provide guidance over its future planning. The study focuses on various aspects of disaster risk reduction, including governance, participation, cross-level interaction and stakeholder perceptions. In order to understand the existing approaches in Vietnam, and to draw lessons for future planning, two case studies are presented, focused on Binh Dinh and An Giang provinces.

The study's objectives are to:

- Understand approaches to and current practices in disaster risk reduction and planning at the community, sub-national and national levels;
- Understand the policy impacts and process outcomes of disaster risk reduction in Vietnam;
- Understand the disaster risk reduction coordination and communication mechanisms used between different actors, stakeholders and levels; and
- Draw lessons for future adaptation planning.

Methodology

A key question for this study was: *What lessons can disaster risk reduction planning teach us about adaptation planning?* The research process involved several steps:

i. **Literature review:** We gathered a wide range of materials, including official documents, decrees and reports released by the central government and provincial authorities, as well as reports from other projects, among them those from the Standing Office of the Central and Provincial Committee for Flood and Storm Control and Rescue (CFSCR).

ii. **Focus group discussions:** We met with focus groups at each of the case-study sites, using a checklist of concerns and open-ended questions to guide discussions. At the provincial level, all key organizations participated in the discussion, including the Department of Agriculture and Rural Development, the Agricultural Extension Center, the Standing Office of the Committee for Flood and Storm Control, the Department of Water Resources Management, and the Department of Natural Resources and Environment. At the district and village levels, representatives from the Agriculture and Rural Development Office, the Office of Nature Resources and Environment, the Farmers Association, Women's Union, and the Village People's Committee were consulted.

iii. **Interviews:** Key informant interviews were conducted. During these, a checklist of concerns and open-ended questions were used, guided by the questions outlined in Table 1 of the summary chapter. Individuals who played a key role in the decision-making process at the central and provincial levels were interviewed, as well as selected members of local communities.

Study: Community-based disaster risk reduction in Binh Dinh province

Binh Dinh is a coastal province in southern central Vietnam. It covers 6,309 km^2, and has a coastline of 134 km and a population of around 1.6 million, or 261.5 people per km^2; 28 per cent of the population lives in urban areas, and 72 per cent in rural areas.[8] Binh Dinh is divided into 10 districts and one city, Quy Nhon, which is also the socio-economic, cultural and political centre of the province. The province is characterized by a diverse geography that incorporates mountainous regions, plains, islands, rivers, shorelines, and lagoons – though most of the region is covered by mountains and hills. The local economy depends on fisheries, agriculture, seaport services, industry, and tourism, with fisheries and agriculture being the most important. According to development plans, the service sector, including tourism, will make an increasingly significant contribution to the city's gross domestic product (GDP) in the near future.[9]

[8] Binh Dinh People Committee. 2010, *Statistic Book of Binh Dinh Province.*

[9] See http://www.binhdinh.gov.vn [accessed June 2011].

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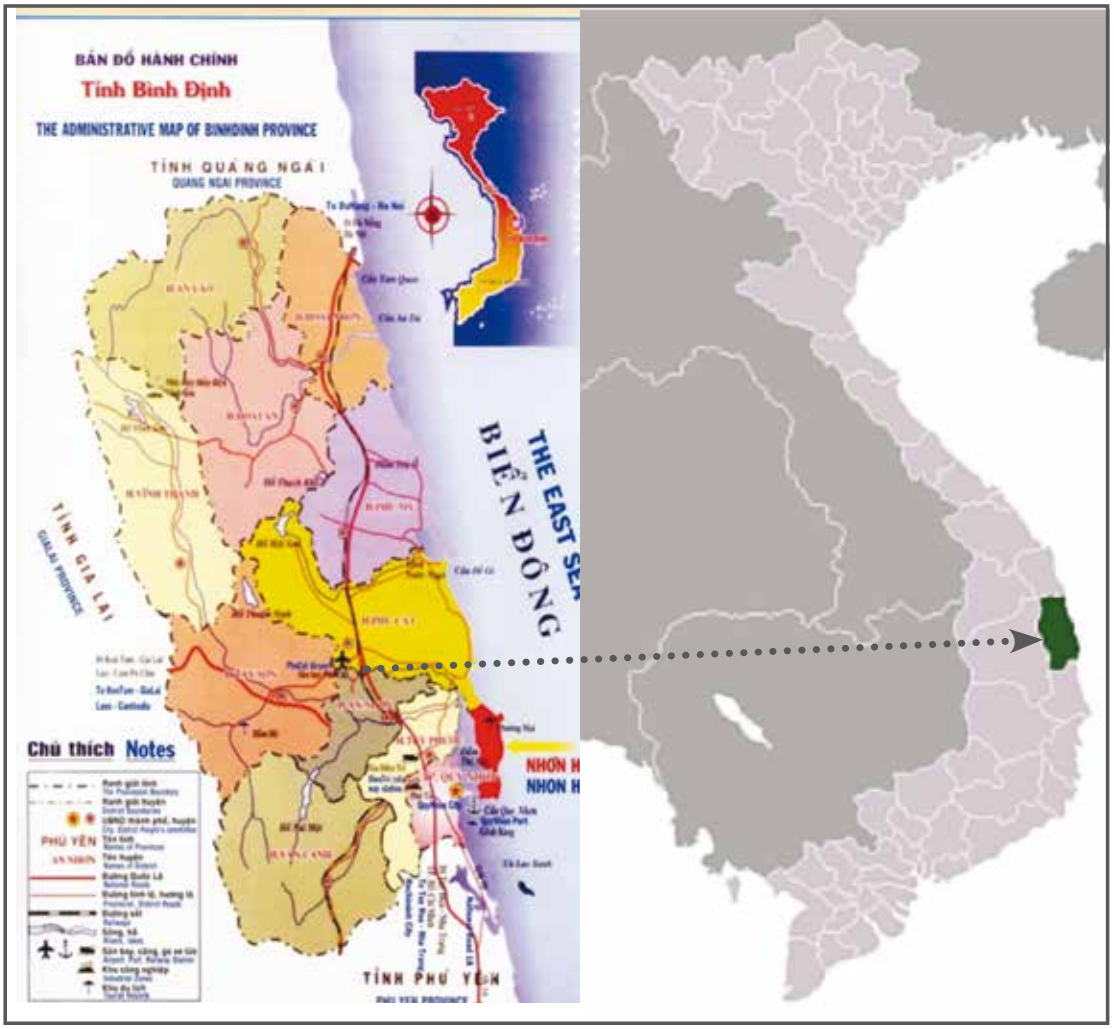
Figure 12 : Administrative map and location of Binh Dinh province



Community-based disaster risk management in Vietnam

We begin this case study by looking at community-based disaster risk management (CBDRM) practices in Vietnam, including institutional, technical and organizational aspects.

The Vietnamese have a long tradition of coping with natural disasters. Long before the establishment of the Committee for Flood and Storm Control, local communities dealt with natural disasters themselves. However, the effectiveness of their coping mechanisms was limited due to lack of capacity, awareness, resources, communication, information-sharing and coordination. In addition, local efforts focused more on response (during and after disasters), rather than anticipation and preparedness. Since 2000, however, a more proactive approach, CBDRM, has been embraced in different parts of Vietnam, through projects and programmes supported by international donors and organizations. By 2007, 23 out of 64 provinces (including Binh Dinh) had received CBDRM-related support from more than 17 international entities.

The Asian Disaster Preparedness Centre defines CBDRM as 'a process of disaster risk management in which at-risk communities (people) are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks, in order to reduce their vulnerabilities and enhance capacities. This means the people are at the heart of decision-making and implementation of disaster risk management activities.'

The essential features of CBDRM are:

- It focuses on the local community (i.e. the community is the key actor, as well as the primary beneficiary of the disaster risk management process);
- Its main strategy is to enhance the capacities and resources of the most vulnerable groups and to reduce their future vulnerability;
- It aims to produce a general improvement in people's quality of life and the natural environment; this approach assumes that addressing the root causes of disasters, e.g. poverty, discrimination, marginalization, poor governance and economic management will contribute towards these improvements;
- It brings the local community and national stakeholders together;
- It recognizes that different people have different opinions and perceptions of risks; and
- It recognizes that different community members and groups have different vulnerabilities and capacities.

The CBDRM approach was introduced in Vietnam in 1998 by the Vietnam Red Cross, CECI (Centre d'etude et de coopération international) and other international non-governmental organizations via small-scale projects in collaboration with the local authorities and communities. Historically, the dominant approach to disaster risk planning through the current political system has been top-down, guided by government agencies. CBDRM, a bottom-up approach, has only recently begun to take hold, with support from the national government.

There are still no clear and documented processes for disaster risk management planning at any level in Vietnam. Annual government disaster risk management planning starts in May and relies upon the traditional top-down approach to planning, with the main responsibility belonging to the Central Committee for Flood and Storm Control (CCFSC). However, there has been a gradual shift from this 'traditional' way of planning to a combination of 'traditional' and 'bottom-up' approaches – specifically, CBDRM. This shift has taken place at different times and to different extents at various administrative levels and geographical areas.

The key change with CBDRM is that it introduces the concept of community participation in disaster risk management planning and response. CBDRM mobilizes the community to identify, analyse, evaluate, monitor and address risks, in order to reduce vulnerability and build capacity. The approach places an emphasis on the proactive participation of communities in all phases of disaster risk management, especially the planning and preparation phase. The inclusion of the most vulnerable groups is crucial to the success of this process, while support from less vulnerable groups is also necessary. In CBDRM, local and central authorities, civil society and NGOs are all responsible for supporting vulnerable groups.

