



Aufnahme: Jan-Peter Mund.

Cashew plants in the Snoul-District

Forest Resources and Land Cover changes in Cambodia

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In the 1960s Cambodia has had higher percentage of the forest cover than any other country in South East Asia with a forests cover of 13.2 million ha, or 75% of the country. This was comprised of 6.7 million ha of evergreen and mixed forests, 5.3 million ha of deciduous forests, with the remainder consisting of inundated forests, mangrove forests, bamboo, and other forests (DY PHON 1982). According to the MEKONG SECRETARIAT (1994), the forest cover of Cambodia was already reduced to 65% in 1985 and continued to decline to 62% in 1996/97 (EANG & SOKUN, FA 2004). Based on different indicators and remote sensing data FAO (2001) estimated a close cover of several dense forest types of less than 55% in 2002 with an annual deforestation rate, mainly caused by logging of about 1.7% since 1995 (TOLA & MCKENNY 2003). Substantial areas were allocated to forest concessions in the 1990s; other areas were logged by non-concessionaires. Estimates

of the extent of forests vary depending on the definitions and technologies of different national and international stakeholders used in forest assessments during the last 15 years.

In developing countries, like Cambodia, poor and rural population are often considered as one of the factors of forest degradation, behind exploitation of timber products, mining, and plantations. A growing population and increasing consumption of forest resources for timber, fuel wood, and a range of non-timber forest products is placing the remaining resources under significant pressure. Demand on forest resources is growing fast as especially the rural population continues to grow rapidly in Cambodia. Traditionally, forest resources play a significant role in the household economy, as an additional source of food, but also as an important source for tools, and for medicine. More than ever before, forest cover is being lost permanently as it is

converted to agricultural land, often in the form of large plantations with additional roads which have made forest areas in many parts of Cambodia easily accessible. This is facilitating a significant in-migration of settlers into forest areas. Many of whom subsequently seek to clear forestland and gain title to newly cleared areas (NGO-FORUM CAMBODIA 2003).

In 1997, the Department of Forest and Wildlife (DFW) assessed 58% forest cover, declining from 73% in 1969. Different forest monitors are in agreement about forest coverage in Cambodia of at least 50% of different forest types. The Forest Concessions and Protected Forest/Areas change analysis from 1998 to 2003 are shown in table 1. Since July 2002, about 45% of the forest area or equivalent to 4.5 million ha has been "set aside" as protected areas or protected forests by DFW. Between 1993 and 1997, it has been calculated that about 0.3 million of forest has been cleared and between 1997

and 2002 it has been estimated that about 1.3 million hectares of forest was cleared. In 2002 only 27% of the land is covered with 'less disturbed forest' (INDEPENDENT FOREST SECTOR REVIEW, 2004). However, a still missing definition of degraded forest types hamper unified figures for all stakeholders. Growing figures in 2002 (FRM) are a result of different applied methods and classifications (see Table).

Extensive logging was conducted during the mid 1990ies on a massive scale in northern and eastern provinces as well as along the border to Thailand in Koh Kong, Pailin and Battambang provinces. Concessionaires have shown no concern for sustainable management or impacts on the environment as well as affected local communities (ARD 2004). Forest concessions have still enormous impact on the lives and livelihoods of people living in or near them, while concessionaires understand the concession as their property, hindering local people to access into "their property" by armed guards and even military personnel (WILDAID 2005). Conflicts on land and forest resources are the major issue at the rural forest interface. According to DUEMMER (2004) the highest percentage of land conflicts in relation to population exist in Pailin with 16% of the local population involved in rural land conflicts and in Monduliri Province with the highest level of forest clearance per capita in 2003. This figure set out obviously that forest clearing and encroachments in Monduliri Province is triggered by concessionaires, land grabbers and migrants who are attracted to the resource rich frontier provinces (ARD 2004). Access to forest as a vital resource for rural, especially remote rural dwellers is crucial for their daily fuel wood. Collected wood is still the cooking fuel for 95 percent of households in rural areas, and for 92 percent of households throughout Cambodia. Although gathering firewood in protected areas is illegal it continues with or without informal consent from protected area authorities. Introducing community managed systems of protection and extraction may best ensure the sustainable use of this renewable protected area product.

From 1999 to-date, forest concessions were reduced by a total forest area of 3.5 million hectares in 24 locations. Con-

cessions granted to 17 companies have been administratively cancelled without any kind of enforcement and follow up. Nowadays there are only 12 concessionaires, covering a total area of 3.37 million hectares of forests, who are in the process of planning their operations. All forest concessions are supposed to have been inactive since 2001. A great deal of illegal logging takes place nevertheless, wherever conditions are best for it (COOPER 2006). No new forestry concessions have been issued but illegal small reclaim operations have still continued. Illegal logging operations of more than 1500 of criminal sawmill plants; nearly 700 timber processing units and around 50 medicine vine powder manufacturing units were found by MAFF and RCAF operations in 2004-2005. It is estimated that these official figures cover only 25-30% of the existing illegal logging and forest harvesting operations.

Forest resources still play a vital role to the development of socio-economics and national economy while forest itself has made a relatively small contribution to both national revenue and to GDP, not exceeding 4% and 8% respectively since 1994 due to massive illegal logging and timber trade activities until 2000. Forest resources are important to many people in numerous ways, in terms of direct livelihoods as well as through contributions to the economy both directly and indirectly through environmental services. Nowadays customary user rights of local communities in or near forests are recognized but not yet ensured in forest concession areas.

