CLIMATE CHANGE AND FORESTRY

CAMBODIA HUMAN DEVELOPMENT REPORT 2011

Ministry of Environment
Cambodia

UNDP
Cambodia

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Climate Change and Forestry in Cambodia

1. Introduction

The rich forest resources of Cambodia play critical roles in rural livelihoods as well as providing valuable ecological and economic resources for the country's economic development. Managing forests sustainably and equitably will be essential for maintaining the ecological integrity of the country, maintaining freshwater supplies and protecting biodiversity. It is through forest management that much of the potential new climate change finance could be realised in Cambodia, with huge potential benefits for human development in the country.

Nearly 4 million people – more than 30 percent of the population – live within 5 km of the forest, with forest resources accounting for an average of 10 to 20 percent of household consumption sources (FA 2010). The vast majority of rural households – about 84 percent – rely on fuel wood and charcoal. Traditionally, forest resources – in particular, non-timber forest products – have provided important safety nets for rural people in times of crisis. For rural people, access to forest resources (and land) is thus critical for human development.

Cambodia has one of the highest levels of forest cover in Southeast Asia, with about 10.7 million hectares of forest in 2006, or 58.9 percent of Cambodia's land area (RGC, UNDP, FAO, and UNEP 2010). About 40 percent of Cambodia's forests have some level of protection as Protection Areas or Protected Forests (FA 2011).

By halting deforestation, Cambodia is in a position to reduce GHG emissions and expand the area that can absorb carbon. But in addition, protecting forests – and thereby watersheds and land – can also contribute to ecological protection, water resource management, sustainable land use, and human health.

However, there are still enormous pressures on forest resources, and the rate of deforestation is high. From the 1980s to the 1990s, the rate of deforestation was around 2 percent annually (or 200,000 ha/year), and from 2002 to 2006 it was 0.8 percent (75,000 ha/year).

Loss of forest cover and associated land use change are the main factors in Cambodia becoming a net emitter of greenhouse gases (GHGs). Forests serve as the single most important sink of GHGs in Cambodia. According to the 2000 Ministry of Environment (MoE) GHG inventory, while Cambodia emitted a total of 47,000 Gg (gigagram, which equals 103t) of GHG for the year 2000, its forest cover helped absorb more than half of that amount: 24,500 Gg (MoE 2010). Degradation of forest cover means the potential for absorbing GHGs will also be compromised.

2. Policy priorities

Forest resources have been under pressure both for logging and for land conversion. These have become highly contentious issues in Cambodia, particularly with regard to the granting of Economic Land Concessions (ELCs). By early 2009, MAFF reported that 65 economic land concessions, totalling about 1 million ha – almost 10 percent of forest lands – had been granted for agro-industrial development and permanent mono-cropping of rubber plantations (www.twgaw.org, viewed in September 2009). Yet the granting of ELCs without in-depth studies of land suitability and broad consultation with local people has the potential to create serious social and environmental impacts (WWF 2009). This has already been identified as one of the main causes of social conflict in rural areas. As the Government observes, *"The anarchy in illegal land possession, illegal claim of State land and protected areas as privately owned, and unlawful logging, are still taking place"* (RGC 2010).

Current national policy commitments under the 20-year National Forest Programme (2010-2029) aim to secure forest cover at 60 percent of total territory. One of the central components of this strategy is to support the establishment of Community Forests (CFs) and to allocate a total of 2 million hectares to rural communities (FA 2010).

Under the Forest Law, recognition of the rights of local communities and the importance of decentralised management of natural resources are clearly highlighted. However, implementation of Community Forestry has faced significant hurdles. The process of legal recognition is complex and has led to some delays in communities gaining full recognition of their management rights. Once formally recognised, Community Forests only have secure tenure for 15 years (compared to periods of up to 99 years for ELCs) – a period considered too short to allow for any significant returns on people's management investments. Some forest areas that fall within Community Forests are already seriously degraded, and most contentiously, areas handed over to communities in some cases overlap with Economic Land Concessions.

The combination of these factors has resulted in only limited progress in full establishment of Community Forest regimes:

- By late 2010, 430 CFs had been established in 20 provinces equalling 380,976 ha. However, only 107 CFs reached agreement with MAFF (only four have reached final stages of approval).
- Similarly, by 2009, while 84 Community Protected Areas (covering about 93,000 ha) were going through the formal process of registration with MoE, only two had formally reached the final stage (MoP 2010).