Institutionalizing CBDRM

The Vietnamese government's shift towards CBDRM began when, in January 2006, it embraced the *four on the spot* principles (leadership, forces, means and materials, and logistics), which are closely aligned with CBDRM, as the guiding principles for coping with disasters. These are outlined in Decree No. 08/2006/ND-CP, which lays out detailed regulations on a number of articles of the Ordinance on Prevention from and Fighting against Floods and Storms (amended and supplemented in August 2000). They are also included in the National Strategy for Disaster Prevention, Response and Mitigation to 2020, which was approved in 2007. More importantly, in July 2009, CBDRM was institutionalized through Decision 1002/QD-TTg, which approved the Scheme on Raising Community Awareness and Community Based Disaster Risk Management.

With support from international donors and NGOs, approaches to CBDRM had already been encouraged in the most disaster-prone areas, such as mountainous and central coastal regions. The approval of Decision 1002/QD-TTg, however, which addresses disaster risk reduction in Vietnam through 2020, means CBDRM will gradually be introduced across more provinces. The decision's stated objective is 'to raise community awareness and effectively organize the model of CBDRM for all levels and line agencies, particularly for the local authorities and residents at village and commune levels; to minimize fatalities and property loss; to limit the natural resource, environmental and cultural heritage destruction caused by disasters that contribute to guaranteeing national sustainable development, national defence and security.'

The programme activities under Decision 1002/QD-TTg include two major components:

i. Strengthening the capacity of disaster risk management officials and staff at all levels to implement CDBRM programmes, ensuring that officials at all levels are directly involved in the CBDRM process and are trained in CBDRM.

ii. Improving communication and raising awareness. The goal is to enhance the capacity of the community with regards to natural disaster mitigation, with a target of providing more than 70 per cent of residents living in disaster-prone areas with greater knowledge of flood and storm control and disaster mitigation.

The budget for these activities is roughly 988.7 billion VND (around US$50 million), with 55 per cent coming from the government, 40 per cent from international donors, and 5 per cent from individual contributions. Of the total, 182.9 billion VND (around US$8 million) is to be used for Component 1, whilst the remainder, 805.8 billion VND (US$42 million), is for Component 2. The programme is also divided into three phases: Phase 1 (2009-2010), Phase 2 (2011-2015) and Phase 3 (2016-2020).

The decision also outlined the roles of relevant ministries and agencies, including the Ministry of Agriculture and Rural Development and the Central Committee for Flood and Storm Control (CCFSC), which will be the focal points for the implementation of the programme. The Ministry of Planning and Investment, in collaboration with the Ministry of Finance, will take the lead in balancing and managing the investment from the State Budget, whilst looking for alternative sources of funding. Meanwhile, the Ministry of Education and Training, in collaboration with the Ministry of Agriculture and Rural Development and the CCFSC, will be responsible for preparing teaching materials that will integrate natural disaster prevention, response and mitigation into subjects taught at the primary and high school levels, either as part of a formal curriculum or as an extracurricular activity.

The disaster risk management process in practice

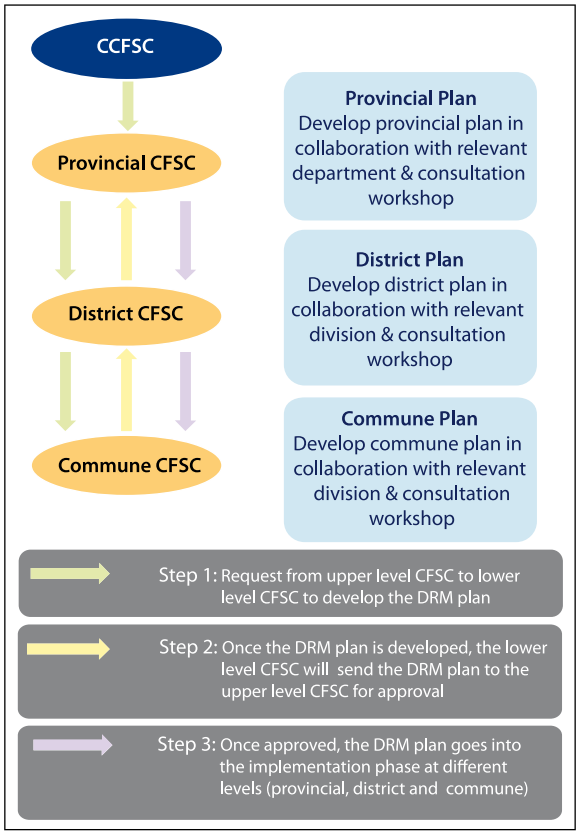
Every spring, the CCFSC develops a disaster risk management plan, based on data recorded during the previous flood and storm seasons (mainly stored on computers), forecasts from the Hydro-Meteorological Forecasting Centre, and contributions from CCFSC member ministries and departments. The CCFSC then produces a report with two main sections: 1) a review of the last flood and storm period, including a review of all the flood and storm disasters across the country, the response to these disasters, details of the damage they caused and any lessons learnt, and 2) a disaster risk management plan, including a forecast of the upcoming flood and storm period, identification of the main risks, and proposed approaches to these risks.

The report is an important document for sub-national planning and implementation of disaster risk management. A national workshop is held to discuss the report and the year's plan, attended by representatives of all disaster risk management-related ministries, agencies and representatives of selected provinces. The final plan is then approved by the government and disseminated to the relevant ministries, agencies and provinces nationwide for further action.

Based on the national plan, provincial committees for flood and storm control (CFSCs) then develop their own plans, taking into account the real or 'on the ground' situation and the amount of resources that can be mobilized. The district CFSCs then follow the provincial plan to develop their own disaster risk management plans at the commune and village levels. Each process follows more or less the same template as those at the national level: the CFSC develops the plan, then seeks approval from the top authority at that level: the Prime Minister for the national plan, or the chairman of the People's Committee at sub-national levels. The CFSCs then play a crucial role in the implementation process, collaborating with related departments and agencies.

It should be noted that local plans are significantly more specific than national or provincial plans. The latter must cover the whole country or province, and are thus general in nature, playing a guiding role for medium- and long-term planning. At the commune level, meanwhile, decision-making has to deal directly with the particular area's weak points or priorities concerning the upcoming flood and storm season. Figure 14 illustrates the entire process, from the national to commune levels.

Figure 13 : Traditional disaster risk management planning



It is clear that this traditional approach to planning offers very limited opportunities for community participation. Government agencies, especially at the national and provincial levels, hold most of the decision-making power, both in terms of disaster risk management planning and implementation (especially in budgeting resources). The district and commune levels have traditionally focused on implementation, so there has been little opportunity for communities to participate in the actual planning process. As a result, the heads of a commune or village tended to only be aware of their responsibilities and less aware of the plan for the whole commune. In addition, under the traditional way of planning, the CFSC staff would often be responsible for all planning activities (such as reviewing the last flood and storm period, investigating the situation in the areas they are responsible for, proposing activities to prepare for the upcoming season, and so forth), with only limited support from relevant departments and people on specific tasks.

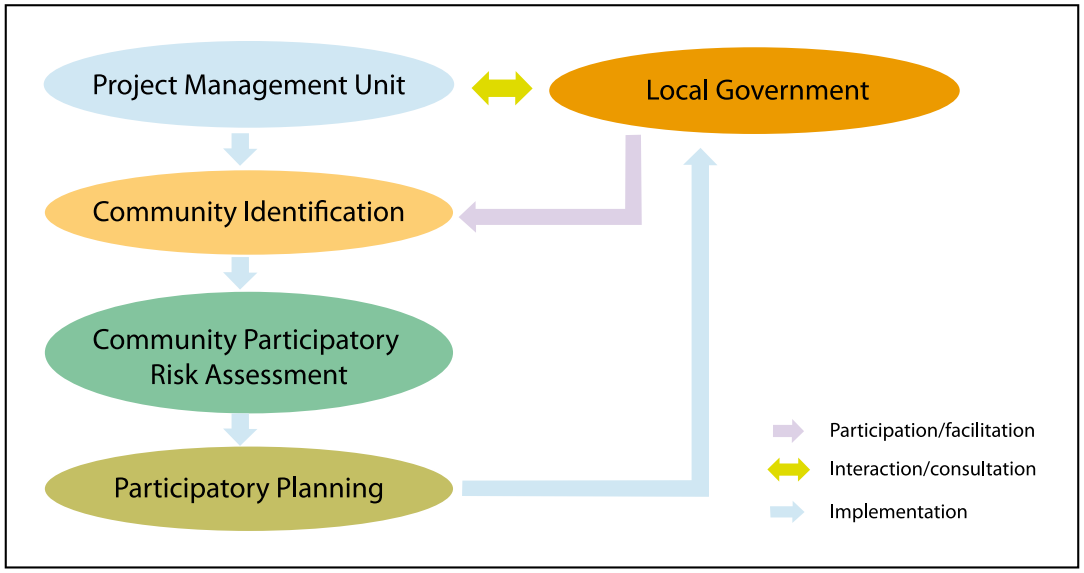
There are, however, advantages to this top-down approach. For instance, it is particularly useful for sub-national plans. As mentioned, the national disaster risk management plan is treated as a guiding document for the sub-national levels to follow. However, the CCFSC usually receives information and needs from different sectors and provinces prior to the planning process. Therefore, an imbalance in influence between national and sub-national levels sometimes occurs. Interaction between relevant stakeholders remains limited, as the CCFSC conducts most of the work. Meanwhile, provincial and sectoral actors only contribute to the process during the consultation workshop phase. By this time the draft plan has already been prepared.

The top-down approach is also useful in sharing information among the various levels by making use of linear administration systems. The use of advanced information technologies has improved communication across levels especially during the implementation phase (for example, tele-conferences between the central government, CCFSC and provincial government and ministries). However, the top-down approach also brings limitations, as it is perceived as instructions or guidance that must be followed by lower levels and does not encourage feedback.

Quite often, different stakeholders have different perceptions of disaster risk management priorities and their main responsibilities in disaster risk management planning. The Ministry/Department of Finance may see finance as the most important issue, while the Ministry/Department of Planning and Investment considers disaster risk management planning as a sub-component of the Socio-Economic Development Plan (SEDP). These gaps in perception originate from different points of view among stakeholders. For instance, district and commune officials propose solutions based on their experiences and try to receive as much support as possible, but their demands are typically in excess of the budget. Meanwhile, the national and provincial authorities try to keep as much of the limited resources as possible, so they encourage lower-level officials to utilize their own resources.

