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Land use and Forestry Management in Sabah: Review of Literature

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ABSTRACT

This paper will focus on review of related literature about land use and forestry management in Sabah which specifically focusing on Lower Kinabatangan. The aim of this papers is to review the Sabah forestry status in order to see if there have been any important changes of the land use over the last decades. This paper also highlights some of the policies that have contributed either negatively or positively to the forest management in Sabah. From literature review analysis of the forest management process in Lower Kinabatangan shows an imbalance between economy, social and ecology aspect. Refer to this situation it show that the necessary to build or suggest the new forest management in order to improve the existing system and also achieving the sustainable forest management in Lower Kinabatangan.

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INTRODUCTION

Sabah is rich in forest resources and among the most biologically diverse in the world (Koh, L.P., D.S. Wilcove, 2007). Unfortunately, over the last 20 years the emphasis on developing the state's economy has led to significant and drastic changes in the landscape of the land use. As the state developed, easily accessible forest land was harvested and cleared for conversion to agriculture. According to (Hoh and Ishak, 2001) the main crop now covering Sabah is oil-palm, which provides a significant source of income to the state and is the main export product. As the availability of valuable hardwood species declined, so did the rate of logging, but this did not stop forest lands from being depleted further. The development of oil-palm plantations began in earnest, especially in the late 1980s and early 1990s (Payne, J., 1997). In this context, many of the private owners of these plantations come from Peninsular Malaysia seeking the cheaper, abundantly available land in Sabah. Degraded forests were degazetted and cleared to make way for plantations, and the rate of conversion to oil-palm was extremely high.

Forest Management in Sabah:

Sabah is the state in Malaysia with the biggest acreage under oil palm and has contributed significantly to the development of the Malaysian economy (Hoh and Ishak, 2001). The total oil palm area in Sabah has increased to 1.4 million hectare and the state produced 5.3 million tons of crude palm oil in 2010 (Figure 1). The palm oil industry is a key component of the domestic economy, and an influential player in the global edible oils market and currently palm oil is the biggest contributor to the Sabah economy.

In this situation, the potential for conversion of Sabah's rainforests to palm oil plantations as a result of biofuel policies in Malaysia has generated understandable concern among policy makers and the public. Such an outcome would undermine the environmental credentials of biofuels as well as cause ecological damage, with consequential economic and social effects. While the impacts of converting forest to oil-palm have received considerable attention in recent years, the incremental role that biofuel production has played in deforestation is less well understood. According to Manan and Yahya (1997), the are many factors that have caused "massive depletion of forests" in Sabah such as, harvesting beyond the forest's ability to regenerate; not allowing forests to recuperate after logging through premature "re-entry" or "relogging"; damage to residual stands because of bad logging practices; abandonment of silviculture and forest rehabilitation; revenue priority overruling environmental limits; political changes and instability and the forestry profession's inability to exert influence on powerful groups. It has been estimated that the area of primary forest cover dwindled from 2.8 million ha to about 300 000 ha between 1975 and 1995 (Mannan, S., Y. Awang, 1997) and during the same period, the area of

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disturbed forests nearly doubled. According to Manan and Yahya (1997), the most drastic change was in the primary forests of Class II Production Forest, which dropped from 98% of cover in 1970 to a mere 15% in 1996. At the same time, the first major change in forest laws occurred in 1984, when the Forest Enactment of 1968 was revised. In this case, forest reserves were divided into seven classes, all existing forest reserves were regazetted to include the new classes of forest, and new reserves were gazetted for example, Deramakot Forest Reserve became Deramakot Forest Reserve and this change show that forest reserves could no longer be reclassified within Sabah Forest Department but any changes to the classification of forest reserves, especially those in Class II Commercial Forest, required the approval of the State Cabinet and the Governor of Sabah (Sabah Forestry Department, 1998).

