

Chapter 18

Going along the river by the bend; entering the village by the country: A spatial planning perspective to enhance community-based natural resource management in Cambodia

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This paper suggests that new decentralized and de-concentration reforms, which set out a framework to bring important governance functions to the sub-national level, have opened new spaces to explore complementary approaches for environmental governance. Using the Battambang spatial planning framework as a basis, the paper reviews some of the limitation of CBNRM implementation of the last ten years and then focuses on detailing the methodology used to develop and build the framework and how it can be beneficial to current CBNRM. The argument continually defended is that the integration of CBNRM initiatives into a comprehensive spatial planning framework at the provincial level can reinforce local actions and give communities stronger recognition. In a discussion of the three dimensions of the spatial planning framework which include land use planning, territorial policy, and territorial governance, the analysis does not negate the important contribution of local support to rural communities but tries to identify complementary (and not substitutive) approaches that might strengthen communities in their daily livelihood issues.

INTRODUCTION

In the last decade, community-based natural resource management (CBNRM) has been widely acknowledged for its contribution to biodiversity conservation and sustainable livelihoods in Cambodia (Ken Serey, 2005). It has received considerable attention from various actors as a tool to promote sustainable rural development. With substantial strategic support from international and national organizations, community-based approaches have become a mainstream tool for sustainable natural resource management.

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CBNRM has been implemented through approaches focusing primarily on local contexts. Strong emphasis has been placed on the support of local communities, on strengthening local governance, promoting local decision-making, and facilitating the implementation of locally designed natural resource management plans. The equation was: if participation by local people (especially the poor, women, and other marginalized groups) is facilitated, and support is provided locally to management committees to reinforce their skills in the protection and the management of the natural resources base, it will lead to improved security of community land tenure, improvement of resources assets and benefits for the community. Despite a clearer commitment to justice for rural people, this mainstream approach toward CBNRM primarily focused on local management has not been able to support rural development in a fully satisfactory way. Socio-economic diversity in labor allocation strategies between households has not been adequately captured to identify the different modalities by which rural household can play a key role in natural resources management (Diepart, 2008a). The role of rural households has not been explicitly captured in rural development policies as key actors in the natural resources management (IFSR, 2004 and Hoblely, 2007). CBNRM has also failed to be integrated in a wider context of regional development in which natural resources is apprehended in a balanced way with the agricultural development, the demographic change, the industrialization and the increasing role of Markets (Li, 2002).

Yet, other approaches, not primarily focused on the direct support to communities, but that might reinforce them, have largely remained unexplored. New decentralized and de-concentration reforms, which set out a framework to bring important governance functions to the sub-national level, have opened new spaces to explore complementary approaches, in particular in spatial planning. The paper aims to address this vacuum using the Battambang spatial planning framework as a basis.

The paper details the methodology developed to build the provincial spatial planning framework and examines key outputs of this institutional innovation. It discusses how the integration of local natural resource management into a comprehensive spatial planning framework at the provincial level can be beneficial to community-based natural resource management and help

overcome the limitations of current CBNRM approaches in Cambodia. This perspective follows the Khmer proverb "going along the river by the bend; entering the village by the country", which suggests tackling a specific issue by first considering the general rules and norms governing it.