In this context, CBDRM fills a critical gap, giving priority to the commune level and providing support and guidance. Most CBDRM projects are funded by international NGOs and donors through the local CFSC, People's Committee or Red Cross and are implemented at the commune level, with the participation of local residents. Each CBDRM project forms a project management unit composed of representatives from local authorities. For instance, the chairman or vice-chairman of the province and/or district becomes the acting head of the unit. Other members include representatives of the district/commune People's Committee and relevant district and/or commune departments. The project management unit takes responsibility for project management/coordination, mobilizing the participation of the commune in the planning process, providing support, and combining the outputs of the CBDRM process with the annual government disaster risk management plan. Currently, no detailed formal documents or guidelines regarding CBDRM planning have been produced. However, different organizations have adopted common planning processes such as community identification, community participatory risk assessment and participatory planning.[10]

Figure 14 : The CBDRM process



Disaster risk management planning in Binh Dinh Province

Binh Dinh's diverse terrain supports numerous interlaced river systems, with significant interactions between marine and terrestrial environments. Hazards such as saline intrusion and desertification, storms, floods, droughts and fires, as well as river and coastal erosion, are common. Among these disasters, storms and flooding are the most damaging, and they are also frequent.[11] On average, Binh Dinh is hit by tropical low pressure systems and between three to five storms annually (either directly or indirectly). The frequency of these storms appears to be increasing (there have been 1.13 direct storms per year since 1975, compared with 0.7 per year prior to 1975). The main impacts of storm events have been shoreline erosion, flash floods and environmental pollution.[12]

[10] Binh Dinh People Committee. 2010, *Statistic Book of Binh Dinh Province.*

[11] According to a number of annual synthesis reports on flood and storm control in Binh Dinh Province.

[12] Centre for Hydro-Meteorology of South Central Region, and the Department of Science and Technology. 2011, *Climate and Hydrology Regime Characteristics in Binh Dinh Province,* Binh Dinh. p. 234

Rainfall usually occurs from September to December, when around 80 per cent of the total annual rainfall comes. The areas most affected by flooding are the lowlands in Tuy Phuoc, An Nhon, Phu Cat, Phu My and Quy Nhon.[13] In 2009, 2010 and 2011, the Binh Dinh province was seriously affected by floods. Flooding in October and November of 2011 resulted in several deaths and economic losses of around US$35 million.[14]

Disaster risk reduction and management is one of the highest priorities for the province, especially during the flood and storm season. The disaster management structure of the province is the same as that at the central level, with the CFSC as the main body in charge. The CFSC is led by the chairman or vice-chairman of the local People's Committee and includes representatives of various local departments and agencies. Under CFSC direction and management, an annual flood and storm control plan is prepared, which is then approved by the local People's Committee prior to the flood and storm season.

Binh Dinh is one province using a combination of 'traditional' and CBDRM approaches and has been receiving significant support from international NGOs for CBDRM projects since 2000. Thus, CBDRM has had an influence in the CFSC's planning process, leading the provincial authorities to adapt their disaster risk management planning process. Before 2005, Binh Dinh used to wait to receive its annual plan from the central government; the provincial CFSC would execute this plan and base commune plans on it, while factoring in the on the ground situation. Following this, the commune would disseminate the plan to village authorities to implement. There was little or no room for community participation or stakeholder engagement in this process, which created difficulties for implementers (CFSC staff). In addition, due to the one-way process, activities did not really fit the situation and needs of individual areas or their communities.

Since 2005, by taking advantage of the CBDRM approach, disaster risk management planning in Binh Dinh has changed. It is now as follows:

i. The provincial CFSC prepares the annual report on the previous season's flood and storm period as well as the plans for the coming season and distributes them to the district CFSCs. These distribute them to the commune CFSCs, who in turn share them with the villages.

ii. Village authorities then organize a village meeting for local residents to review the previous flood and storm season, share lessons learnt, and discuss the plan for the upcoming season. This is conducted with facilitation and guidance from the commune People's Committee and CFSC. Ideas are recorded by the village leadership and CFSC.

iii. The commune CFSC produces a commune plan by synthesizing the ideas from each village. This plan is then presented to all stakeholders (including community members) for further feedback and comments. It is then sent to the commune's chairman for approval. Once approved, the plan is submitted to the district People's Committee.

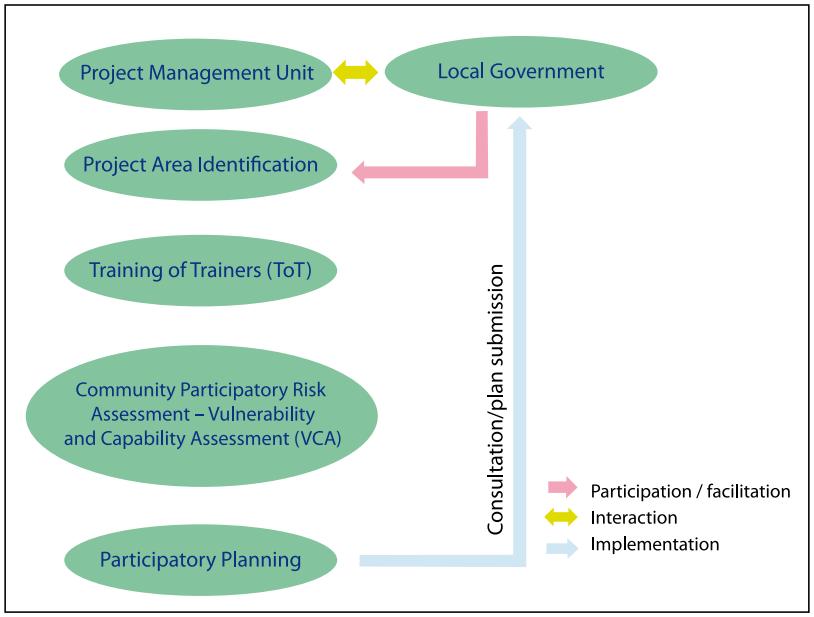
iv. The district CFSC reviews all communal disaster risk management plans and prepares a draft district disaster risk management plan. This draft is presented to representatives from communes, wards and district divisions for comments and feedback. The revised plan is then approved by the district People's Committee and sent to the provincial CFSC.

v. The provincial CFSC synthesizes the districts' plans with reference to the national disaster risk management plan. In case of any significant differences or conflict between the provincial plan and the national plan, the provincial plan and related districts' plans are adjusted.

[13] Ibid.

[14] Committee for Flood and Storm Control of Binh Dinh. 2009, *Synthesis Report on Flood and Storm Control of Binh Dinh Province.*

Figure 15 : CBDRM planning process in Binh Dinh province



The Norwegian Red Cross CBDRM project

With funding from international NGOs including CECI and CARE, Binh Dinh province has gained considerable experience with CBDRM projects. Currently, a Norwegian Red Cross CBDRM project is being implemented in Binh Dinh through the provincial Red Cross. The project aims to strengthen the capacity of villages and communes and their disaster management institutions to help them become more responsive to the short- and long-term needs of the most vulnerable villages. This will be achieved through participatory risk assessment and identification, and prioritization and implementation of risk reduction measures. The project also supports local government efforts in sustainable development, by helping reduce human, economic, and financial losses caused by natural disasters in the target communes. The project officially started in August 2010, and covers three communes: An My in Hoai An district, Phuoc Thang in Tuy Phuoc district, and Cat Chanh in Phu Cat district.

The three sites were selected during the designing/preparation phase. In early 2010, representatives of the Norwegian Red Cross, the Binh Dinh Red Cross and the Binh Dinh People's Committee met to discuss the project sites and structure as well as disaster risk management in the province. They discussed the capacity of local people to cope with disasters, the local disaster risk management network and resources, and the experiences of the province with respect to disaster risk management. They then chose the three project sites, based on the following criteria as outlined in the Project Appraisal Document:

- The commune should face a demonstrable high level of risk to a potential hazard and/or have a recorded history of susceptibility to disasters;
- Along with vulnerability to natural hazards, the level of poverty and the potential adverse socio-economic impacts of disasters should be considered as important secondary indicators;
- The area should be one where disaster mitigation measures have the greatest potential impact;
- The commune should i) have a clear relationship with either a structural or non-structural sub-project selected through a geographical and/or causal linkage, and/or ii) it should form part of a logical grouping of communes, perhaps a whole catchment area if appropriate; and
- A consultation was done to verify that the commune has a demonstrated commitment to the aims and activities of the project.

After compiling a shortlist of communes, the Norwegian Red Cross, Binh Dinh People's Committee and Red Cross organized field trips to gather more information. Information from observations, meetings with households, and village group discussions then facilitated the selection of three sites for pilot activities over the project's first year. After identifying the project sites, the organizational structure of the project was determined. A project management/ steering unit was then established from the provincial to commune levels.

Figure 16 : Organizational structure of the Norwegian Red Cross CBDRM project

Level	Structure	Role
Province Project Management Unit	• Headed by vice-chairman of provincial People's Committee • Technical support by Red Cross in collaboration with CFSC • Other members: representatives of districts (district People Committee's vice-chairman) • Department of Agriculture and Rural Development (vice-head of CFSC)	• Manages project at the provincial level • Coordinates project activities at the provincial level • Responsible for discussion with Norwegian Red Cross in annual project planning
District Project Management Unit	• Headed by vice-chairman of district People's Committee • Technical support by Red Cross in collaboration with CFSC • Other members: representatives of commune (commune People's Committee vice-chairman) • Department of Agriculture and Rural Development (vice-head of CFSC)	• Manages project at the district level • Coordinates project activities at the district level
Commune (Project Management Unit)	• Headed by chairman or vice-chairman of commune People's Committee • Technical support by Red Cross in collaboration with CFSC • Other members: representatives of relevant commune departments: Department of Agriculture and Rural Development (vice-head of CFSC); Women's Union; Youth Union; Veterans' Union; school	• Coordinates project activities at the commune and village level

The next step was to collect detailed information on the project sites. This was conducted between February and March 2010 via the Binh Dinh Red Cross in collaboration with the Norwegian Red Cross.

