

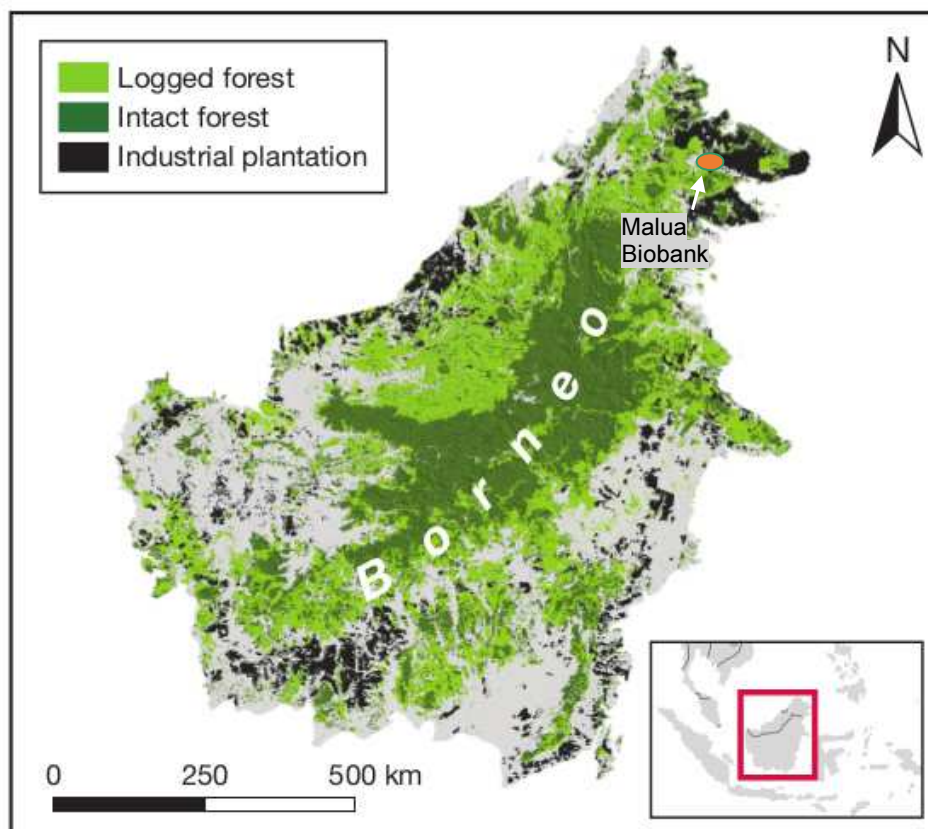
## Case Study on New Forests' Malua BioBank Initiative

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### Introduction

Malua Forest Reserve (MFR) is located in the Malaysian state of Sabah in the northeast of the island of Borneo (see Figure 1). It encompasses 340 km<sup>2</sup> (34,000 ha or 80,000 acres) of predominantly threatened lowland rainforest. In 2002 MFR, as part of a larger forest area, was recognised as supporting a significant population of orangutans—the largest unfragmented population of wild orangutans left in Malaysia (Ancrenaz *et al.*, 2010). MFR is also home to a large number of other threatened species, such as pygmy elephants, sun bears, banteng, clouded leopards, tarsiers and possibly even the Sumatran rhino.

**Figure 1** Location of the Malua BioBank, Sabah, Malaysia



Base map reproduced from PLoS One (Gaveau *et al.*, 2014, p. 6)

MFR was part of the Sabah government's commercial forest estate and had been logged since the 1960s. For decades, Sabah had had a thriving timber industry, but unsustainable logging pushed the industry into decline. These days, the forest estate is under much more direct threat from the expansion of palm oil plantations.

The government of Sabah understands the significance of its biodiversity, and the option value<sup>1</sup> it provides both to Sabah and to the world. The government has actively sought innovative solutions to financing forest conservation and transforming its forest estate into a long-term model of sustainable management. Recognizing the need to integrate biodiversity conservation and sustainable production, New Forests—a pioneering company that aims to create investment models around biodiversity conservation—forged a partnership with the Sabah government to create the Malua BioBank in 2008.<sup>2</sup>

The project's objective is to create a commercially sustainable model for financing large-scale conservation and rainforest restoration in the Malua Forest Reserve area in Sabah.