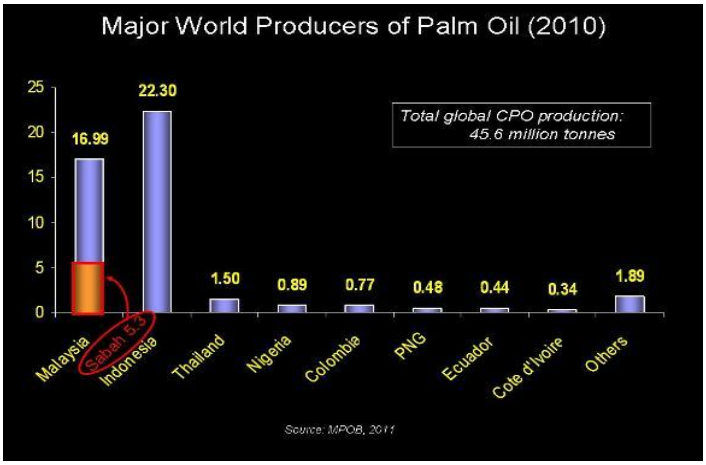

Fig. 1: Major World Producers of Palm Oil (2010) (Sources: MPOB, 2011).

Overall, there is a problems highlights weakness in the early concepts, planning and implementation of forest management in Sabah, for example, insufficient cooperation and coordination among different government extension agencies; low prioritization, commitment and support for forest management projects among stakeholders; lack of community participation which means communities were not involved from the beginning of planning and decision-making for forest management, and they were insufficiently informed about the aims and objectives of forest management; cultural differences between extension personnel and communities, which created communication gaps; lack of cohesiveness and internal problems within resettled villages for example land and boundary disputes and fully dependency on government hand-outs (Mannan, S., Y. Awang, 1997).

Protection status of land use and forest management:

Land Capability Classification categories and maps guide the allocation of land use in Sabah (McMorrow, J., M.A. Talip, 2001). The priority of land use allocation has historically been mining, agriculture, forestry and recreation/wildlife, in accordance with the perceived order of highest monetary return. The objective was to maximise probable economic gain from the land resource given moderate levels of management. According to McMorrow and Talip (2001), factors such as biodiversity, accessibility, social benefit, land ownership and the current land use did not influence the grading. Therefore while other species-rich sites in Sabah were declared as priority areas for protection in the 1980s, the lowland forest in the Lower Kinabatangan was converted to agriculture and large sections of forest were continually cleared while scientific research continued to produce convincing evidence of this area's importance for species conservation. In this case, WWF suggested to the government that 56,000 hectares should be set-aside for protection because large sections of the Kinabatangan floodplain had already been designated for logging and agricultural conversion. Therefore retaining more forests for wildlife protection was complicated, and policy on land development had to be modified (Vaz, J., 1993) and in 1989 Sabah's Ministry of Tourism and Environmental Development (MTED) outlined a proposal to establish the Kinabatangan Wildlife Sanctuary (KWS) because of the tourism potential of the area revealed exceptional potential and endorsed the concept of a wildlife sanctuary (Vaz, J., 1993; Payne, J., 1997).

In 2005, the Sabah State Government established the 26,000 hectare Kinabatangan Wildlife Sanctuary under the Wildlife Conservation Enactment. The sanctuary consists of blocks of land which link the remaining pockets of forest reserves with the mangrove forests near the coast to provide a forested corridor along the lower portion of the river

(Mannan, S., Y. Awang, 1997). The KWS is managed by the Sabah Wildlife Department (SWD) which is administered by the Ministry for Tourism Development, Environment, Science and Technology. Payne (Payne, J., 1989) mentioned that who owns the rights to land, to use the land, and exploit the resources on the land is very important in terms of nature conservation and tourism. In traditional Bornean societies, forest and marine products were often regarded as common property resources to which there was open access and customary rights of individual usage existed within a community's territory, but these were often flexible and subject to group control. However all land matters in Sabah is now controlled by the state government, and claims to ownership have to be approved and registered by the state (Toh, S.M., K.T. Grace, 1999). The Land Ordinance was established in 1930 to "regulate the alienation and occupation of State lands" (Land Ordinance Sabah Cap 68 1930, p. 8) and native land rights are addressed in Part IV of the Land Ordinance. Under the Land Ordinance, property rights in Sabah currently fall into three categories namely, state property rights; private property rights and communal property rights. In the case of Lower Kinabatangan, this area is classified as 'state property' and 'private property'.

Table 1: Land classified in the Lower Kinabatangan.