3. Perception, impact and implications of climate change on forest sector

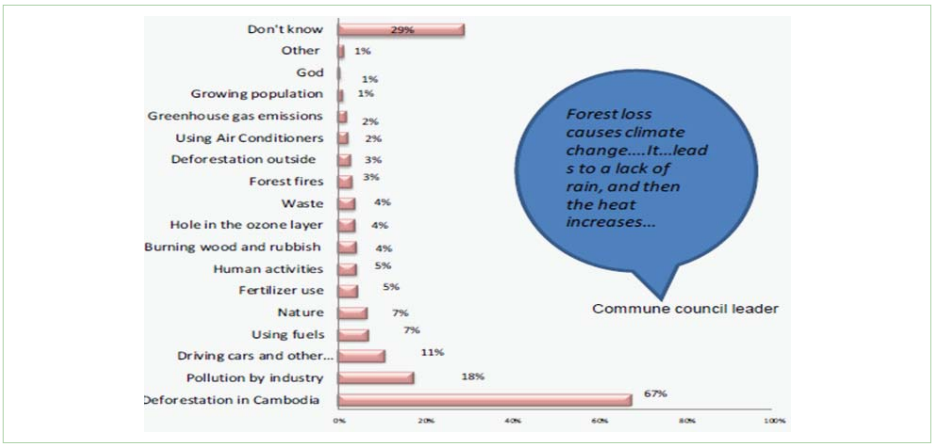
Forest degradation globally contributes around 17 percent to GHG emissions, but in Cambodia represents the main factor in the country becoming a net emitter of GHGs. Moreover, forests will also be impacted by climate change.

Local perceptions of climate change clearly link recently observed climate variability with forest and land degradation. An MoE/BBC trust study in 2011 of Knowledge, Attitudes and Practices (KAP) summarises rural people's explanations for locally observed climate change (see below).

Scientific predictions of climate change for Cambodia suggest that forests will be affected by changes in temperature, precipitation and the shifts in the seasons. The Second National Communication (SNC) to the UN Framework Convention on Climate Change (UNFCCC) by MoE draft shows exposing forests to a longer dry period might reduce forest productivity and increase risk of fire. If forests are being logged, there exists a risk that it will take longer for them to regenerate. With increased risk of fire, forests are at risk of turning into shrub or unproductive lands.

The implications of climate change go much further. For example:

- Given the importance of forests in rural livelihoods, any loss of productive forests, as well as of biodiversity, will lead to **loss of income or livelihood options for forest-dependent communities.**



Source: MoE/BBC 2011

- Exposing forests to longer dry periods might **reduce forest productivity and biodiversity.** This can also lead to atypical insect growth cycles, which can further affect agriculture and forests.
- Temperature increases and shifts in the seasons can **increase the risk of fire reducing forests to shrub or unproductive lands.**
- The integrity of **forest cover is intimately linked with maintenance of freshwater supplies, soil cover and quality,** and is believed by local farmers to attract rainfall.
- The loss of forest may lead to more consequences such as **storms, soil erosion and landslides.**

4. Forest actions

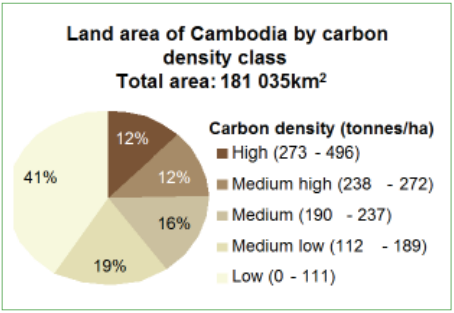
Overall, it is in the area of forestry that some of the greatest opportunities deriving from climate change exist for generating tangible economic benefits, particularly through emerging carbon markets.

By halting deforestation, Cambodia is in a position to reduce GHG emissions and expand the area that can absorb carbon. But in addition, protecting forests, and thereby watersheds and land, can contribute to ecological protection, water resource management, sustainable land use and agriculture, and human health.

Currently there are two main market mechanisms in operation. The UN Reduced Emissions from Deforestation and Degradation (REDD) Programme is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. REDD+ also includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. In addition, another form of REDD has emerged, where carbon offsets are sold on the voluntary carbon market (VCM).

A recent study (2010) shows a total of 2.96 Gt of carbon is stored in Cambodia's forest ecosystems.