## **Partners**

The Malua BioBank is a joint venture between the Malua BioBank Company (Malua Wildlife Habitat Conservation Bank, Inc.) and the Sabah State Government. The Sabah Forestry Department (SFD) and Sabah Foundation (a state organisation) are key partners in the project with New Forests. The project contracts SFD to assist with the implementation of the Malua Conservation Management Plan, which was developed with guidance from biodiversity experts and support from local non-governmental organisations (NGOs). Working closely with SFD has ensured that there is local expertise to deliver the day-to-day requirements of the project as well as local ownership to ensure long-term commitment to the objectives of the BioBank.

An advisory committee, composed of local and international environmental groups and scientific experts, provides guidance on technical aspects of conservation and independent oversight of the project. The committee has helped to foster greater awareness of the project model and to ensure that there is support and buy-in from the environmental NGO sector.

## **Biobanking**

The concept of biobanks—the generation and trading of ‘credits’ from actions with beneficial biodiversity outcomes—is well over a decade old and now a billion-dollar global industry. In the United States, for example, programmes known as mitigation banking or conservation banking are regulated under federal law and require developers to offset impacts to wetlands, streams and endangered species habitat (Ring and Schröter-Schlaack, 2011). As far as I am aware, the concept of biobanks has been trialled in Southeast Asia, but perhaps nowhere else in the global tropical region.

## **How the Malua BioBank works**

The Malua BioBank is an asset of the Eco Products Fund (EPF), a private U.S. equity fund that invests in emerging environmental markets. The fund invests primarily in terrestrial carbon markets and wetland and stream mitigation banks in the United States. EPF is managed jointly by New Forests and Equator LLC and committed private equity of up to US\$10 million to manage MFR in the set-up phase; it is financing this project through the sale of voluntary biodiversity conservation certificates.

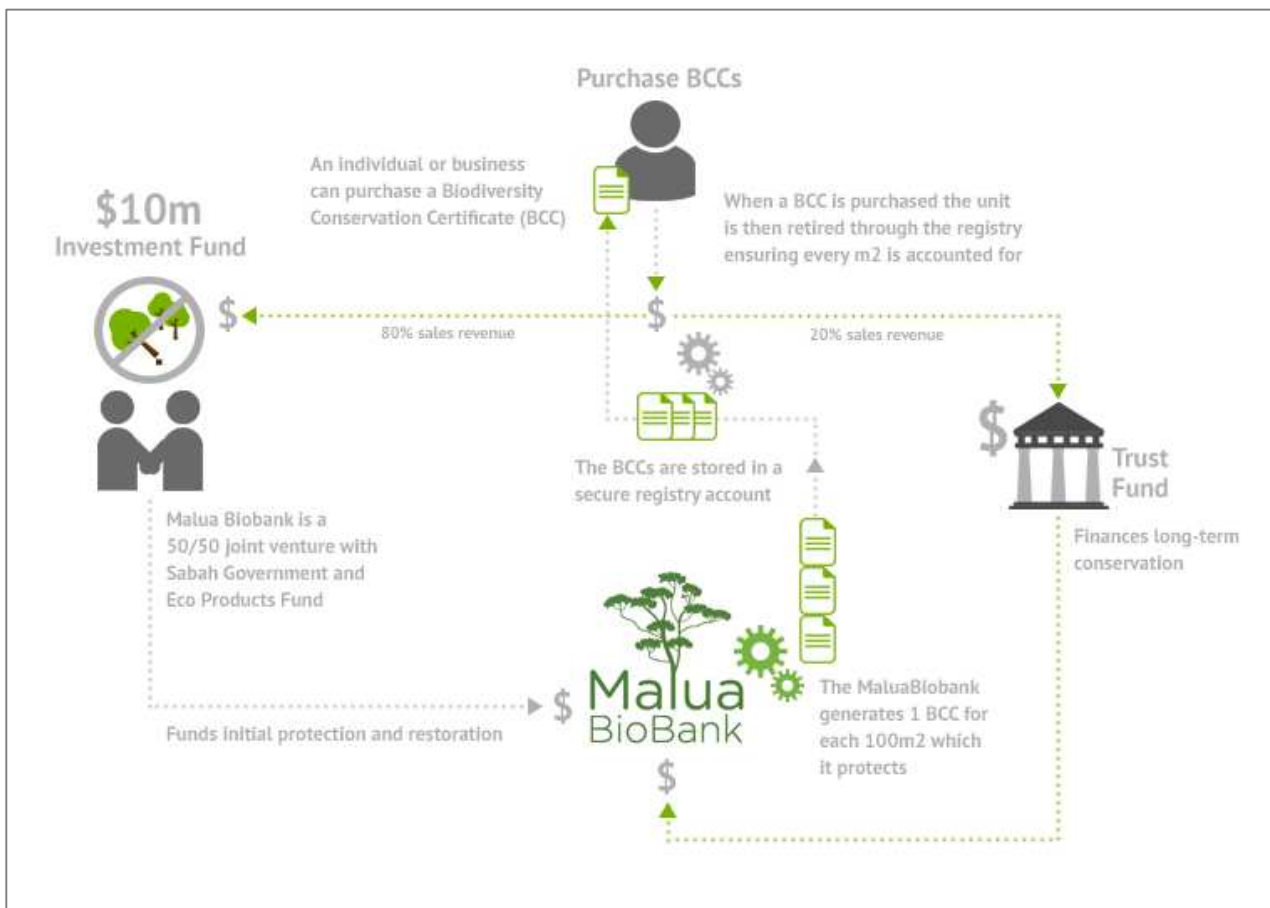
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<sup>1</sup> An ‘option value’ is not unlike an insurance premium an individual or entity agrees to pay to secure the supply of an environmental good in the future.