State property rights	Private property right
• Land under this category is known as State Land, and includes all forest reserves (Toh & Grace, 1999). Applications for indigenous title cannot be made on titled State Land. In the Lower Kinabatangan this includes the KWS, forest reserves, and SAFODA land.	• These apply where land has been alienated for development - usually oil palm or other tree plantations owned by private sector companies or individuals. However the Land Ordinance, Part IV also provides for private ownership rights for individuals (indigenous title) (Toh & Grace, 1999).

In Sabah, any applications for an indigenous title can only be made to untitled State Land, and can only be issued to land that is in active use. Claims are made at the district land office, and if granted, the native title is issued in perpetuity (Thien, T., 2005). Each family is allowed to register no more than 15 acres (six hectares) as indigenous land (Payne, J., 1997). However, people in the Lower Kinabatangan region have taken advantage of this privilege and most families own or have applied for indigenous title to land. These smallholdings are able to provide families with food and income supplements (Payne, J., 1997). Even though, the Land Ordinance forbids native landowners to 'misuse' or 'sell' their land rights by selling their land for short term profits to non-natives but this practice is still prevalent despite being illegal (Seng, J.L.C., 2007). Yet the Land Ordinance does allow for native land owners to grant a sub-lease of the land to a non-native for a term not exceeding 99 years (Land Ordinance Sabah Cap 68 1930). This is a direct threat to the still-forested land under native title in the Lower Kinabatangan as oil palm companies are looking to further expand their plantations (Majail, J. and D.A. Webber, 2006).

Case Study: Lower Kinabatangan Sabah, Malaysia:

The Kinabatangan District has a total of 78 villages. Kinabatangan District divided into two divisions, namely *Dewan Undangan Negeri* (DUN) 47 which is represent of Upper Kinabatangan and *Dewan Undangan Negeri* (DUN) 48 which is represent Lower Kinabatangan. The population of the Kinabatangan district in 2010 was 165 000.00. They are employed in agriculture, hunting and forestry and for those people located close to rivers, fishing is an important livelihood. However the majority of the populations of the Kinabatangan district are inevitably employed within the palm oil industry (Prudente, C., G. Balamurugan, 1999). The Lower Kinabatangan is the largest alluvial floodplain in Malaysia. The upper catchments of the Kinabatangan River are the forested hills near Mt Trus Madi and the Maliau Basin in the centre of Sabah. Much of the lower half of the Kinabatangan meanders through a floodplain which is covered with water during rainy periods, and becomes even more water-logged at high tide (Payne, J., 1997). Lower Kinabatangan is known for its remarkable wildlife and fascinating habitats such as limestone caves at Gomantong hill, drylan dipterocarp forests, riverine forest, freshwater swamp forest, oxbow lakes and salty mangrove swamps near the coast.

Beside the diversity of endangered species, it has been predicted that the total number of flowering wild plant species in the region is approximately 2,500. However according to Prudente and Balamurugan (1999), it is speculated that numbers may be declining given the clearing of the species-rich forests for oil palm plantations. The Gomantong caves provide habitat for numerous endemic plants and animals (Pang, C., 2003) and freshwater swamp forest is the natural vegetation of most waterlogged and seasonally flooded land in the area. However this is being threatened by the decreasing environmental quality of the area

Type of land use and forestry in Lower Kinabatangan:

Oil Palm:

British first introduced the oil palm to Malaya in 1875, and in 1917 the first commercial plantings of the trees took place on Peninsula Malaysia. Later with land constraints and an increase in land prices in Peninsula Malaysia, oil palm plantations looked to expand their operations into Sabah (Pang, 2003). Oil palm is grown on about 45% of the total land area of

Kinabatangan District. This amounts to 299,385.38 hectares out of 660,500 hectares. From this, private companies own 250,933.29 hectares (84%) (Prudente, C., G. Balamurugan, 1999).