- 30 percent of forest carbon stock is estimated to be in the Forestry Concessions (Production Forest, Permanent Forest Reserve, or PFR) managed by the Forestry Administration (FA)



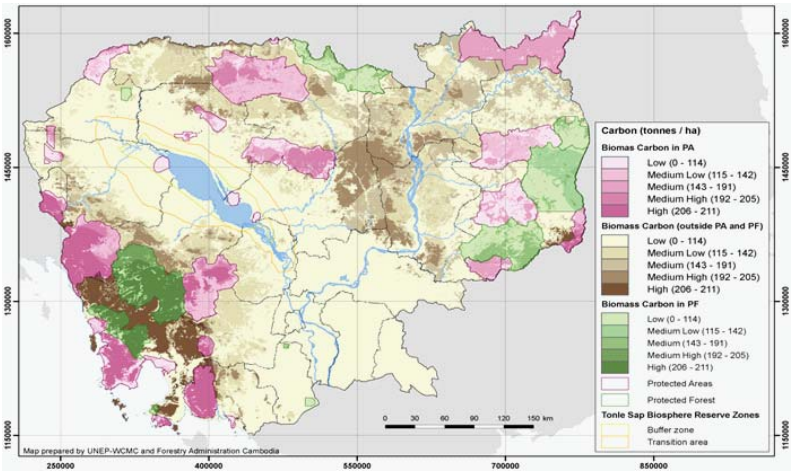
Source: Leng et al 2010

- 26 percent is in the Protected Areas managed by the Ministry of Environment
- 12 percent is under Conversion Forests gazetted as Economic Land Concessions owned by the land concessionaires

- 19 percent is in Other Forests (private forests, or plantations), for which management responsibility is unclear (Cambodia REDD+ Roadmap, revised draft, 27 September 2010).

The government has recently made important commitments to national implementation of REDD+ with the preparation of a national REDD+ Roadmap. The road to national implementation of REDD+ is a long and

Biomass carbon, protected areas and protected forest (Leng et al 2010)



Source: Leng et al 2010

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Actions to reduce sources of GHG emissions or increase sinks for emissions are referred to as mitigation. Despite the lack of concerted global action thus far. There still exist important opportunities for mitigation.

Initial REDD Experience

Cambodia is one of a few countries that has already begun piloting activities in line with REDD principles. This is significant for a number of reasons. It provides some lessons on how community-level initiatives, often targeted at small pockets of degraded forests, when pooled together can take on management responsibilities for forests at such a scale that there are more significant environmental benefits. This suggests the potential for Community Forests to take on management of much larger tracts of forest in the future. In contrast to the experience of many communities pursuing CF status, in this case the additional incentives of carbon financing, and the partnership between Commune Councils, FA and a non-governmental organisation, have demonstrated that it is possible to advance the registration and approval process efficiently. With the potential of financial benefits accruing to local communities, CF can be an important driver of livelihood improvement and economic development. If the challenges associated with REDD+ are addressed effectively, Cambodia has the potential to be a world leader in REDD+.

complex process, however, that will require 10 years of focus on capacity development and preparation of appropriate policies and legislation.

As such, implementing REDD+ is as much a governance challenge as a technical challenge, in order to ensure that access rights are protected and benefits distributed equitably. The main risk is that introducing a system of market-based mechanisms for forest management when property rights and governance mechanisms remain weak is likely to further disenfranchise those most dependent on forest resources.

Key challenges remain for the REDD+ process in Cambodia, concerned with:

- Finance and benefit sharing: A guiding principle of REDD+ is that the financial benefits generated will be shared equitably among various stakeholders, including both national and local governments, and critically, local forest communities.
- Monitoring, reporting and verification: For Cambodia to benefit from REDD+ it must put in place a system of monitoring, reporting and verification for both the international community and national stakeholders. This system requires establishing an agreed baseline of the status and condition of forests across the country, as well as a mechanism to monitor the progress of REDD+ according to a range of indicators associated with sustainability, equity and governance. It is essential that local forest communities are involved in these processes.
- Speed, scale of, and strategy of implementation: Ultimately REDD+ needs to be implemented across all forests within a country, rather than at specific sites. The REDD+ mechanism does not allow for a country to protect one area of forest while allowing the degradation of other areas.

5. Summary

The REDD+ and VCM finance mechanisms hold considerable potential for Cambodia. But there are outstanding issues around governance and tenure that will need to be addressed in order to guarantee that these mechanisms deliver tangible benefits to the rural people who depend so much on forest resources.

This will also require a shift in the focus of forest policy. So far, forest policy and practice in Cambodia has tended to consider forests as a discreet sector to be managed by local communities or the private sector. Essentially, this has focused on managing forests for the forest resources rather than for the broader ecological and livelihood benefits that they generated. The scale of management has tended to be as specific pockets of resources within the landscape. However, increasingly, addressing climate change will require a shift from a sectoral approach toward an ecosystem or landscape approach – perhaps centred on watersheds and river basins.

While climate change threatens the future of agriculture and rural livelihoods, it is clear that much of the wealth and prosperity of the people of Cambodia will continue to depend on agriculture and natural resources. These sectors constitute the backbone of the national economy and will continue to provide opportunities to improve human well-being while also driving further national prosperity.

៦. ឯកសារយោង / 6. References

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