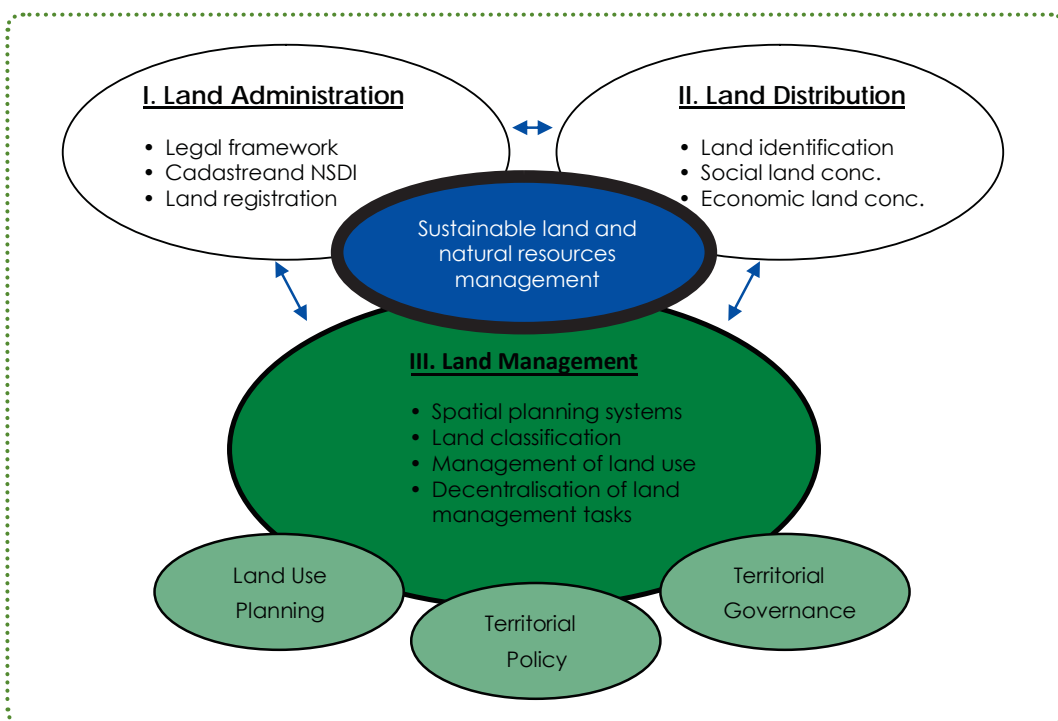
METHODOLOGY

Conceptual Framework

Sustainable land and natural resource management is, among other things, a key driver for sustainable development. As land resources are becoming scarce and used for a variety of reasons, land and its use should be planned in an integrated manner. This would ensure optimal use of the land and a socially just distribution of land-based resources, which carefully considers issues of environmental sustainability and respect for the cultural identity. This holistic goal aims ultimately to create an environment that enhances the quality of people's lives by considering the diversity of their interests and needs (Magel, 2008). This includes the provision of labor opportunities, access to land-based resources for livelihood purposes, access to education and health infrastructure, access to recreation areas, and ease of transportation.

In its draft declaration on Land Policy, the Royal Government of Cambodia (RGC) sets out its overall vision for land management in Cambodia. This vision rests on three inter-dependent components of sustainable land and natural resource management: land administration, land distribution, and land management (Council of Land Policy, 2008). The conceptual framework of the paper rests largely on this vision. Land administration refers to the creation and implementation of the legal framework and the structuring of operation of a sustainable land registration system for both State and private land. It also targets the establishment of a multi-purpose cadastre as a basis for a National Spatial Data Infrastructure (NSDI). The land distribution encompasses the process of land inventory, the establishment of strategies and planning to allocate economic and social land concessions. As figure 1 illustrates, the third component is land management, which implies the design of a spatial planning system at various levels and a unified land classification system as well as the management and control of land use.

Figure 1. Conceptual framework



Focusing on this third component, the provincial spatial planning framework aims to provide provincial authorities with an evidence-based policy for spatially differentiated decision-making. This overall objective entails three important dimensions (figure 1):

- The spatial planning framework is intrinsically a land use planning document seeking to order and regulate the use of land in an efficient way. It rests on the differentiation of provincial territory into land zones characterized by specific interactions between natural and human factors.
- The spatial planning framework is also a territorial policy document as it represents a vision and course of action that the provincial government has adopted and decided to follow to promote sustainable land management. It has been designed following a process involving the drawing together of level and sector specific planning efforts which permits strategic decision-making and provides a synoptic view of resources and commitment (CEMAT, 2007).

- The spatial planning framework is an expression of territorial governance echoed by the Decentralization and Deconcentration (D&D) reforms that envisions the creation of unified administration at provincial and district levels. Provincial councils will be elected by commune councils and will endorse responsibilities in the design and realization of provincial development plans. Among other things, these five-year development plans will include a framework that describes the basic principles for the use and management of land and natural resources (Article 39 of the organic law, RGC, 2008).

Planning and consultation as a process

The planning process has basically followed six main steps occurring over the course of 18 months. Participation and consultation have been critical in the planning process to ensure that a broad level of acceptance and ownership is achieved (Diepart, 2008b). Particular attention was given to rural community voices through extensive field surveys and investigations at village and household level. In depth surveys were conducted at the village and household level in order to capture the functioning of rural communities in different agro-ecological contexts. The contribution of households to land management is evaluated in terms of local knowledge and socio-economic rationality. A typology of rural production systems (at household level) is established to identify the diversity of household labor allocation strategies and their representativeness in the overall population. This is seen as a precondition to recognize the diversity existing within rural communities.