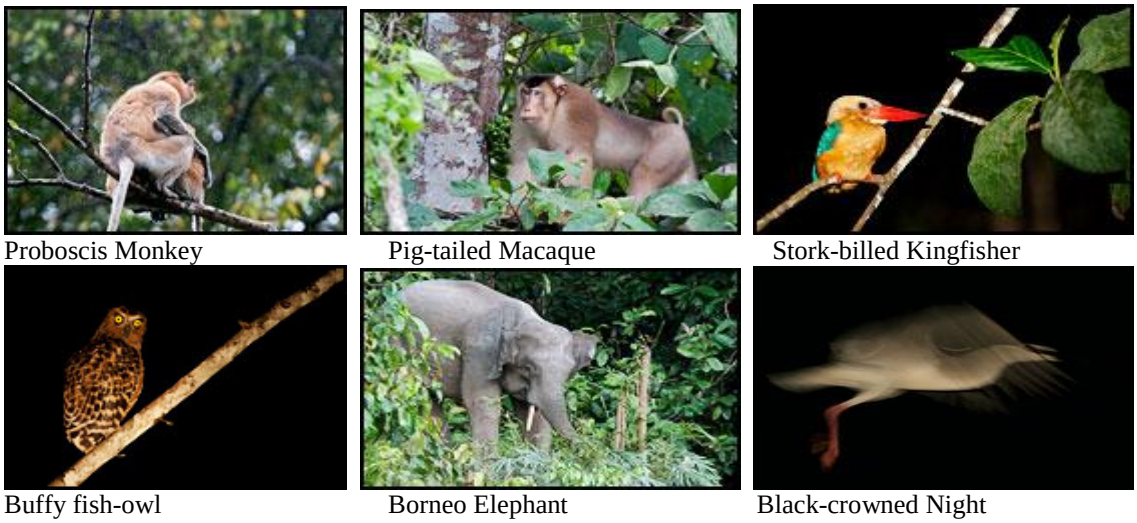

Fig. 2: Example of endangered species in Lower Kinabatangan.

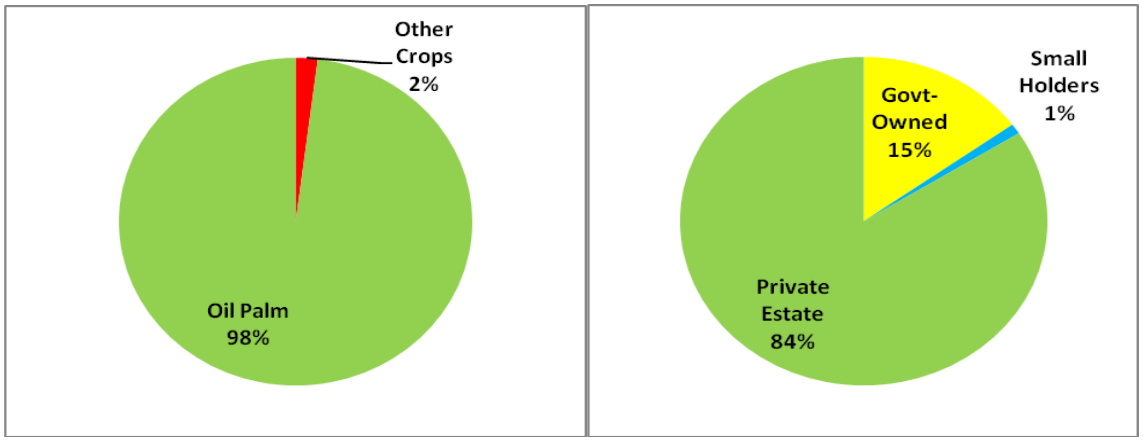

Fig. 3: Oil palm in Lower Kinabatangan.

According to Pang (2003), Sabah's declining timber resources in combination with the decline of international prices for traditional cash crops such as cocoa and rubber encouraged the State and the agricultural sector to explore the option of oil palm to generate economic revenue. Commercially, oil palms are grown for their clusters of fruit, or 'Fresh Fruit Bunches' (FFB). Each fruit contains a seed (the palm kernel) surrounded by soft oily pulp. Oil is extracted from both the pulp of the fruit and the kernel. Sabah's palm oil plantations are now the most productive in Malaysia (Malaysian Palm Oil Board, 2008b). An average palm oil estate is around 2,000 hectares and employs roughly 200 workers. Normally an estate is productive for about 25 years, with peak production between 7-14 years (Bann, C., 1996). Currently 98% of the Kinabatangan floodplain has been converted from forest to agriculture (Pang, 2003). In 1995, approximately 190,625 hectares were planted in palm oil in the Kinabatangan district, and this area had increased to 303,941 hectares in 2005 (Sabah Institute for Developing Studies, 2008). Oil palm estates are currently the predominant land use within the Kinabatangan district and now have the most hectares planted in palm oil out of all other districts in Sabah (Sabah Institute for Developing Studies, 2008).