Next, the Norwegian Red Cross, in collaboration with the national Red Cross, organized a 'training of the trainers' on disaster risk management in Binh Dinh. The training session was seen as a vital step in successfully conducting future activities. The trainers came from the national Red Cross, and participants came from the provincial Red Cross and the CFSC. The training focused on how to conduct vulnerability and capacity assessments, communicate with the community, and build capacity among local staff in disaster risk management.

Vulnerability and capacity assessment

After the training, a vulnerability and capacity assessment team was formed. Led by Norwegian Red Cross and provincial Red Cross staff, the group undertook the assessment, with support from the project steering unit and relevant commune staff to ensure the participation of community members. The process involved several steps:

i. Collecting general information from local authorities;
ii. Discussions with communities;
iii. Conducting village meetings;
iv. In-depth interviews with households;
v. Group discussion;
vi. Data analysis;
vii. Information verification;
viii. Disaster risk management planning and vulnerability and capacity assessment report completion; and
ix. Information sharing with the local People's Committee (district workshop).

After the district workshop, the assessment team revised the report and plans, then submitted them to the district People's Committee for approval. The Norwegian Red Cross and Binh Dinh provincial Red Cross synthesized the reports and plans of the three districts to produce the provincial plan. It took around five months (from late March to August 2010) to receive approval for the project's plan from the district, provincial People's Committee and the Norwegian Red Cross.

Based on the team's findings, during the first year the Norwegian Red Cross CBDRM project in Binh Dinh focused on raising the awareness of communities in natural disaster preparedness, response and recovery; building capacity among local authorities in community-based natural disaster risk planning and community engagement; and providing equipment for the project and to improve the livelihoods of villagers.

Participation

The CBDRM process in Binh Dinh successfully mobilized large-scale community participation in the disaster risk management planning process. CBDRM allows communities to be much more active in the disaster risk management process and to identify hazards, risks and solutions. In effect, through household interviews and focus group discussions, the voice of vulnerable groups is heard. In addition, by participating in their project activities, local people gain a greater understanding of disaster risk management and are better prepared for disasters. These activities also improve local people's capacity to protect physical assets; this was found to be one of the elements contributing to the project's success.

The process also gave an equal voice to women, and even allowed children to take part in disaster mitigation planning at the village and community levels. In addition, through the use of group discussions, the project paid particular attention to vulnerable groups such as women, children, disabled people, the elderly and people with HIV/AIDS. This helped build their capacity to protect themselves from future disasters. Unity and mutual support within villages and communities were found to be key factors in self-protection and played a vital role in the vulnerability assessment and in defining the disaster risk management-related capacity of individuals, households, and the community. They also helped reveal more efficient solutions to disaster prevention and responses that were not dependent on external support.

However, there are some points that need further consideration:

- It takes considerable time and effort to encourage and promote the participation of authorities and local residents in CBDRM, and mobilizing vulnerable groups proved to be difficult. The villagers and/or communities did not consider themselves to have a strong enough voice and were thus not very invested in the process.
- The integration of issues related to gender, children, vulnerable groups and disabled people in CBDRM has not been easy, as consideration of these issues is new for the community. It is difficult to change traditional ways of thinking and behaviour in a short period of time. Overall, awareness of disaster preparedness is low, and disaster preparedness is not considered a priority. Changing the behaviour of the community and strengthening its capacity will require more external support over the long term.
- Villagers and communities who are especially vulnerable to disasters often spend much of their time earning a living, which makes it hard for them to participate in these processes. A mechanism to provide financial support is therefore required. However, if participation is contingent on being given money, the project is unlikely to be sustainable.
- There is a fixed budget allocated for mobilizing the participation of villagers in disaster risk management planning. This could be a limitation for replicating the project in other areas. However, trainers and local project leaders could contribute to programmes in other locations.

Discussion

Although it is an on-going project, the Norwegian Red Cross's CBDRM has already achieved a certain level of success. It has encouraged community participation, and village CFSC and commune representatives also took part in the whole process. This is very different from traditional disaster risk management planning, in which each group (community representatives included) participates sequentially. CBDRM definitely paid more attention to the community's voice, concerns and capabilities, and supported improving people's capacity to deal with disasters. As a result, villagers have been realizing the benefits of taking part in this project.

The project also benefited from a good set of partners – the Binh Dinh Red Cross and the Binh Dinh People's Committee. These local partners have provided strong support to the project. All activities have been planned with the support and cooperation of government offices and agencies, especially the Red Cross and CFSC. The provincial Red Cross, through its network at the district, commune and village levels, supported the process of planning and improved the disaster risk management capacity of local staff. The local People's Committees, CFSC, Education Department, Commission of Population, Family and Children, and Women's Union have also lent their support to project activities. Binh Dinh's authorities were open to the new approach and methodologies, appreciating that these adaptable approaches would support the community. Advances in the CBDRM approach, tools and methodologies therefore provide support for future political tasks. This project has been successful in capacity-building across Binh Dinh communities; for example, a child care centre that teaches swimming and flood safety was set up. The project thus seems to have achieved an appropriate balance between traditional disaster risk management planning and the CBDRM process, and has been well-received.

> *'The Norwegian Red Cross project has helped us in saving our time in yearly disaster risk management planning now. We used to have to sit with the heads of villages to guide them to make plans for their villages. This work took lots of our time. Some of them could not identify hazards or risks in their village areas, so we had to do their work. Now, before making the yearly disaster risk management plan for each commune, we ask the village heads to prepare their villages' plans. They organize a village meeting to collect ideas from villagers, using a template to develop a village plan, and send it to us.'*
>
> *– Nguyen Van An, head of Committee for Flood and Storm Control, Phuoc Thang commune*

Through meetings, radio, TV, posters and direct communication with volunteers, the project has also increased the awareness of local communities concerning disaster preparedness, responses to disasters and other related issues.

> *'Thanks to useful guidance of Red Cross staff, I know how and what I should prepare for my family before a flood. Before, I did not care about medicine and drinking water being stored for when a flood comes. I also shared my understanding with other members of the village Women's Union and also supported some of them during the flood.'*
>
> *– Vo Thi Ba, member of Women's Union, Cat Chanh commune*

Unexpected outcomes

As CBDRM is a process and not a single activity, it requires time to evaluate its impacts. Therefore, it is still too early to fully evaluate the project. However, some issues or concerns that may arise include:

- **Limited resources:** Currently, the project provides the resources to support community participation. These resources are limited, however, as are the time and capacity of staff. Therefore, it may be difficult to replicate the project in other areas or expand the use of CBDRM.

- **Uncertainty about the future:** Ideally, the project should last between three and four years for the activities to be developed thoroughly and to provide more time for both training and the impact assessment. Yet the local governments (at the commune level) are unaware of plans for the next few years, or of what activities the project will support. This is likely to affect the ownership and effectiveness of the project, as well as the level of participation from both local governments and communities. More participation by local authorities in the project planning stage may prevent such unexpected impacts and help guarantee the longer-term sustainability of the project.
- **Unsustainable incentives:** Currently, local authorities participate in CBDRM on a part-time basis. Their motivation to take part is due to the benefits they receive under the project. This raises concerns about the long-term sustainability of the project.

Study: The flood protected residential cluster programme in An Giang province

An Giang province is in the upper part of Vietnam's Mekong Delta, bordered by Cambodia and approximately 120 km from Can Tho City (the centre of the Mekong Delta). An Giang covers an area of 3,537 km^2 of which 2,979 km^2 is agricultural land. The population of An Giang is 2,273,150, with 72 per cent living in rural areas; the average population density is 643 inhabitants per km^2.[15] In 2009, the province's GDP was VND 37,710,810 million (about US$1,886 million), of which VND 11,924,222 million (US$596 million) came from the agriculture, forestry and fishery sectors, VND 4,341,033 million (US$217 million) from the industrial and construction sectors, and VND 21,436,555 million (US$1,072 million) from the services sector. An Giang is one of the leading rice and catfish production centres in the Mekong Delta.

Photo Credit: creativecommons | Magalie L'Abb

As an upstream province, An Giang is prone to annual monsoon flooding. This typically starts in August and ends in November. Normal floods enrich the soil, reduce rice pests, provide abundant aquatic resources, increase crop and aquaculture productivity, and assist the eco-tourism sector. However, large-scale floods are unpredictable and can cause damage to infrastructure, property, agricultural production, the environment, and human life. The damage caused by flooding is becoming increasingly severe, and the poor, women and children are especially vulnerable.

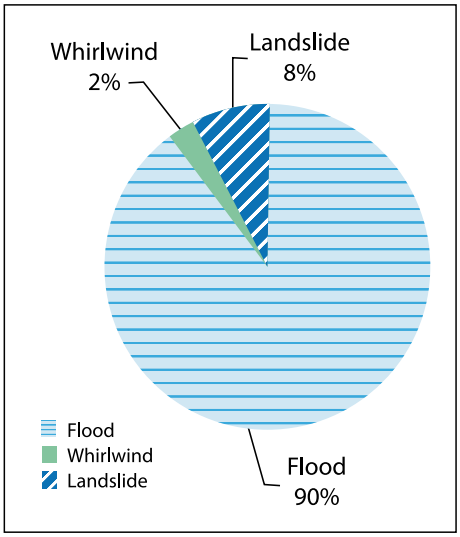
After two devastating floods in 2000 and 2001 (described in more detail below), flood prevention, control and mitigation became a priority of the central government, which encouraged the An Giang authorities to focus on *'living with floods'.* Under this philosophy, the authorities aimed to minimize damages from floods and improve the livelihoods of people living in flood-prone areas. An Giang has a long history of *'living with floods'.*

Natural disasters in An Giang province

The Central Committee for Flood and Storm Control and Rescue (CCFSCR) has recorded data on natural disasters in An Giang province. These are dominated by floods, tornados, thunderstorms and landslides. Figure 18 shows how much damage, in terms of economic loss, these events cause each year. As An Giang province is located upstream of both the Mekong and Bassac rivers, the province is considered to be most at risk from flooding (which accounts for 90 per cent of the damage caused by natural disasters each year). Damages caused by landslides and tornados are less than 8 and 2 per cent, respectively.