At district and commune levels, local authorities provided key input in the planning process as they have a mandate to coordinate the development efforts made on their territory and linking the local planning processes with private actors whose actions are usually influential to rural families (agricultural products trade, local agri-business). The technical departments were also consulted at provincial and district level. Though D&D reform aims to establish unified administration, it will not wipe out the top-down hierarchical relationships between each ministry and their sub-national agencies. Vertical integration and coherence is compulsory so that technical departments can be involved institutionally and financially in following up the recommendations of the planning framework.

Importantly, the planning process starts with the clarification of the statute and mandates of provincial committees for spatial planning and the terms of reference of the working group responsible for its design. Partnership strategies are also in place at the earliest stage of the process (step 1).

A relevant and accurate summary of geo-referenced information, figures, and facts is first assembled and analyzed. All geo-data are processed and assembled in topic geo-databases: administration, demography, technical and social infrastructures, agro-ecology and land tenure systems. On the basis of a land use change analysis and agro-ecological zoning, detailed field surveys are undertaken to critically examine land management challenges at commune/village and household level (table 1) (step 2).

Table 1: Field Surveys Design

Agro-Ecological Zone	Commune	Number Villages with PRA	Number Households Investigated
Flood Plain (Tonle Sap) zone	Kampong Preah	3	20
Agricultural zone (lower potential)	Thepdey	3	25
Agricultural zone (higher potential)	Takream	3	25
Agro-forest mosaic zone	Kampong Lpeu	2	30
Agro-industrial zone	Takrey	3	24

Source: Focus Group Discussion in Tum Nup Rolok, 9th April, 2007

The stakeholders (territorial authorities at provincial and district level as well as all technical line departments) then try to establish clear visions for the future development of the province. Visions represent a future ideal state of affairs that can or should be pursued within about a 20-year timeframe. Visions define how all stakeholders perceive the future (Schalle, 2005) and represent something which the communities are striving toward (step 3).

At the district level, dynamic analyses are undertaken in order to determine how the current land situation has been changing over time and is likely to change in the future (12 workshops gathering 160 participants). The analysis

leads to the definition of specific zones characterized by specific dynamics and challenges such as deforestation and urban development, etc. Due to their uniqueness, the zones serve as planning units (step 4).

On that basis, strategies are identified for each zone. An overall strategy is proposed for the zone and is broken up into sector strategies that define the contribution of each stakeholder in the collective efforts (step 5).

The sixth step is an on-going process that requires continuous data updates, amendment, and conflict resolution to support the implementation of activities in line with the overall policy proposed by the land management framework (step 6).

Planning Partnerships

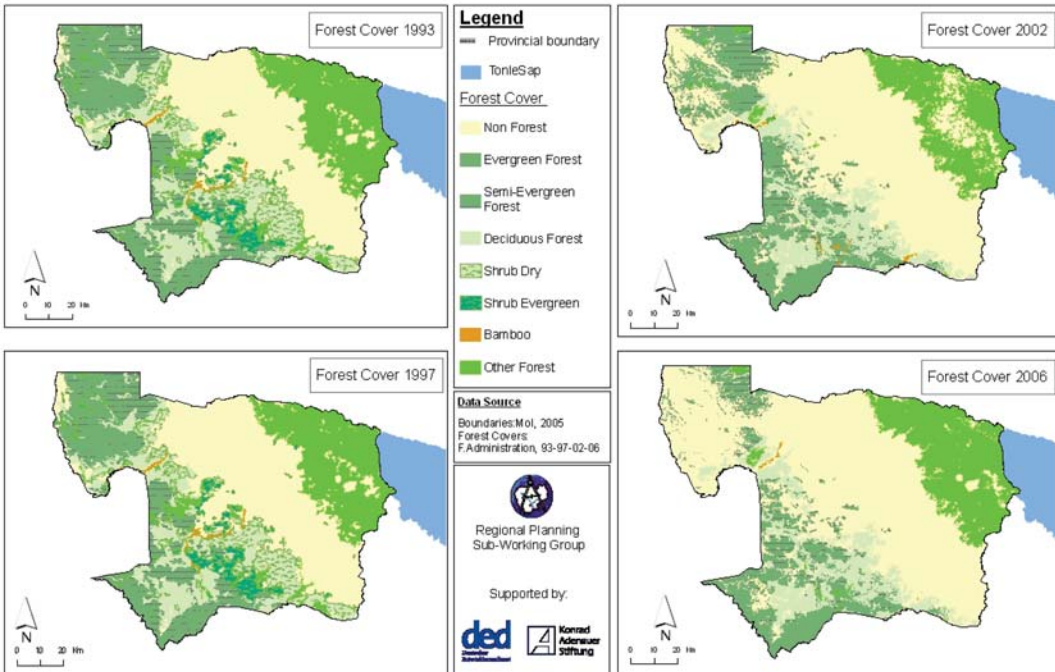
The design of the planning framework was done by a working group hosted by the Provincial Department of Land Management, Urban Planning, Construction and Cadastre under the auspices of the regional planning committee chaired by the provincial governor. The initiative is supported by a number of German cooperation agencies including The Konrad Adenauer Foundation (KAS), a key partner of the RGC in the Decentralization and De-concentration reform process, and the German Development Service (DED). In Battambang province, the particular role of the DED is to provide spatial planning support at various levels (province, district, and commune) (Symann, 2008). The German Technical co-operation (GTZ) has also had a supportive role in acquiring updated satellite imageries and in providing strong institutional support at the ministry level.

