



1.5 Ecosystem restoration in Indonesia's production forests: towards financial feasibility

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Introduction

In 2004 the Government of Indonesia took a new approach to the management of logged-out production forests. For the first time, production forests could be managed for restoration instead of logging. Ecosystem restoration licences¹ would support efforts to return deforested, degraded or damaged production forests to their "biological equilibrium,"² through logging bans³ and other initiatives. The logging ban regulation establishes a de facto moratorium on conversion of degraded forests to timber plantations or other uses. Ecosystem restoration licences are a strategic way to reverse the deforestation and degradation of Indonesia's production forests. These forests constitute approximately 80 million hectares (ha) of a total of 133 million ha of the country's forest estate. Presently, 25 million ha of production forest estate is not covered by any kind of licence, making it prone to illegal exploitation (Ministry of Forestry 2012).

ER licences must be held by an Indonesian business entity; this confirms the central role of the private sector in restoring logged-out natural forest concessions. While restoration activities are underway, ER licence holders may commercialize non-timber forest products (NTFPs) and ecosystem services such as biodiversity protection, ecotourism, water resources and carbon sequestration (Zaini 2010). The businesses must be financially and economically feasible and cannot conflict with restoration objectives. Furthermore, there should be an equitable sharing of benefits through job creation and other economic development activities with local communities.

The first ER licence was issued in 2008 to a joint initiative of Burung Indonesia, the Royal Society for the Protection of Birds and BirdLife International. Known as Hutan Harapan or the "Rainforest of Hope," the concession covers just over 98,000 ha of Sumatran lowland rainforest.



ECOSYSTEM RESTORATION IS A POLICY INNOVATION THAT PAVES THE WAY FOR A MULTI-PRODUCT FOREST MANAGEMENT BUSINESS.

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Since 2008, interest in ecosystem restoration concession (ERC) licences has increased steadily; as of March 2012 there were 44 applications from private companies (Ministry of Forestry 2012). In spite of this interest, only two other licences have been granted — in addition to *Restorasi Ekosistem Indonesia* (REKI), which manages Hutan Harapan by means of two licences — for a total of 198,350 ha.⁴ At this rate, it will be very difficult for the Ministry of Forestry (MoF) to achieve its target of 2.5 million ha for ERCs by 2014 (Ministry of Forestry 2010). Further, the interest of the early entrants into this new forestry sector may wane due to the long wait for licences.

The ER initiative has been well received, as evidenced by the private sector interest and a growing network of both national and international stakeholders. Nevertheless, two areas of concern may inhibit the financial feasibility of ERCs and ultimately their contribution to sustainable forest management: the ER licensing process; and business permits for non-timber commercial activities.

Sustainable forest management and ecosystem restoration business models

Ecosystem restoration in production forests is an innovative policy option that restores large forest areas, conserves biodiversity and develops a multi-product approach to forest use and management. ERC managers have the legal authority to manage the concession for habitat management, protection and restoration of the forest ecosystem. Although ER emerged in a context of addressing deforestation and forest degradation, Indonesia's national REDD+⁵ strategy recognizes the potential contribution of ER in REDD+ programmes and the co-benefits it provides from ecosystem services (UKP-PPP 2011).

Ecosystem restoration is a long-term process that will require sustained funding. Applications for an ER licence must include a business plan that outlines how revenue will be generated over the life of the concession licence, which may exceed 100 years. Business plans must take into account factors such as forest typology, flora and fauna, land tenure, economic development in the surrounding communities, and market opportunities.

Given the site-specific nature of ER a number of potential businesses can be developed. In the past four years alone three types of businesses have emerged: 1) restoring degraded ecosystems and biodiversity conservation; 2) carbon businesses; and 3) NTFP businesses and ecosystem services. This recognizes the multi-functionality of the forests and indicates a range of business opportunities offered by an ER licence (Table 1).

To date, three of the four licences issued have been to companies established by conservation organizations. *Hutan Harapan* was set up by a consortium of domestic and international conservation NGOs to halt the degradation and deforestation of the biodiversity-rich but threatened lowland rainforests in Jambi and South Sumatra. *Restorasi Habitat Orang Utan Indonesia* (RHOI) was established by a conservation NGO, the Borneo Orangutan Survival Foundation Indonesia (BOSF), with the support of its international network. RHOI's primary objectives are to return rescued orangutans to their natural forest habitat and generate income from carbon markets. The fourth licence was issued to *Ekosistem Katulistiwa Lestari* (EKL), a private company that targets NTFPs and ecosystem services as sources of income.