[15] According to Census data for 2009.

Figure 17 : Share of damage caused by different disaster types in An Giang (2000-2010)

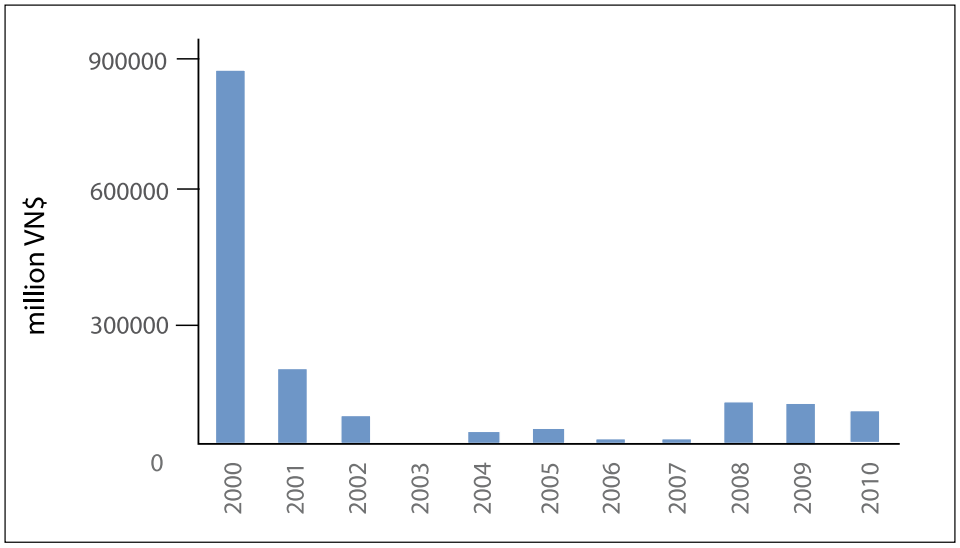


Source: Command Committee for Flood and Storm Control and Rescue annual reports, based on CCFSCR direct surveys

Floods in the Mekong Delta of Vietnam, and particularly in An Giang province, are usually caused by the Mekong River (Sanh and Can, 2008). During the flood season, water flows up the Tonle Sap from the Mekong main stream into the Great Lake. When the water level decreases in the main channel, water flows out of the Tonle Sap into the Mekong. This seasonal storage of water acts as a natural regulator of water flow downstream of the Tonle Sap, and causes seasonal flooding in the Vietnamese Mekong Delta. Flooding in An Giang occurs during the rainy season and peaks around September or October. The flood water arrives slowly, but lasts for a long time. This is in contrast to the floods in the northern and central parts of Vietnam, where water rises and recedes quite quickly. Typically, about 60 to 70 per cent of An Giang province is inundated for three to six months at a depth of between 0.5 and 4.0 metres. The floods bring the water and nutrients necessary to support local livelihoods. However, they also cause severe damage to agricultural production, settlements, infrastructure, transportation, education and other services.

In 2000, a major flood caused an estimated VND 842,188 million (around US$42 million) in total damages, including 83 billion VND (US$4.15 million) to agriculture; 151,867 houses were also damaged. In 2001, this was followed by a flood which caused 170,925 million VND (around US$8.5 million of damage), including 14 billion VND (US$700,000) to agriculture; 32,951 houses were harmed. Figure 19 shows annual damages over the last decade.

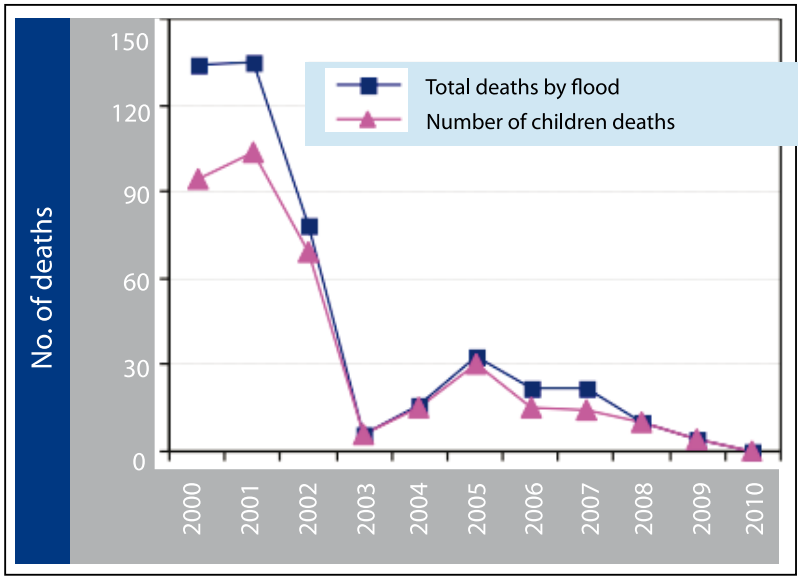
Figure 18 : Economic damage caused by floods in An Giang (2000-2010)



Source: Command Committee for Flood and Storm Control and Rescue annual reports, based on CCFSCR direct surveys

The floods disproportionately affected poor households, children and old people who were living in structurally weak housing in high-risk flood areas. The floods in 2000 and 2001 were especially devastating, with 134 deaths (including 94 children) in 2000 and 135 deaths (including 104 children) in 2001. Figure 20 shows the death toll from flooding in each year.

Figure 19 : Number of people killed by floods in An Giang (2000-2010)



Source: Command Committee for Flood and Storm Control and Rescue, based on annual reports of CCFSCR and direct surveys

The flood protected residential clusters programme

In 2000, the Vietnamese government approved a large-scale *flood protected residential clusters in the Mekong delta of Vietnam* programme to reduce the impacts of flooding on local people (with particular emphasis on vulnerable groups). This programme was coordinated by the Ministry of Construction and its line agencies at the local level. The first phase took place from 2001 to 2005, and was then extended to 2007. The main objectives were to stabilize livelihoods and promote the sustainable improvement of people's lives. This was to be achieved by building 1,043 residential clusters for 200,000 people, of whom 185,000 lived in An Giang, Tien Giang, Kien Giang, Hau Giang, Dong Thap, Vinh Long, Can Tho and Long An, areas frequently affected by floods. In 2008, the Prime Minister approved the second phase of the programme for the period 2008-2010, with a budget of VND 2,387 billion (around US$120 million). The programme has had positive impacts: for example, it has reduced the number of deaths and alleviated risks to agricultural production. However, it also has its limitations in terms of providing the necessary social services for maintaining and improving local livelihoods.

Photo Credit: creativecommons | Adrienne Mountain

Both national and sub-national government entities have devised and applied strategies to manage, control and mitigate natural disasters, especially floods, in the Mekong Delta. These have covered everything from forecasting and warning to response, search and rescue, recovery and rehabilitation. According to the CCFSCR, the measures for flood prevention, control and mitigation in the Mekong Delta introduced since 2000 are as follows.

Living with floods

Living with floods is an important strategy applied to minimize the negative impacts of floods and take advantage of opportunities for sustainable development. The concept originated in An Giang, where people have been living with floods and adapting to them for a considerable period of time. Important components of this strategy were:

- Constructing residential clusters (or lines) and embankment dykes in order to avoid floods and produce safe and stable housing in the most flood-prone areas;
- Creating a child care centre providing training for children on flood safety such as swimming;
- Upgrading schools, clinics and other public structures;
- Enhancing public awareness and knowledge of flood prevention and control measures;
- Increasing reserve funds, food storage facilities, and access to medicine and water-borne disease prevention at the village level;
- Upgrading facilities and improving methods of flood forecasting;
- Upgrading facilities and the community's capacity to improve their security;
- Controlling agricultural losses during the flood period by improving crop calendars, thus protecting livelihoods; and
- Protecting ecosystems in flood-prone areas.