Forest Reserves:

The forest reserves in the vicinity of the Kinabatangan Wildlife Sanctuary serve a very important purpose because it provides an ecological corridor between the fragmented lots of the Wildlife Sanctuary (Pang, C., 2003). This unification is essential to the success of the KWS in terms of sustaining viable breeding populations of wildlife. There are six Class VI Virgin Jungle Reserves (VJRs) which are significant for linking the protected areas under the Wildlife Sanctuary namely, Keruak Forest Reserve, Bod Tai Forest Reserve, Gomantong

Forest Reserve (which is also surrounded by Class I Protection Forest Reserve), Materis Forest Reserve, Pin Supu Forest Reserve, and Sg. Lokan Forest Reserve (Sabah Forestry Department, 2007a). These reserves are intended to provide undisturbed forest for research purposes and the preservation of gene pools. The Forest Enactment (1968) stipulates that none of the listed reserves can be de-reserved except when needed for a park or a game or bird sanctuary. Most activities on forest reserves are prohibited unless specifically authorised (Sabah Forestry Department, 2007a).

Sabah Forestry Development Authority (SAFODA) Rattan:

Sabah Forestry Development Authority (SAFODA) manages a rattan plantation which lies between the Lamog River and Batu Putih. According to Vaz (1993), it is the first large-scale venture in Malaysia which retains natural forest cover to support a commercial crop, and presents an alternative for the sustainable use of Sabah's forest resources. Economic returns are obtained from the sale of rattan which is in demand by the international furniture industry and also helping to protect the water quality in the river, and providing habitat for wildlife are enjoyed by keeping the forest intact (Vaz, J., 1993). The SAFODA project provides income for local people, and as full-time, regular working hours are not necessary, the workers are also able to devote their time to other activities (Payne, J., 1989). However, local villagers are officially denied access into the SAFODA land for harvesting plants and hunting of wildlife (Azmi, R., 1996).

Gomantong Caves:

The Gomantong caves, located in the Gomantong VJR, have been harvested for their edible birds' nests for centuries and according to Payne (1989), there are two species of swift lets which roost in the limestone caves of the Lower Kinabatangan region make nests which, when made into a soup, are regarded as a delicacy by the Chinese communities of Asia. According to Payne (1997), about two million bats form spectacular flocks which spiral out of the caves every evening to spend the night feeding. As the bats leave the caves, predatory birds are seen snatching them. The floor of the cave is covered in guano and is home to a unique fauna including thousands of extremely large cockroaches. Collection of the edible nests using an array of bamboo and rattan ladders, ropes, poles and platforms, is a fascinating feature and occurs intermittently during the period about February-August and the management of nest collection is the responsibility of the Wildlife Department (Payne, J., 1989). The most accessible cave (Simud Hitam) is open to visitors from 8am till 6pm daily, and the admission fee for an international adult is RM30 and Simud Hitam is a ten minute walk through the rainforest along a well maintained boardwalk from the registration centre (Sabah Tourism Board, 2008a). The Gomantong VJR is not only an important protection zone for the swiftlets, but is also habitat to a wide-range of wildlife.

Kinabatangan Wildlife Sanctuary:

The 26,000 hectare Kinabatangan Wildlife Sanctuary (KWS) was declared Malaysia's first Gift to the Earth in 1999. This was upgraded to bird sanctuary status in 2002, and in 2005 the area was gazetted which is amidst strong opposition from land developers and oil palm companies as a full wildlife sanctuary. During the proposal stages of developing the KWS it was suggested that "the status of Park" (under the Parks Enactment, 1984) but is not appropriate because traditional activities such as fishing and gathering of minor forest produce by local people are prohibited (Payne, J., 1997). The sanctuary consists of eleven blocks of land which link the existing forest reserves and SAFODA rattan plantation with the mangrove forests near the coast to provide a forested corridor along the lower portion of the river (Hutton, J., 2005). The KWS is managed by the Sabah Wildlife Department (SWD). The SWD is also responsible for the implementation and administration of the Sabah Wildlife Conservation Enactment, 1997.