RESEARCH FINDINGS AND PLANNING OUTPUTS

Land use Dynamic

The most striking feature of recent land use change in Battambang is the dramatic decrease of forest cover (Figure 2). In a little over 15 years, forest cover has decreased from 65.8 percent to 44.4 percent of the total provincial territory. The clearance has been particularly dramatic in the north-western uplands of the province where virtually all the forest resources have disappeared.

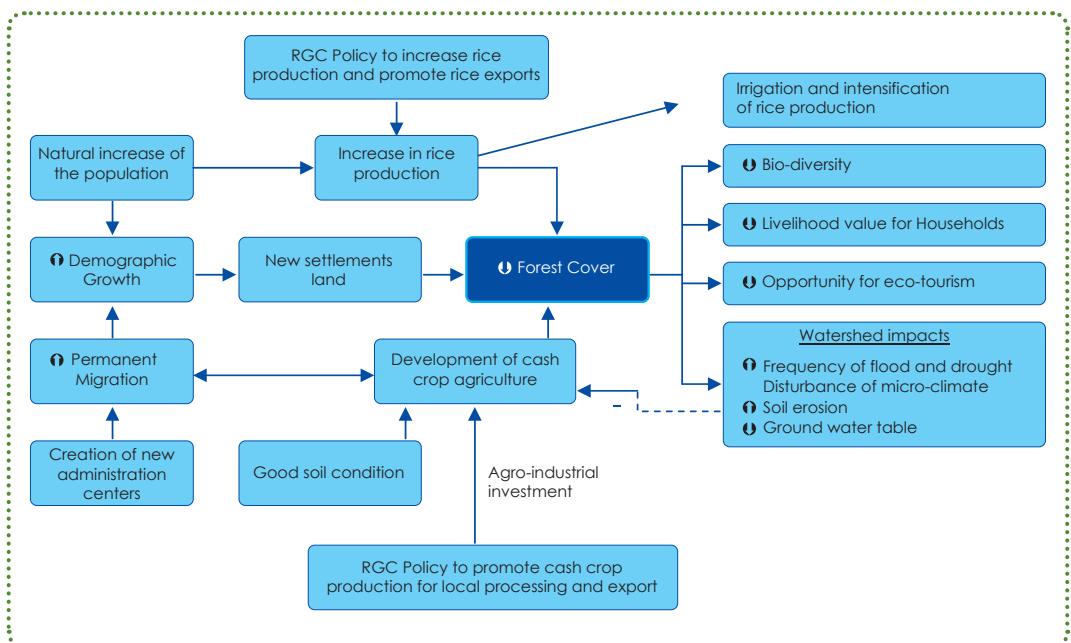
Figure 2. Forest cover change in Battambang province (1993-2006)



An interaction of a number of elements is responsible for the phenomenon (figure 3). Following the peace agreement in the late 1990s, new district administration centers were created in the north-western part of the province (Kamreang, Phnom Preuk and Sampuev Lun districts). Attracted by relatively cheap land prices (if compared with other provinces) and good soil conditions, a considerable number of families started to migrate from all across the country to permanently settle in the area and start new farming activities in the uplands (non-rice agriculture such as cassava, red corn or soybean...). While the annual demographic increase between 1998 and 2007 was 2.8 percent on average for Battambang province, the values reached 19.01 percent, 17.87 percent and 5.89 percent for Kamreang, Phnom Preuk and Sampeuv Lun district respectively (calculation based on Commune Data Base, DoP, 2008). The singular values of demographic increase observed in those districts are clearly the result of permanent migration. This sharp demographic increase has triggered the demand for both settlement and agricultural lands.