Four on the spot principles

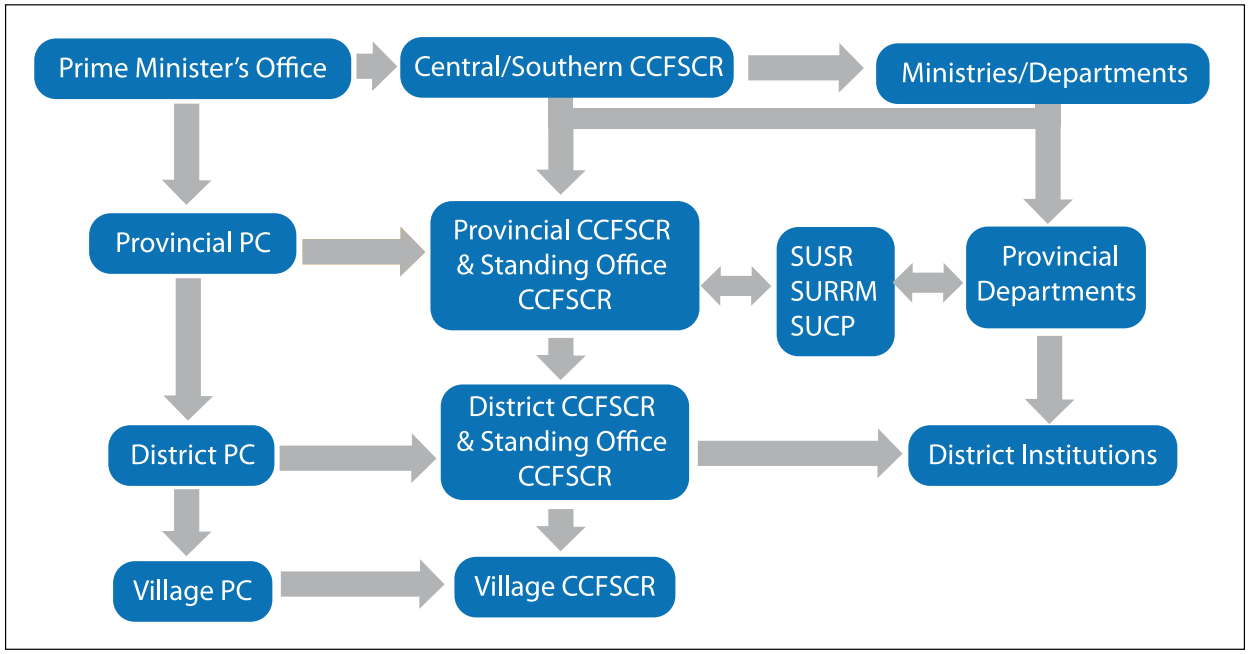
The *four on the spot principles* address on-site command, means, forces and logistics. This concept decentralizes the decision-making process to local authorities and communities and builds public awareness of flood responses and control (Sanh and Can, 2008). As a result, local authorities (commune and hamlet levels and their associated communities) are empowered to make their own decisions and use their own resources to help prevent and control floods and reduce damages, particularly in emergency scenarios. *Four on the spot* is one of several important flood recovery and mitigation strategies, along with improving methods for the evaluation of flood damage; increasing reserve funds, food and medicine; and effective organization of agricultural production after flooding. General measures for planning and implementation are classified under structural and non-structural measures. Structural measures relate to the construction of dykes, canals, housing, and residential clusters, while non-structural measures relate to activities such as the adjustment of crop calendars, provision of new crop varieties, the application of new technologies, teaching children to swim, investment in flood early warning systems, and so forth.

Photo Credit: creativecommons | Laura Billings

Organizational structure

The institution most responsible for disaster risk management is the provincial Central Committee for Flood and Storm Control and Rescue (CCFSCR). The CCFSCR's functions extend to all levels of the province, including district and village levels. At the provincial and district levels, the CCFSCR consists of many departments and institutions, and it is headed by the Vice Chairman of the People's Committee for the province. The vice-head of the CCFSCR is the director of the Department of Agricultural and Rural Development. The committee's other members are directors (chiefs) or vice-directors of various agencies related to flood and storm control. As of 2010, the CCFSCR of An Giang province included 33 members from different departments and institutions. At the provincial level, the People's Committee leads the CCFSCR and develops its regulations, functions and responsibilities. The committee is also organized and coordinated horizontally and vertically, as shown in Figure 21.

Figure 20 : Organizational structure of the Central Committee for Flood and Storm Control and Rescue



Note: CCFSCR: Central Committee for Flood and Storm Control and Rescue; PC: People's Committee; SUSR: sub-unit for search and rescue; SURRM: sub-unit for relief, recovery and mitigation; SUCP: sub-unit for coordination and planning.

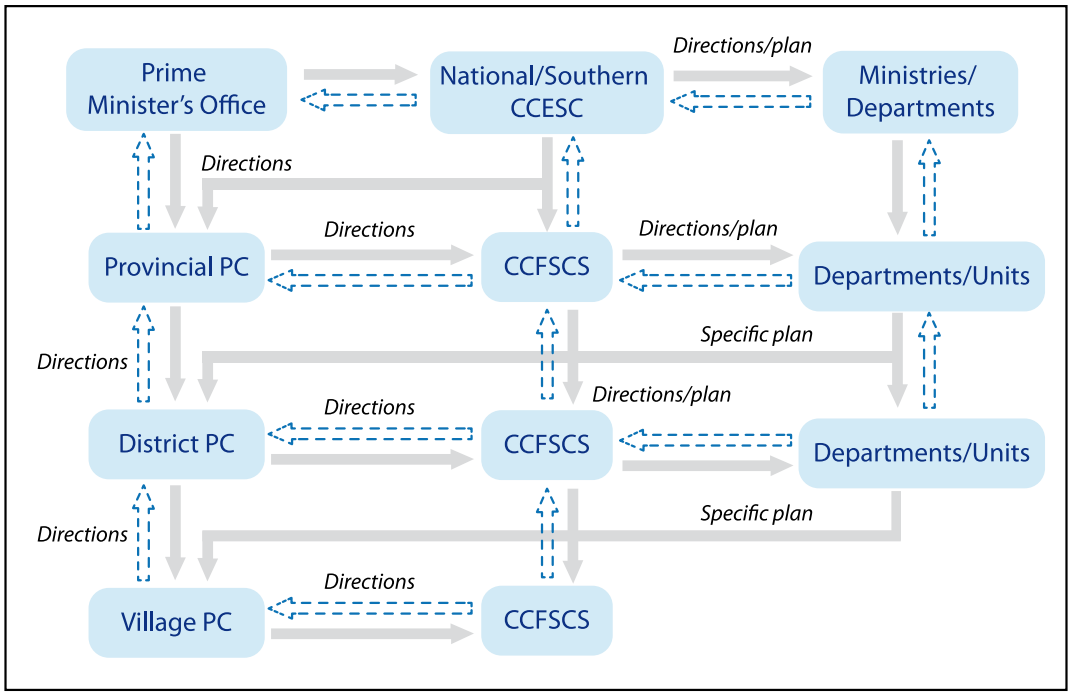
In terms of planning and coordination, the Department of Agriculture and Rural Development is the leading organization; the Department of Water Resources Management, which is part of Department of Agriculture and Rural Development, is the CCFSCR's standing office. The committee has three sub-units: the sub-unit for search and rescue (SUSR), including several institutions such as the military, police and Red Cross; the sub-unit for relief, recovery and mitigation (SURRM), including mass organizations, the Fatherland Front Committee and the Department of Labour, Invalids and Social Affairs; and the sub-unit for coordination and planning (SUCP), including the Department of Agriculture and Rural Development, Department of Water Resources Management, and Hydrometeorology. The organization and coordination of CCFSCR at the district level is the same as that at the provincial level.

Planning, decision-making and participation

As noted before, at the national level, the Prime Minister's office plays an extremely important role in planning and implementing disaster risk management. This is particularly true for flood and storm control and mitigation: it directs the provincial People's Committee, the national CCFSCR, the Southern Central CCFSCR and other relevant ministries and/or departments. At the provincial level, when the People's Committee receives directives from the Prime Minister's office, or instructions and official correspondence from national CCFSCR and the relevant ministries and departments, it directs them to the district People's Committees, and the provincial CCFSCR and its member line departments.

The provincial CCFSCR prepares a general plan based on the national plan and instructions, the directions of the provincial People's Committee, and the evaluation reports and plans of line departments. This plan is then used by line departments and the district People's Committees. The member departments interpret and develop the general instructions and plans contained in the provincial plan into more specific plans regarding their own particular responsibilities. Planning and implementation at the district level follow the same pattern. The People's Committee and CCFSCR at the village level implement instructions and plans from the district level.

Figure 21 : The planning and reporting process



The head of the CCFSCR, its sub-units and relevant departments can make decisions through planning meetings. The planning and implementing process of an individual department depends on its functions, responsibilities and needs. In general, most institutions and departments are involved in the planning, decision-making, and implementation of plans based on the context of their organizations. Large organizations such as the Women's Union and the Farmers Association also participated in these activities. However, grassroots-level organizations did not. Disaster risk management planning is conducted annually, prior to flooding (during June). The importance and focus of the planning depends upon the current or past severity of flooding. For instance, the planning process for flood and storm prevention, control and rescue in 2010 and 2011 at An Giang Province included several steps:

1. Provide general hydrometeorology information and a flood forecast. The national and southern CCFSCRs provide a flood and storm forecast using information concerning the previous year's flooding along the Mekong and Bassac Rivers, and forecast any early floods (June and July) that may occur along the Mekong River.

2. Objectives of the plan include the protection of lives (particularly children) and property during the flooding season; the protection of rice production and infrastructure; and maintenance of health care, education, transportation and security during the flood season. Additional objectives are to enhance the capacity of staff conducting flood and storm control and rescue activities and to disseminate information and knowledge about flood and storm prevention, mitigation and control to the community.

3. Provide strategies and measures for flood and storm prevention, control and rescue, as well as implement decrees and official correspondence at the national and provincial levels. These measures include three stages:

   - Prior to flooding (stage 1, prior to 15 July in 2010), based on recent flood and other disaster experience, general plans or directions for current flood prevention, control and mitigation are made;
   - During flooding (stage 2, from 15 July to 31 October in 2010), focus on protecting people and their property, and organizing child care. Planning in stage 2 is based on flood predictions from the Centre of Hydro-Meteorological Forecasting. The four on the spot principles are then applied; and
   - After flooding (stage 3, from 1 November to 31 December in 2010), focus on flood response, relief, and recovery activities, such as repairing infrastructure and preparing future agricultural production.

4. Allocate flood and storm prevention, control and rescue tasks to various districts and departments.

5. Organize and implement the plan.

Cross-level interaction and coordination

Coordination is conducted both vertically (from the national to the province, district and village levels) and horizontally (the People's Committee, the CCFSCR and the relevant departments and units). The provincial CCFSCR coordinates all activities and produces annual and periodic plans. Often, the executive vice head of the provincial CCFSCR directs and monitors activities that are assigned to provincial and district departments/units. The CCFSCR standing office is in charge of administrative work and consultancy.