<sup>2</sup> The full name is Malua Wildlife Habitat Conservation Bank.

Each biodiversity conservation certificate for sale represents the restoration and protection of 100 m<sup>2</sup> of the Malua Forest Reserve. Revenue from the sales of certificates goes to covering the costs of management during the set-up phase and endowing a perpetual charitable trust. The Malua Trust will receive an annual income from the endowment funds to pay for the long-term management of the area. Any profit on certificate sales will generate returns for the private investors and the Sabah government (see Figure 2).

**Figure 2** How the Malua BioBank Works



Source: Malua BioBank (n.d.)

### Challenges and Opportunities

The investment thesis of the Malua BioBank is predicated on the increasing need of the oil palm industry to green its supply chain. Malaysia and Indonesia are the largest global producers and exporters of palm oil, which is used in a large number of food items, cosmetics and, increasingly, as a feedstock for biofuels. The production of palm oil in Malaysia and Indonesia has increased significantly in recent decades, most often on plantations on lands that were formerly rainforest.

The conversion of rainforest has had significant environmental effects, including the loss of habitat, the destruction of biodiversity (with significant impacts on globally recognized species such as orangutans) and emissions of carbon dioxide from forest destruction. Consumers in Europe and the United States are increasingly concerned about the environmental sustainability of palm oil and are demanding that products that contain palm oil be certified as being from sustainable sources.

In a voluntary market, the purchase of biodiversity certificates and offsets from the BioBank allows end buyers to support forest conservation and to gain a business advantage (such as an enhanced reputation), while generating commercial returns for the investor.

### **Conservation Success**

To date, the project has recorded great successes on the conservation front. Logging has been stopped and illegal activities, including illegal hunting, have decreased dramatically. EPF's investment was used to establish new forest checking stations and to equip ranger teams with vehicles, motorbikes and effective telecommunications systems. SFD conducts regular aerial surveys to identify any illegal logging activities within Malua. There has been no illegal logging since the project commenced.