Conclusion:

Forest management in Malaysia and specifically in Sabah is still prudent concern when compared to any developing country in the world. As indicated by previous studies there are strong increase in deforestation over the years. In fact, these weaknesses are significant in forest management policies and legal aspects, planning and control of forest and cooperation between the sectors involved. Besides that, unsustainable land use development for example cultivation of oil palm which require large areas resulting in several parts of the interior had to deal with the threat of extinction of the forests and affected by high deforestation, for example, in the Lower Kinabatangan, Sabah.

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REFERENCES

Azmi, R., 1996. Protected areas and rural communities in the lower Kinabatangan region of Sabah: Natural resource use by local communities and its implications for managing protected areas. *Sabah Society Journal, 13:* 1-32.

Bann, C., 1996. Maximising the economic and ecological benefits of ecotourism in Malaysia. A case study of the Kinabatangan River, Saba*h* (No. MYS 310/94): WWF Malaysia.

Fletcher, P., 1997. The Lower Kinabatangan: The Importance of Community Consultations in Ecotourism Development. In J. Bornemeier, M. Victor & P. B. Durst (Eds.), *Ecotourism for forest conservation and community development: Proceedings of an International Seminar, 28-31 January 1997* (pp. 213-219). Bangkok, Thailand.

Hoh and Ishak, 2001. Oil Palm Cultivation in the Lower Kinabatangan Floodplains: A Case Study. Paper presented at the Forum on Making Land Use Sustainable in the Lower Kinabatangan Floodplain, Kota Kinabalu.

Hutton, J., W.M. Adams and J.C. Murombedzi, 2005. Back to the Barriers? Changing Narratives in Biodiversity Conservation. *Forum for Development Studies,* 32(2): 341-365.

Kinabatangan District Office, 2007.

Koh, L.P., D.S. Wilcove, 2007. Cashing in palm oil for conservation. *Nature*, 448: 993-994.

Malaysian Palm Oil Board, 2008b. Average FFB yield for oil palm estates: 2007. From http://econ.mpob.gov.my/economy/annual/stat2007/Area1.9.htm.

Majail, J. and D.A. Webber, 2006. Human dimension in conservation works in the lower kinabatangan: sharing PFW's experience. *Fourth Sabah-Sarawak Environmental Convention*, 9 pp.

Mannan, S., Y. Awang, 1997. Sustainable forest management in Sabah. Proceedings Seminar on Sustainable Forest Management, Vol. 27, November 1997, Kota Kinabalu, Sabah, organised by Sabah Forest Department, pp. 51}74.

McMorrow, J., M.A. Talip, 2001. Decline of forest area in Sabah, Malaysia: relationship to state policies, land code and land capability. *Global Environmental Change, 11:* 217-230.

Pang, C., 2003. Creating a conservation vision for the Kinabatangan: a corridor of life. *Sabah Society Journal, 20:* 65-77.

Payne, J., 1997. The Kinabatangan Floodplain: An introduction. WWF Malaysia.

Payne, J., 1989. A tourism feasibility study for the proposed Kinabatangan Wildlife Sanctuary. Kota Kinabalu: WWF/Malaysia.

Prudente, C., G. Balamurugan, 1999. Sungai Kinabatangan "Partners for Wetlands" Project: A partnership for sustainable development and conservation. *Sabah Society Journal, 16:* 41-56.

Sabah Forestry Department, 1998. Annual Report, 1997. Sabah, Malaysia.

Sabah Forestry Department, 2007a. Forest Legislation. From http://www.forest.sabah.gov.my/policies/legislation.asp167.

Sabah Institute for Developing Studies, 2008.

Sabah Tourism Board, 2008a. Gomantong Cave. From http://www.sabahtourism.com/sabah-malaysian-borneo/en/destination/27-gomantong-cave/

Seng, J.L.C., 2007. *Environmental law in Malaysia (Borneo edition)*. Kota Kinabalu: Borneo Revival Sdn. Bhd.

Thien, T., 2005. Independent body needed to look into native land matters. from http://borneoproject.org/article.php?id=80.

Toh, S.M., K.T. Grace, 1999. *Case study: Sabah forest ownership*. Kuala Lumpur: Global Forestry Services Inc.

Vaz, J., 1993. *The Kinabatangan floodplain: an introduction*: WWF Malaysia.