With regard to the plans and tasks of the CCFSCR's sub-units, the heads of the sub-units make the decisions and oversee coordination. With regard to the specific plans and tasks of individual departments, the heads of these departments then make the decisions and coordinate their approved activities. The *four on the spot principles* are utilized, and heads of departments can therefore make urgent decisions based on these principles (on-site decision, manpower, facilities and experiences) and report back to the upper level. This makes the planning and implementation of plans at the local level much more flexible and increases ability to cope with emergencies. Local authorities at the village or hamlet levels and communities can make their own decisions and use their own resources to help prevent or control flooding. This leads to more efficient and successful disaster risk management, especially in emergencies.

The flood protected residential cluster programme in An Giang province

In 1996, the Vietnamese government developed a policy of constructing residential clusters in less flood-prone areas of the Mekong Delta. To implement this policy, the government enforced two programmes: 1) an irrigation, transportation and residential clusters programme (Decree No. 99/1996/TTg), and 2) a programme to provide loans for poor households to construct less flood-prone housing (Decree No. 256/1996/TTg). From 1996 to 2000, the An Giang provincial government constructed 89 flood protected residential clusters covering an area of 234 ha and arranged for 8,256 households to settle here. However, the programmes were not as effective as had been hoped, and after five years only 56 per cent of the farmers who were meant to live in those clusters had settled there (see Table 4). Many poor households received loans, but used them for other purposes (Adam Fforde and Associates Pty Ltd., 2003).

The major flood in 2000 caused serious damage within the Mekong Delta and exposed the limitations of previous programmes. This led the government to approve a new programme of investment in flood protected residential clusters in the Mekong Delta for the period of 2001 to 2005 (Decree No. 1548/2001/QĐ-TTg). This programme was the continuation of strategies from 1996-2001, but incorporated new investments and management approaches. The main objective of the 2001-2005 programme was to focus on stabilizing the livelihoods of local communities in flood-prone areas. The government planned to construct 1,043 residential clusters in seven provinces (An Giang, Long An, Tien Giang, Kien Giang, Dong Thap, Vinh Long and Can Tho) with a budget of 3,200 billion VND (US$160 million). Of this, 190 billion VND (US$9.5 million) was invested in An Giang in 2002 for the construction of 65 residential clusters. In 2008, the government approved the second phase of the programme for the period 2008 to 2010, in which the budget for An Giang was 406 billion VND (around US$20 million) for the construction of 42 clusters. By the end of 2010, there were 567 households settled in these clusters (see Table 4).

Table 4 : Planned flood protected residential cluster - the case of An Giang Province

Period/ Phase	No. of clusters	Amount of investment (VND billion)	Number of households targeted (planned)	Number of households settled	Remarks
1996-2001	89	-	14,234	8,256	56% of households settled in clusters
Phase 1: 2002-2005	197	667.7	37,830	8,100	21% of households settled in clusters
2002-2007	203	674.1	37,830	29,918	Phase 1 was extended to 2007 (79% of households settled)
Phase 2: 2008-2010	42	406.0	12,172	567	

Source: Annual report of Command Committee for Flood and Storm Control and Rescue of An Giang from 2000-2010, Adam Fforde and Associates Pty Ltd.

Flood protected residential cluster planning was coordinated by the Ministry of Construction at the central level and the Department of Construction at the provincial level. In An Giang, after receiving the plan from government, the provincial People's Committee created Decree No. 226/QĐ-UB.TC concerning the establishment of a steering committee for residential clusters. The Steering Committee for Residential Clusters consists of 23 members, led by the vice-chairman of the provincial People's Committee, and with the director of the Department of Construction as vice-chief. It also includes the chairman or vice-chairman of eleven districts. The Steering Committee for Residential Clusters Standing Office is the Department of Construction.

It is difficult to identify a clear process for the planning of flood-protected residential clusters. In general, planning seems to take a simple, top-down approach. The Ministry of Construction, which coordinates the national Steering Committee for Residential Clusters, takes a very proactive approach. Each year, it sets up a Steering Committee for Residential Clusters with a plan based on the direction and budget approved by the government. The national plan is then disseminated to the provincial People's Committee and provincial Steering Committee for Residential Clusters. Based on the direction of the national plan, the provincial Steering Committee for Residential Clusters then develops a plan for the whole province based on the situation 'on the ground' in combination with the district's plans. The district Steering Committee for Residential Clusters also follows the general provincial plan in order to develop its own plan; the village Steering Committee for Residential Clusters makes its own plan in a similar manner. The provincial People's Committee then approves the Steering Committee for Residential Clusters' plans according to the Department of Construction and Department of Investment and Planning proposal. Figure 23 shows the planning and reporting process in An Giang Province.

Figure 22 : The Steering Committee for Residential Clusters planning and reporting process

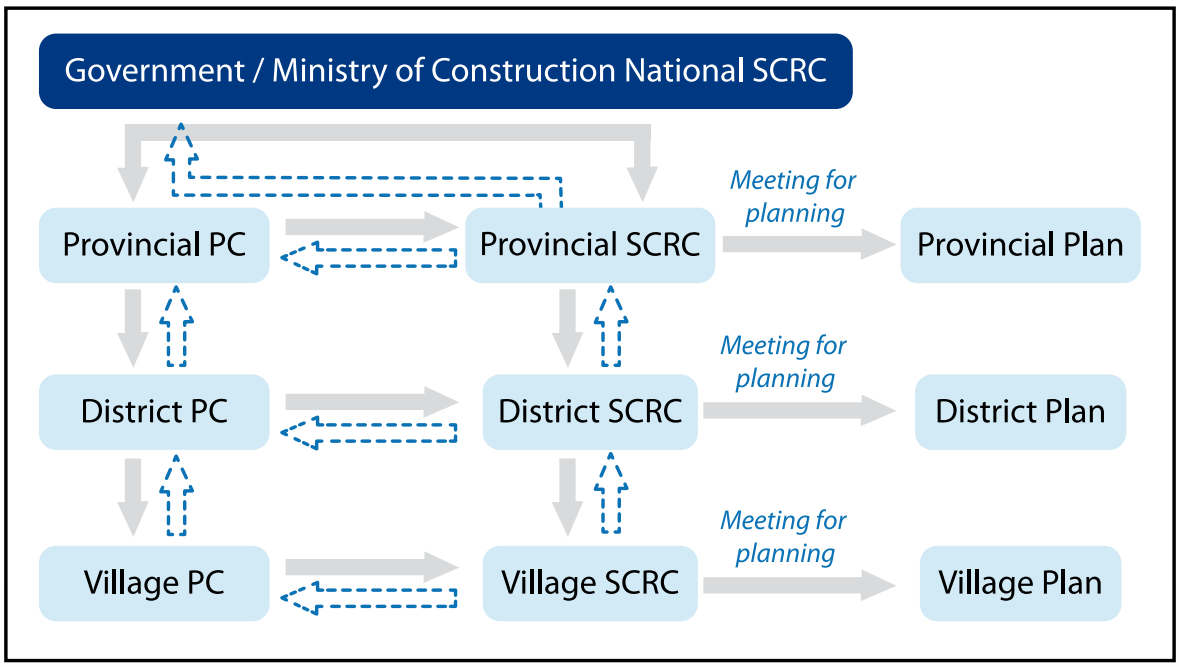
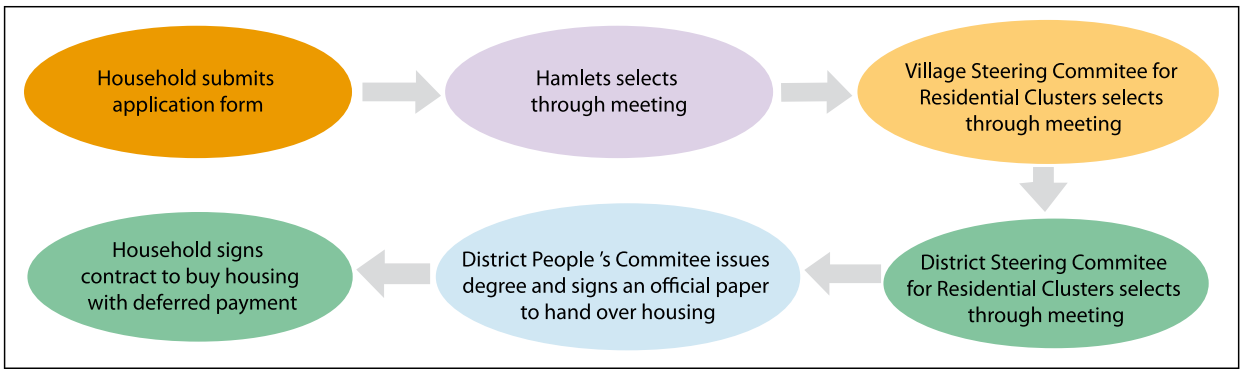


Photo Credit: creativecommons | Bruce Melendy

The resettlement process

Two types of households can resettle in a flood protected residential cluster: those who are currently living in scattered villages in flood-prone areas, and those who own land that could be used for the construction of a residential cluster. The process of resettlement of these two types of households is as follows:

Figure 23 : The resettlement process



When meeting to select households for settling in residential cluster, the steering committees at different levels involve representatives of the party organization, of local authorities, of the People's Council, and of mass organizations.

The participation of these groups helps to ensure fairness in the selection of households. However, it creates some administrative and procedural difficulties. Some households have complained that it took three to six months from submitting an application form to signing a contract to purchase a house under a deferred payment to the bank.

Community participation and cross-level interaction

The community participates in the planning process through meetings held with households to discuss the location and level of investment for the construction of a new residential cluster. The meetings are organized at the direction of the provincial People's Committee, which asks the district People's Committee to direct the village People's Committee to organize a meeting. Still, the role of community and households is limited, there are no community representatives on the project management board, and the management of residential clusters is also top-down.

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As with flood and storm control and rescue planning, coordination for planning residential clusters is both vertical and horizontal. The provincial Steering Committee for Residential Clusters, in which the Department of Construction – the committee's standing office – plays an important role, coordinates all activities and each year produces general and periodic plans. The provincial People's Committee decides all of the activities of the programme. The standing office is in charge of all administrative and consultancy duties under the Steering Committee for Residential Clusters. Participation of community and households in the planning of residential cluster is therefore limited.