Understanding and quantifying the level of poaching poses a much greater challenge. There has been improved security in Malua, with reduced access via roads (as all roads have security gates that are manned 24 hours) and the introduction of active patrolling along boundaries. Wildlife monitoring also commenced in 2009. Monitoring one of the key game species—the Sambar deer, which is illegally hunted—is a way to determine the level of hunting. The data indicates that the population of Sambar deer in southern Malua increased every year from 2009 to 2013, except in 2010. These findings suggest that there is less hunting pressure on this species due to the reduction in illegal hunting in Malua. The wildlife monitoring is ongoing and will continue to provide data on the management of illegal hunting.

With support from international and local scientists, SFD is carrying out a series of research projects, such as an inventory of the wildlife in the forest, ongoing population monitoring of orangutans, hornbills and species that are targeted for illegal hunting. Population and density monitoring of orangutans in different forest conditions has been undertaken for several years. The overall orangutan population in Malua appears to be relatively stable at approximately 530 individuals. Across Malua there is an average density of 1.56 individuals per km<sup>2</sup>, while orangutans are more abundant in the northern and eastern parts (Ancrenaz, 2011).

The wildlife research is documenting the value of Malua for a range of Borneo's threatened species and is helping to inform management. As noted above, Malua is not only a significant area for orangutans and pygmy elephants, but it is also likely to be a stronghold for banteng, one of Borneo's most threatened species. A PhD project that is currently under way in Malua is documenting the distribution, population numbers and ecology of this endangered species for the first time. Current conservation work in Malua includes the construction of orangutan bridges across the Malua River to reconnect members of the population and erecting nest boxes for hornbill breeding.

As already mentioned, an ongoing threat to Malua's biodiversity has been illegal hunting of wildlife. With much of the northern and eastern boundary adjoining palm oil plantations, it is difficult to prevent hunters from entering Malua exclusively through boundary patrols.

An innovation of the project has been the engagement of the palm oil companies in collaborative partnerships to address boundary issues and the management of wildlife on the plantations. In 2012, the Malua Wildlife Conservation Agreement was signed at the Heart of Borneo conference, and implementation is under way. The focus of the partnership is on improving boundary security within the plantations, recruiting and training oil palm workers as honorary wildlife wardens, managing human-wildlife conflict and improving environmental awareness of workers who live in the oil palm plantations and their families.

During the process of engagement with the companies and since the signing of the agreement, the increase in cooperation has been significant. The companies now have far greater awareness of the project and what it is trying to achieve. Regular meetings are held with palm oil company representatives, SFD and the Sabah Wildlife Department to assist with the implementation of the agreement. Plantation staff members collect standardised information on vehicles that enter through the plantation security gates; the data is then provided to SFD and any suspicious vehicles are reported. The companies have erected signs at key points to raise awareness that entering the Malua Forest Reserve is illegal. SFD staff members give regular presentations to plantation employees to increase awareness of and support for the project.

When the BioBank was established in 2008, the Malua Forest Reserve was zoned for commercial forestry. Without the agreement in place, commercial logging could have continued or—even worse—the forest could have been converted to oil palm plantations. With Malua recognised through the BioBank agreement as a significant conservation area, the Sabah government took a major step to strengthen protection by changing the status of MFR from commercial forestry (zone 2) to fully protected (zone 1) in June 2013.

The conservation success of the project can be traced back to the strong partnership between the Malua BioBank and the Sabah government. Champions within the government have demonstrated their personal commitment to conserving the forest, as well as a genuine interest in new approaches to conservation such as the United Nations Reducing Emissions from Deforestation and Forest Degradation (REDD) schemes or biodiversity certificates. This core group of champions enabled the project to be carried forward in spite of pressure to convert the area to oil palm or timber plantations.

On the ground, SFD staff members who had been working mostly as forestry officers embraced their new mission as conservationists, as they had seen the results of unsustainable logging and illegal activities firsthand.

Finally, a strong network of local NGOs provided the project with much-needed scientific capacity and technical support. Support was particularly required for the establishment of a wildlife monitoring program, one that would document the response of species to the removal of logging and illegal hunting, identify the species inhabiting Malua and inform management decisions. A wildlife monitoring plan was developed and staff members have been trained in both data collection methodologies and analysis for a range of monitoring, including orangutan density counts.