In conjunction with this, the RGC and its Ministry of Agriculture, Forestry and Fisheries (MAFF) have started to promote the production of annual and perennial cash crops (mainly red corn, cassava, green gram, sugar cane and rubber) for local processing and export. This policy has enabled national and international investors to establish agro-industries involved in the purchase, storage and processing of these crops. As illustrated by figure 3, the development of intensive upland agriculture still relies largely on human labor; the quick growth in the agricultural sector has in turn reinforced migration to those areas (figure 3). The whole dynamic of settlement expansion and the development of chamcar agriculture have contributed to the decline of forest cover. The figure provides an explanatory framework of deforestation which is identified in the center of the figure (📍 Forest Cover). It differentiates between the causes and consequences of deforestation, respectively on the left and right side of that central box.

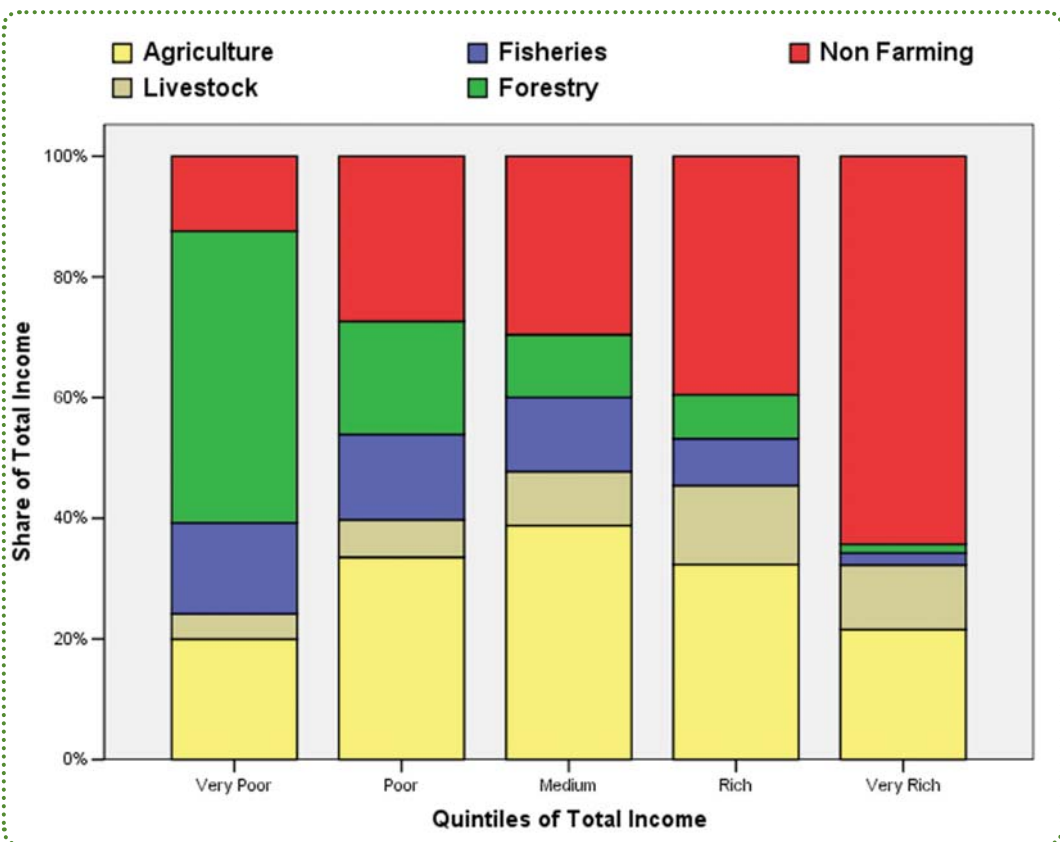
Figure 3. Schematization of land use change dynamics in Battambang (1993–2008)



In terms of land tenure relationships, the forest cover decrease associated with the development of cash-crop upland agriculture is an expression of what is in reality the privatization of public lands and a breakdown for the communal resources management.

In Cambodia, the challenge of increasing rice production at a pace at least consistent with the rate of population growth has been addressed by enlarging the cultivated area. However, nowadays due to the absence of available land, agrarian systems are at a crossroads (Dupuis, 2008). The challenge for the rural population to increase rice production implies intensifying agricultural production by cultivating twice a year on the same plot. This implies improved technical (ie drainage and irrigation) and social control of water. Community-based management, again, has a crucial role to play here.