As the planning of residential clusters is dominated by a top-down approach, households do not understand why they have been constructed. During phase 1, many households had bad experiences with the programme and moved back to their old homes. The involvement of stakeholders at the district and village levels is mainly concerned with the implementation of the clusters, and less so with the actual planning process. In addition, the Steering Committees for Residential Clusters at all levels tend to focus on meeting targets such as the number of clusters/housing planned, and less on their quality.

Successful and unsuccessful cases of flood protected residential cluster planning

As flood protected residential clusters depend on long-term processes at different levels, it was difficult to identify instances of either successful or unsuccessful planning. In addition, there were no standard criteria for the evaluation of a successful case, other than that the basic conditions of the programme were met (e.g. the number of households settled and the living conditions being satisfactory). According to the provincial CCFSCR and Steering Committee for Residential Clusters, the most successful planning case studies were in Tan Chau and An Phu districts, in the later phases of the programme. The earlier phases were unsuccessful due to lack of experience and a top-down approach to planning. For instance, for the period 2002-2005 (phase 1), the province planned to construct 197 clusters with 37,830 homes, yet only 8,100 households were settled (around 21 per cent of the target). This was thought to be due to the poor condition of the housing and a lack of facilities and other public services. After overcoming some constraints and improving the condition of the housing, providing facilities (such as water and electricity) and other public services (internal roads, schools, clinics and so forth), more people resettled. According to the reports, at the end 2007, there were 203 clusters constructed with 29,918 households resettled (79 per cent of the target). The success of these later stages of the programme (the extended phase) is due to several factors, as outlined below.

Factors leading to successful planning

Individuals interviewed for this project identified the following factors as having contributed to the success of the flood protected residential cluster programme:

- The planning process applied participatory approaches and increased the involvement of the community in the planning process (e.g. through meetings with households to hear their opinions concerning the planning of residential clusters).
- A comprehensive approach to planning, combining both structural and non-structural measures, helped to integrate this programme with other government support programmes providing health insurance, educational support for the poor, low-interest credit and agricultural extension.
- The sharing of information and promotion of the programme throughout the community was important during the planning and implementation stage. In later phases of the programme, the Steering Committee for Residential Clusters paid more attention to this activity.
- The leadership and support of local authorities in planning and implementation is crucial. For instance, in An Giang, the local authority mobilized other resource funds in order to provide clean water for households in residential clusters, one of their basic needs.
- The programme should be integrated with the support programmes of international organizations, especially at the planning stage. For instance, in An Giang, the North Vam Nao Water Control Project[16] was combined with the residential programme. CARE International in Vietnam also supported An Giang to enhance the capacity of local people to respond to floods via the *coping with flood and capacity-building project*.
- The quality of housing and the provision of essential services should be a priority. The experiences during the first phase of planning focused mainly on the construction of housing, with less attention to services. This resulted in few households settling into the new residential clusters. During 2006 to 2007, the provision of electricity, clean water, toilets, internal roads, and other public services overcame this significant constraint.

[16] The North Vam Nao Water Control Project aims to improve the livelihoods of people in North Vam Nao island by constructing flood protection and water control facilities and establishing a sustainable water management system. The island covers 31,000 ha and belongs to Phu Tan and Tan Chau districts. The project purpose is to help alleviate poverty by introducing sustainable water management. A key aspect of the project is the improvement of flood protection of agricultural land, which enables year-round production. This is achieved in two steps: first, the construction of a surrounding dyke around the island, and second, the construction of a number of protected internal compartments within the island and operation of the systems.

Factors that undermined the success of planning

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The interviewees also identified several major factors that led to unsuccessful outcomes in the early stage of the flood protected residential cluster project:

- For the period of 2001-2005, the project focused on structural measures, in particular, providing housing using a 'top-down' approach in planning. The participation of households and communities was limited. In summary, the grassroots level was not adequately involved in the planning and implementation of the project.
- A lack of facilities such as electricity, clean water and adequate roads led to low uptake.
- There was a lack of opportunities and jobs in the new residential areas. For instance, farmers were moved from their traditional fields and were not familiar with their new environment.
- Project plans were not as concerned with non-structural measures, and farmers were not aware of the impact of floods and flood-related damages.

Discussion

As An Giang is one of the Vietnam's most flood-prone provinces, it has implemented many efforts toward flood adaptation and has gained considerable experience in the successful planning of disaster risk management. This study examined several aspects of this planning in order to draw lessons for the planning of climate change adaptation throughout Vietnam and beyond. These included the flood protected residential cluster programme.

Governance and participation in the planning process

Planning for disaster risk management, particularly flood prevention, control and mitigation, should involve the integration of the plans of all relevant departments, not only those of the Central Committee for Flood and Storm Control and Rescue. Collaboration among government agencies that considers the needs and priorities of communities, combined with an inter-disciplinary approach, is vital. To achieve this goal, the provincial CCFSCR, particularly its standing members, should play a coordinating role in evaluating, planning, implementing and monitoring. Enhancing local capacity and encouraging staff to actively participate in flood prevention control mitigation is also encouraged. However, staff training is required for this to occur.

With regard to the planning of flood protected residential clusters, a bottom-up approach is advised with greater inclusion of the grassroots level. During this stage of planning, it is important to share information about the location and other related information with the community and to elicit their opinions and concerns. In addition, the active participation and capacity-building of members of the Committee for Flood and Storm Control (including village and district authorities) in planning is important. Planning should also emphasize quality over quantity.

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Comprehensive measures based on the communities' needs

According to CCFSCR and Committee for Flood and Storm Control officers, the most urgent structural needs and priorities of the communities are housing, roads, dykes, irrigation systems, child care facilities, water, sanitation, schools, health care centres and residential clusters. Although residential cluster construction is one of the solutions proposed by the national and provincial programme, the clusters were lacking in essential infrastructure and services (i.e. electricity, water supply, environmental sanitation, markets, school, and jobs). In addition, most of those people resettled were not accustomed to living in residential clusters. The most urgent non-structural needs and priorities of communities should therefore include job creation, raising of people's awareness to the risks of flooding, and improving the capacity of people to cope with such events. Once again, more attention should be paid to the quality of the project rather than quantity.

Cross-level interaction

The coordination of planning for the CCFSCR and Steering Committee for Residential Clusters should be both vertical (from the national to the province, district and village levels) and horizontal (People's Committee, CCFSR/Steering Committee for Residential Clusters, departments and units). The involvement of grassroots organizations in the planning process is also extremely important, especially in planning and construction of residential clusters. The integration of other support programmes (including government and international programmes) in the planning and implementation stages, through structural and non-structural measures, contributes to the success of the programme.

Monitoring and evaluation

The monitoring and evaluation process remains based upon the reports of the People's Committee or the CCFSCR or Committee for Flood and Storm Control at the village and district level, combined with some on-site inspections. However, these evaluations often lack sufficient details and assessment criteria. They also require greater community and grass-root level participation. Unfortunately, funding for monitoring and evaluation exercises are currently limited.

For more effective monitoring in flood control and mitigation, including the flood protected residential cluster programme, the provincial authorities should consider the plans and reports from other relevant departments and devise appropriate indicators from them. Provincial departments should also cooperate with district People's Committees in conducting monitoring and evaluation exercises. Once again, this requires the active participation of local communities. Finally, provincial Central Committee for Flood and Storm Control and Rescue members, Committee for Flood and Storm Control members and department heads should actively participate in planning, implementation and coordination.

Recommendations

In general, planning and coordination for flood control and mitigation and the flood protected residential cluster programme has been effective over the past 10 years in An Giang province. However, some recommendations for more effective planning and coordination, especially with respect to climate change adaptation, include:

- Planning should be site-specific, more detailed and more participatory.
- The provincial Central Committee for Flood and Storm Control and Rescue's and Committee for Flood and Storm Control's plans should be based on the plans of their departments and priorities and concerns of local communities.
- Plans should also use appropriate and verifiable evaluation criteria.

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Annex 1: List of interviewees for CBRDM study

Interviewee	Position	Department/Address
Bùi Quang Huy	Head of statistics and database unit	Disaster Management Centre
Nguyễn VănLễ	Former vice-head	Department of Dyke Management and Flood Control
Nguyễn Hiệp	Vice-head	The flood and storm prevention management department, DDMFC
Lê Đức Chung	Technical staff	Ministry of Planning and Investment
Nguyễn ĐăngNhật	Programme officer	Oxfam HK
Đàm Văn Lợi	Chief of the secretariat	Binh Dinh Committee for Flood and Storm Control (CFSC)
Võ Thanh Hải	Chairman, head of commune CFSC, member of Project Management Unit Phu Cat district	Cat Chanh commune
ĐinhVăn Loan	Chairman	The Red Cross of Cat Chanh commune
Nguyễn HảoHiệp	Member of club for the elderly	Cat Chanh commune
VõThị Ba	Member of Women's Union	Cat Chanh commune
Nguyễn VănThành	Member of Veteran Union	Cat Chanh commune
Nguyễn Văn An	People's Committee Chairman, head of commune CFSC, Head of Project Management Unit	Phuoc Thang commune
VõĐìnhTân	Land officer	Phuoc Thang commune
ĐặngTuấnToàn	Communicator	Phuoc Thang commune
LươngVăn Thu	Red Cross staff	Phuoc Thang commune
Mai TăngHào	Staff responsible for media	Phuoc Thang commune
Nguyễn ThịNgãi	Volunteer	Phuoc Thang commune
Nguyễn ThịMẫn	Chairman of Women's Union	Phuoc Thang commune
Nguyễn Thị Thanh Huệ	Vice head of primary school	Phuoc Thang commune
Nguyễn Đình Huệ	People's Committee Chairman	Tuy Phuoc district

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