Table 1. Selected ecosystem restoration companies and their types of business

Name of company	NTFPs	Wood*	Conser- vation	Eco- tourism	Carbon	R&D
<i>Ekosistem Katulistiwa Lestari**</i>	√	√	X	√	X	—
<i>Indo Carbon Lestari</i>	√	X	X	X	√	—
<i>Restorasi Habitat Orang Utan**</i>	X	X	√	√	√	X
<i>Restorasi Ekosistem Indonesia**</i>	√	√	√	X	X	—
<i>Rimba Makmur Utama</i>	√	√	X	√	√	√
<i>Rimba Raya Conservation</i>	X	X	√	X	√	—

Source: Ministry of Forestry, 2012; PT REKI 2006; PT RHOI, 2009; PT EKL 2009 and personal communications.

* Note that timber may be cut after the forest has reached its biological equilibrium.

** Companies that have already been issued licences.

In addition, at least eight companies have business plans based on generating revenue from the carbon markets. From a REDD+ perspective, ERCs are a viable business model for several reasons:

- management of the concession is based on habitat restoration and rehabilitation;
- with secure land tenure, the concession has a legitimate authority to effectively manage the area;
- monitoring and safeguarding an area from illegal exploitation can be conducted more effectively; and
- there is the potential to obtain financing through a carbon credit (REDD) project (Mazars Starling Resources 2011; Madeira et al. 2010), although all of these companies are still waiting for their applications to be approved.

Whether the motivation is philanthropic or purely commercial, ER licences are in demand. Companies have been successful in attracting investors despite numerous risks: land tenure conflicts, volatile markets, uncertain viability of the restoration strategy and lack of long-term funding from commercial banks. Nevertheless, aside from the four licences already issued, only seven applications are being processed by the MoF. The remaining applicants have been rejected or have not yet met administrative and technical requirements (Ministry of Forestry 2012). Based on the experience of the companies that have received an ERC licence, the process took from 14 to 36 months. The slow process is best illustrated by the six ERC applications submitted in 2009 that have yet to be finalized.

ERCs are relatively new and as yet there is no evidence to indicate that they are financially viable (Box 1). Nevertheless, a study by Bogor Agricultural University (2009) indicates that ERCs are viable over the long-term if multi-product businesses are developed. Subsequent studies have found that a multi-product approach is necessary to ensure financial viability, but the start-up costs are high; one study estimates that US\$ 14–18 million is needed in the first six years of operation (Idris 2010; Idris 2011). Unnecessary delays in processing licences will contribute to higher costs since these delays may limit opportunities to secure long-term financing for the concessions.

Box 1. Creating a financially viable ERC

Hutan Harapan's business model is based on funding from international donor organizations. A portfolio of diversified income sources is being developed, but this will take time. The initiative has already attracted financial support from Singapore Airlines through a trust fund, indicating that there are possibilities for developing innovative funding sources. Efforts are being made to develop markets for a number of NTFPs, but their viability will not be apparent for a number of years. Carbon markets are another potential source of income.

In addition to delays in obtaining an ERC, the licensing fee is another barrier. RHOI, for example, argued that it should not have to pay the US\$1.4 million fee⁶ for its concession because ER is designed to restore forest ecosystems, not to exploit timber. This position was rejected by the MoF, however, and RHOI eventually paid. The licensing fee is part of a larger debate over the need for a comprehensive economic incentive package for ERCs that will allow them to be competitive with other types of land uses.

Licensing delays also put at risk forests ecosystems and their biodiversity since the 25 million ha of production forest estate are not covered by any kind of forest licence. In the case of the Hutan Harapan Rainforest ER concession, there was a gap of two years

between the time it received its first licence for 50,000 ha in South Sumatra and its second licence, for a forest block located in Jambi. During that time, an estimated 3,318 ha was occupied and illegally converted to other uses such as palm oil plantations and agriculture. Encroachment creates additional costs for both restoration and resolving land conflicts.

According to Forestry Law 41/1999, the exploitation of Indonesia's forests resources is commodity-based: there must be a permit for each commodity to be developed for market. ERCs are no exception.

Under the ER policy the MoF must prepare a financing scheme to allow the ERC holders to generate revenue while forests return to their biological and ecosystem equilibrium (Zaini 2010).

As a result, in addition to the ERC licence, other permits may be needed, depending on the business activities that will be developed. While restoration activities are underway, ER concession holders can be given three categories of permits: area use; environmental services; and NTFPs (Table 2). These permits allow the concession holders to generate revenue while carrying out restoration activities. At the same time, the requirement that every commodity, including carbon, must have a separate licence ignores the costs involved in processing applications.