### **Lessons Learned and Future Innovation**

The commercial side of the project, which relies on the sale of biodiversity credits, has been more challenging. The main challenge faced by the Malua BioBank is the absence of a clear regulatory framework for biodiversity offsets in Malaysia, as well as the lack of commitment from the palm oil industry. The project was predicated on the development of a voluntary market for biodiversity credits based on the self-regulation of the palm oil industry. Since the global financial crisis, however, most of the palm oil growers have been focusing on maintaining their profit margins; they see sustainability issues as a luxury that they cannot afford. This situation clearly illustrates the risks entailed in a project that relies on the voluntary market.

In the absence of these drivers, a voluntary market is very unlikely to start or grow. In order to address the lack of a regulatory framework, the Sabah government has been considering the

development of a ‘no net loss’ policy for forests and the use of biodiversity offsets. Malua BioBank would be well placed to provide biodiversity credits if the government were to adopt such a policy. In a regulated market, the scalability of the project would make Malua an attractive proposition.

The stigma associated with ‘for-profit’ investment in conservation has increased the difficulty of trading biodiversity certificates in an immature market. In a voluntary market, private investors face high risk associated with investment; at the same time, some in the conservation area have expressed negativity about any model that seeks to raise profits from conservation activities. These entrenched positions will change as new financial examples and models emerge, but, for the time being, a degree of caution retards development of the sector.

## **Summary**

Malua BioBank has pioneered a groundbreaking and innovative mechanism for sustainable conservation financing in Malaysia and the region. It recognises the need to bring private investment into supporting the government to conserve significant conservation areas and seeks the financial support of private businesses and individuals to do so. By taking the BioBank model to tropical areas and emerging economies—where environmental solutions must also be economic solutions—Malua BioBank seeks to demonstrate the commercial value of natural capital. It is predicated on the fact that it is difficult to keep rainforest standing unless there are financial drivers to do so.

The project has revealed the importance of predictable demand. At the onset of the project, the voluntary markets seemed to be the best way to incorporate biodiversity considerations in the palm oil supply chain. Voluntary markets are usually quicker to develop and adapt than regulatory markets. It is now clear, however, that the demand generated by voluntary markets is less predictable than the demand created through regulation and enforcement, and that reliance on that demand thus carries a greater risk.

Although the project achieved considerable conservation success, the uncertainty surrounding its long-term commercial success remains an issue in any overall assessment of the model. Many of the commercial shortcomings could be overcome with the creation of a regulated market for biodiversity offsets, although the political challenge involved is not to be underestimated. As it stands, Malua BioBank represents a viable example of how to achieve conservation outcomes under the umbrella of commercialisation—at least in the short to medium term. As such, it marks at least a step along the way towards the innovative harnessing of a capitalistic, for-profit model in the service of preserving iconic conservation areas.

## Abbreviations

EPF	Eco Products Fund
MFR	Malua Forest Reserve
NGO	Non-governmental organization
SFD	Sabah Forestry Department

## References

- Ancrenaz, M. (2011) *Final Report: Impact of Different Rainforest Rehabilitation Treatments on Selected Iconic Wildlife Taxa in Malua/Segama Forest Reserve*. Unpublished report.
- Ancrenaz, M., Ambu, A., Sunjoto, I., *et al.* (2010) Recent Surveys in the Forests of Ulu Segama Malua, Sabah, Malaysia, Show that Orang-utans (*P. p. morio*) Can Be Maintained in Slightly Logged Forests. *PloS ONE*, **5**(7).
- Gaveau, D.L.A., Sloan, S., Molidena, E., *et al.* (2014). Four decades of forest persistence, clearance and logging on Borneo. *PLoS One*, **9**, e101654.
- Malua BioBank (n.d.) How Does It Work? Available at: [www.maluabank.com/explore.php?id=infographic](http://www.maluabank.com/explore.php?id=infographic).
- Ring, I. and Schröter-Schlaack, C., eds. (2011) *Instrument Mixes for Biodiversity Policies*. POLICYMIX Report No. 2. Leipzig: Helmholtz Centre for Environmental Research (UFZ).