Figure 4. Income distribution by class of wealth and by item (rural households)

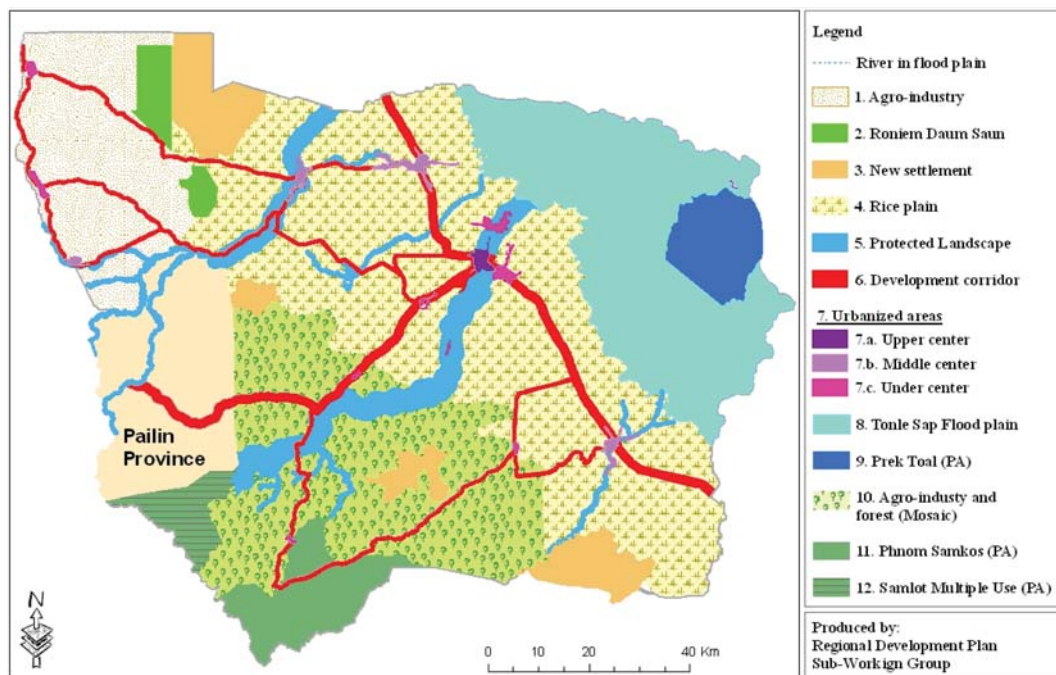


Although agricultural development dynamics have enabled a considerable number of households to increase their income (farming incomes are the highest in these uplands), the decrease of forest cover has had prejudicial consequences for local communities. Deforestation threatens the conservation of biodiversity (fauna and flora) which affects the diversity of forest products that rural families can access. Deforestation has also a direct economic impact on those families who depend on forest resources as a safety net for their livelihood. According to data from the Cambodian Socio-Economic Survey 2004 computed for the whole province of Battambang (figure 4), the livelihoods of the poorest rural households depend more on common pool resources (principally forest resources) than others. On the other hand, deforestation is putting the sustainability of agricultural development at risk because of the impacts it has on the overall watershed. Deforestation decreases the ground water content which inevitably impacts the nutrient and water intake of crops. It also increases the frequency of flood and drought events as well as erosion risks. Additionally, the loss of forest decreases the opportunity of economic development through eco-tourism (especially along the riverbanks), one key asset for the socio-economic development in Battambang.

Identification of spatially homogenous land units

The land zoning (figure 5) consists of dividing the provincial territory into spatially homogeneous land units with uniform land use characteristics. It aims to differentiate specific areas within Battambang territory according to: i) agro-ecological conditions, and ii) the recent land management dynamic that have been influential in explaining the recent land use changes. A multi-stakeholder discussion in each district has led them to define the criteria to determine each zone, agree on their delimitation and define a diagnosis of their key land management issues by identifying the root causes and consequences of each issue. By generalization, the land zoning outputs conducted in each district are aggregated to constitute the provincial land zoning. Each zone is intended to be unique and, as such, to serve as a planning unit. For each of these zones, a shared diagnosis of the land management issues, on their roots and consequences, is first established. A cross-sector development strategy is defined accordingly, which includes the contribution of each institution involved in the planning process. A set of priority actions to tackle these challenges is then applied in a coherent and concerted way.

Figure 5. Overall land zoning in Battambang



It would go beyond the scope of the paper to detail each land zone and the planning measures identified. A special focus will be put on the benefits that overall land zoning at the provincial level can provide to reinforce community-based approaches for natural resource management and help overcome the decrease of forest resources.