Table 2. Summary of potential forest utilization businesses in an ERC

Environmental services	Area use	Non-timber forest products
water	cultivation of medicinal plants	rattan, sago, palm, bamboo (includes planting, harvesting, enrichment, maintenance, security and marketing)
nature tourism	cultivation of ornamental plants	
protection of biodiversity, saving and protecting the environment	cultivation of mushrooms	sap, bark, leaves, fruit and grain
carbon storage	beekeeping	
	raising animals	Gaharu wood (includes harvesting, enrichment, maintenance, security and marketing)

Source: Zaini 2010

A viability analysis found that ER businesses are much more financially sensitive to revenue decreases than to cost increases. Developing a mixture of commodities that have market potential will increase business viability. An enabling environment that supports revenue generation will ensure greater viability of the ER business model (Bogor Agricultural University 2009). Although government regulations recognize the importance of a multi-product model for ERC businesses (see Table 2), little attention has been paid to increasing revenue streams for ERCs. Supporting regulations have yet to be developed for NTFPs, ecosystem services and area use that would allow ERC holders to generate revenue from these alternative sources.

Lessons learned

ER has the potential to make a significant contribution to SFM. Although it has made possible multi-product forest management, ER regulations alone are insufficient. The still dominant timber forest approach must give way before multi-product forest management becomes a reality. This will necessitate changes in attitudes, behaviour and institutions.

As a new forest business opportunity, ER has attracted investors. In the course of the application process, however, it has become apparent that ERCs are burdened with initial costs (including the licensing process), which are structured the same way as those for a timber-logging company.

The greater challenge is yet to be met. ER is sensitive to revenues rather than costs, which can best be addressed by developing a multi-forest product business. Unfortunately, under the current regulation scheme there are multiple commodity-based permit costs. The business case for multi-forest products must be studied further. In addition, supporting regulations are



needed that will promote income generation for a range of ecosystem services without creating an additional cost.

Not all of the constraints in the ER regulations can be reduced to technical issues such as the need to speed up the application process or creating incentives. There are political issues that can be better facilitated through engaging stakeholders in formulating policy recommendations. The ER constituency — licence holders, applicants and supporters — may need to create legal associations that can make representations to the government and develop broader public support.

Conclusion

ER is an ambitious initiative that promises to restore degraded and deforested areas, conserve biodiversity, improve forest management and provide a multi-product approach to forest resource use while simultaneously contributing to reducing carbon emissions. With 44 applications, investor interest is strong and there are a number of business models ready to take advantage of this new opportunity. Nevertheless, the long application process for obtaining licences, along with the lack of incentives and difficulties in pursuing alternative revenue streams, are potential barriers to the financial feasibility of ERCs and ultimately to their long-term development. Experience with developing ER regulations indicates that the shift to a multi-product approach is far from complete.

Overcoming the challenges facing ER development requires concerted action by the various stakeholders. An ER association could increase bargaining power, foster alliances with key actors in the finance sector and link with other business groups in the forest supply chain. An ER forum could work with stakeholders at the district and national level to increase knowledge of the benefits of ER to the local economy and ecosystem. In addition, the government needs to further strengthen the enabling environment and make the multi-product forest paradigm a reality.

Acknowledgement

This paper drew heavily on the following document: Walsh, T., Asmui, Y. Hidayanto and A.B. Utomo. 2012. *Supporting Ecosystem Restoration Concessions in Indonesia's Production Forests: A Review of the Licensing Framework 2004–2012*. Burung Indonesia, Bogor, Indonesia.

Endnotes

1. Ecosystem Restoration Timber Forest Utilization Licences for Natural Forest in Production Forest - IUPHHK-RE.
2. Biological and ecosystem equilibrium is not defined in government regulations, but in future it may be defined at the Ministerial Regulation level. Government Regulation 6/2007 Chapter 1, Article 14 makes reference to it, but does not provide a concise definition: "An ecosystem restoration permit (*IUPHHK Restorasi Ekosistem*) in natural forests is a permit to develop the area in a natural forest ecosystem production forest so as to maintain the functions and representativeness through maintenance activities, protection and restoration of forest ecosystems, including planting, enrichment, thinning, wildlife breeding, release of flora and fauna to return the element

biodiversity (flora and fauna) as well as non-biological elements (soil, climate and topography) in an area to the original type, in order to reach biological and ecosystem equilibrium.”

3. Decree 159/Menhut-II/2004; Government Regulation No.6/2007.
4. The two companies are: 1) the Borneo Orangutan Survival Foundation (BOSF)/*Restorasi Habitat Orangutan Indonesia* (RHOI) for an 86,450-ha ERC in east Kalimantan and; 2) *Ekosistem Katulistiwa Lestari* (EKL) for a 14,080-ha concession in west Kalimantan.
5. REDD+ refers to actions that reduce emissions from deforestation and forest degradation and enhancement of forest carbon stock. See UKP-PPP 2011.
6. The fee is calculated based on geographic location and concession size.

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