Specifically, over 85% of the population live in rural areas and depend largely on these natural resources for their subsist-

ence (WORLD BANK 2005). Regarding the countrywide low population density of 74 inhabitants per km² and a high rate of population growth, access to land in the over populated lowlands has already fallen short in the mid nineties. Regional population density is on a high-level only in the Mekong plains and Tonle Sap Lake regions with 256 people/km² while some coastal regions and highlands occupying around 38% of the total area are still sparsely populated with less than 11% of the total population or around 21 people/km² (NIS 2005), but still large areas of these arable lands are infested by dangerous land mines planted, and unexploded ordnance (UXO) dropped, during past conflicts.

Secure access to agricultural or forest land is a crucial factor for economic development and social prosperity (OTSUKA 2001). It is widely recognized that most rural Cambodians still depend on land and natural resources for their livelihoods and subsistence (World Bank 2005). Land and Forest Reforms are therefore crucial to increase agricultural production by providing titles and security of tenure to people, especially farmers over lands they are occupying with legal certificates from the early 1990s. From every farmer occupying land in the early 1980s an estimated 12% of farmers do not own any land at present (NSDP 2005). Large scale infrastructure development, agricultural economic concessions, land speculations and local as well as foreign investment is increasing fast, while law enforcement in the sector of natural resource management is still insufficient. The poorest half of all Cambodian households hold only 15% of the land, and as many as 20% are

Year	Total area in ha	%	Change in cover in ha	%	Change per year	
					Area	%
Forest : Cover > 10 %						
1965	13,227,100	73.04	-	-	-69,389	-0.39
1973/76*	12,711,100	70.02	-516,000	-3.02		
1985/87*	11,852,400	65.29	-1,374,700	-7.75		
1992/93*	11,284,200	62.16	-1,942,900	-10.88		
1992/93*	11,378,664	62.68	-1,848,436	-10.36		
1996/97*	11,134,615	61.34	-2,092,485	-11.70	-65,390	-0.37
1993 (JAFTA)	11,961,833	63.30	-1,265,267	-9.74	-45,188	-0.35
Forest : cover > 20 %						
1992/93 (GTZ)	10,859,695	59.82	-	-		
1996/97 (GTZ)	10,638,209	58.60	-221,486	-1.22	-55,371	-0.31
2002 (FRM)*	11,104,293	61.15	+244,598	+1.33	+27,177	+0.15

Table 1: Change in Forest Cover by Forest Type: 1965-2002

Source: FAO/UNDP and (MRC/GTZ) including wood /scrubland evergreen and bamboo and excluding forest plantation. * Data provided by DFW, Ministry of Agriculture, Forestry and Fisheries.

totally landless. "Possession rights are expensive because of rent leveraging by the many officials involved in surveying and certifying land for titling and provides only limited security against pervasive land grabbing by the powerful." (WILLIAMS 1999). Conflicts cover various kinds of land, in rural and even remote rural areas and are thriving like the instance of granting 100.000 – 200.000 ha to concessionaires in Preah Vihear and Koh Kong Province. Consequently, land disputes in Cambodia have received prominent coverage in the national and international press over the last years. Rough calculation gives evidence that about 4% of the Cambodian population have been or are involved in land disputes (SOK THA 2005). This means in particular that one in every twenty five households in Cambodia has been or is affected by land disputes.

A key challenge for Cambodia are natural resource management regulations as well as secure access to land for all, especially pro poor access to land and a land market development based on a transparent land valuation system. Additional efforts to be made are the Forestry Reform to assure, manage and maintain the existing forests and other natural resources with

a continuation in reforestation, besides suspending issue of any concessions and keeping a strict watch over existing concessionaires. The challenge is to spell out a clear strategy to address management of concessions, annual coupes, community forests, and protected areas in a sustainable manner based on a sustainable forest management policy, a secure and enforced protected area system and a sound, transparent community forestry system which will be managed decentralized by local programmes.

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Schriftenreihe der APSA

Pazifik Forum

Weber, Robert (2006): *Kulturlandschaftswandel in Zentralsulawesi: Historisch-geographische Analyse einer indonesischen Bergregenwaldregion*. Schriftenreihe PAZIFIK FORUM der Arbeitsgemeinschaft für Pazifische Studien e.V. (Hrsg.: Faust, H./Kreisel, W./Waibel, M.); Band 12, Universitätsverlag Göttingen. Göttingen 2006. 238 S. ISBN 3-938616-52-0. 18,00 Euro.

Die Lore-Lindu-Region in der indonesischen Provinz Zentralsulawesi befindet sich gegenwärtig im Spannungsfeld zwischen dem Schutz des Regenwaldes einerseits und den Interessen für ein zukunftsfähiges Auskommen seitens der dort lebenden Bevölkerung andererseits. Um nachhaltige Lösungsansätze für diese Problematik zu generieren, ist ein umfassendes Wissen über die anthropogene Entwicklung in der Region eine unabdingbare Voraussetzung. Vor diesem Hintergrund enthüllt das Buch den facettenreichen historischen Kulturlandschaftswandel dieser faszinierenden Bergregenwaldregion während des 20. Jahrhunderts. Der Autor deckt dabei nicht nur Kontinuitäten durch die Tradierung von Kulturelementen aus der präkolonialen Phase sowie der Kolonialzeit in die Gegenwart auf. Er legt auch den raumzeitlich heterogenen Charakter der Entwicklungsprozesse und die soziokulturelle Konstruktion von Kulturlandschaft in dieser Region offen.

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