- In the agro-industrial and forestry mosaic areas, forest protection is desirable because they are an important source of timber and non-timber forest products for the livelihood of local communities. These are also important for watershed management services and represent a guarantee for the sustainable development of the agricultural sector. The process of designing the desired future management of this zone has provided the basis for the definition of a numerous areas with the potential for Community Forestry development. Potential areas for

Community Forestry were identified and integrated in a request to the Ministry of Agricultural, Forestry and Fisheries (MAFF). The objectives of this process are twofold. It aims to provide security of tenure to rural communities to manage the remaining pieces of forest but it also considers forest protection on a scale that can be beneficial for agriculture development and for water management downstream in the catchment basin.

- The protected landscape areas that aim to improve management of water and riverbanks provide an extraordinary opportunity for community-based eco-tourism. The process of designing the desired future management of this zone has provided the basis for the definition of eco-tourism areas (small environmental resorts) recognized as an integral pillar of the provincial tourism development strategy. A sector plan report has been produced in close consultation with local communities. The plan, which is approved by the provincial governor, foresees the protection of 16 eco-tourism zones for which the contribution of communities is clearly identified (Regional Planning Committee, 2008).
- The planning framework has also been instrumental in proposing the re-organization of the Roniem Doun Saum Protected Area in line with the new migration movement at stake in that area. The negative effects of deforestation on the development of cash crop agriculture and household economies means that forest protection and sustainable watershed management have great economic significance because they aim to preserve the potential for long-term agricultural development in the area. In order to find a new balance between the demands for residential and agriculture land on the one hand and the protection of forests on the other, the plan foresees the need to re-localize forest protection efforts in specific parts of the existing Protected Area, and to establish a social economic concession in another area.

DISCUSSION

The argument defended in this paper is that the integration of community-based natural resource management initiatives into a comprehensive spatial planning framework at the provincial level can reinforce local actions, give communities stronger recognition and overcome the current CBNRM limitations as highlighted above. We propose to discuss this core idea in line with the three dimensions of the spatial planning framework.

Land use planning

The interactions between the different resource components of any agro-eco-system determine its functioning and reproduction. Therefore evaluating the possible impacts of mismanagement in one area is extremely important in understanding the dynamic of the whole agro-eco-system. The scale in which this evaluation is conducted greatly matters. To properly weight the influence that resource units have on each other, these interactions are best understood over a large area. For instance, the effects of deforestation on the agricultural potential in a region, on the ground water level, on the water flows in the downstream parts of a catchment basin, or on the micro-climate are better evaluated over an area larger than a commune or a district (ie one province).

Additionally, addressing natural resource management in a provincial and comprehensive framework of social, economic, and environmental development allows the balance of short term needs in natural resources by communities with long term benefits and services that eco-systems provide. Provincial spatial planning captures this broad picture better than the simple aggregation of commune developments plans. The paper has showed for instance that the development of the agriculture sector associated with massive agro-industrial investment and in-migration can be better comprehended and analyzed at the level of the province. The scale is just more pertinent and allows tackling issues that can not be entirely addressed at a lower level (eg district or commune).

The aggregation of individual households' actions (for instance clearing a small area of forest for livelihood purposes) might have consequences for the agro-eco-system that can have, in turn, irreversible effects on the local production systems of those individual households. The role of a provincial-level spatial plan is to determine the boundaries between what local-level management itself should be recommended to do, or prohibited from, in order to secure the long-term development of rural communities. For instance, the spatial planning process has been instrumental in identifying community entitlements as Community Forestry or community-based ecotourism lands.

Nevertheless, it should be emphasized that a provincial spatial planning framework is a necessary component but not sufficient in itself for sustainable land management. It should be embedded into a larger more comprehensive framework, ie a national spatial planning reference, although unfortunately this national framework does not exist at this time. On the other hand, the provincial spatial planning framework ought to be clipped and detailed into more specific district strategic spatial development plans and even further detailed into legally binding commune land use plan (pending the approval of the sub-decree on commune land use planning, which will provide this legal basis).

Territorial Policy

NRM in Cambodia is characterized by important gaps between the legal framework (the constitutional rules) and the operational rules that set the mechanisms for appropriation of resources on the ground (ie when, where and how to withdraw resources units, who should monitor the appropriation actions, what information should be exchanged, and what reward or sanction will be assigned by different combinations of actions and outcomes) (Ostrom, 2002). These gaps should be filled with the support of policies that define the collective choices necessary to address the inter-relations between the resource components and ones that promote sustainable development in step with what makes the territory singular and unique. The plethora of sector laws, strategies, decisions, and plans at various levels makes this exercise of going beyond the sector difficult.

It necessitates a shared analytical understanding among actors about the different land management challenges affecting territorial development. It also implies having a clear vision to make effective decision-making. The institutional innovation addressed in this paper has shown that the province is a suitable level to host this function, it is sufficiently decentralized to capture the local conditions and to address the inter-relations between the different components of the agro-eco-system. At the same time it is sufficiently focused to act as a qualified focal point for action given the new powers allocated to provincial agencies as part of the D&D reform.

During the visioning exercise, the stakeholders have agreed that the promotion of community-based rural development is one of the pillars of the Battambang territorial policy. It implies that the participation of local communities in natural resource management is not only an opportunity that some communities obtain because of the involvement of a given NGO, but it becomes a right for all communities. Participation of rural communities is not restricted to those with existing technical management committees (CF, CFI, CPA), they are all recognized as key partners for rural development.

Territorial governance

Territorial governance determines the way territorial policy is applied. The challenge is twofold and deals with the complete institutional re-engineering that is taking place in Cambodia in the frame of the Decentralization and Deconcentration reforms. At stake is the coordination between stakeholders at one given level (horizontal integration) and the distribution of functions and powers across levels (vertical integration).

Each component of the agro-eco-system is formally attached to one sector of the public administration for its management; in reality the flows and interactions between the components are poorly addressed by dialogue between those administrations. Additionally, it is widely recognized that the proliferation of donor-driven projects that are formulated and implemented without coordination with provincial department plans potentially distorts the accountability of the departments away from their core functions (Hornig and Craig, 2008). The spatial planning framework proposes an innovative coordination platform for territorial governance. The initiative has opened

spaces of expression between all actors and has transformed this dialogue into real planning measures. The initiative anticipates one task that the provincial council will have to endorse, that is the design of basic principles for the sustainable management of land and natural resources. What is still not very clear is how the Public Investment Program (PIP) will be made consistent with the spatial planning framework in the future.

The benefits of this coordination are already tangible. The process has, for instance, facilitated access to and distribution of geo-data among relevant actors (public, private, and academic sectors). The cross-sector geo-database elaborated during the planning process constitutes the basis for Provincial Spatial Data Infrastructure and represents a real output of a territorial governance in the making.

Clearly, the provincial spatial planning framework is not a stand alone plan that will guarantee efficient land use management. It must be clipped and shaped into a more detailed spatial plan at the district level and eventually into legally binding land use plans at commune levels. Yet, the vertical integration that sets out the rules and mechanisms for coordination across levels is still properly addressed. The redistribution of powers and functions to be re-allocated between the provincial, district and commune levels is very complex. A subtle balance must be found between a principle of subsidiarity (a decision should be taken by the lowest level capable of doing so (Van Acker, 2009, in this volume) and the need to address the externalities associated with unintended effects of local actions on the whole agro-eco system or, downstream, in a catchment basin. This challenge is intricate but the design of an integrated set of spatial plans at different levels will become increasingly important as power devolution will be taking place, as explicitly supported by the Royal Government of Cambodia. The Battambang regional planning team will be engaging in this process in the near future.

CONCLUSIONS

In a little over 15 years, community-based approaches have become the mainstream for sustainable natural resource management in Cambodia (Ken Serey, 2005). In its 2008 World Development Report, the very influential World Bank is clearly reconsidering the role that communities can play in rural development (World Bank, 2007). Thus, it is very likely that CBNRM will continue to receive considerable attention in the future.

Local-level organization and action are necessary conditions towards sustainable natural resource management but the lessons learned from past experiences show that the benefits resulting from a quasi-exclusive focus on supporting local communities is somewhat limited when local conditions are isolated from the wider agro-ecological and socio-economic contexts. Our analysis does not negate the important contribution of local support to rural communities but tries to identify complementary (and not substitutive) approaches that might strengthen communities in their daily livelihood issues.

We argue that the scrutiny of the wider development context, (ie at the provincial level), is critical in order to more effectively address issues in natural resource management. The Battambang provincial spatial planning framework may be beneficial for communities because it integrates the community entitlements into larger land use patterns. It also recognizes all rural communities as key partners in rural development and provides concerted recognition of community entitlements. This institutional innovation promotes effective decentralization and deconcentration by clearly going beyond each individual sector. In that, it is a learning process for all actors involved in the planning of activities as well as in the monitoring and evaluation of the plan realization.

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