# NON-PERMANENCE RISK REPORT RIMBA RAYA BIODIVERSITY RESERVE PROJECT

# YEAR 2 MONITORING REPORT

# (JULY 2010 - JUNE 2013)

Document Prepared By Infinite Earth

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# 1 INTERNAL RISK

## 1.1 Project Management

The management team maintains a presence in the country, with a field office in the project area (staffed jointly by Rimba Raya and OFI staff) and one in the capital city of Jakarta:

**Field Office:** Jalan Hasanudin Nomor 10, Pangkaln Bun, 74111 Kalimantan Tengah
**Jakarta Office:** Mayapada Tower, 11th Floor Jalan Sudirman Kav 28, Jakarta Selatan 12920, INDONESIATel: +6221 5289 7446 & Fax: +6221 5289 7399

The day to day project management and implementation of project activities will be managed by the Project Proponent and implementing partners as listed in the PD and Monitoring Report. InfiniteEARTH has established an experienced management team at the executive, managerial and operational field levels. Where key staff positions are not currently filled, a systematic plan for roles and function of the remaining positions has been identified and the persons responsible for those duties in the interim period have been assigned. Apart from its core team, InfiniteEARTH has secured either partnerships or contractual agreements with relevant NGOs and expert consulting firms to support its core staff.

The Project acknowledges that ongoing enforcement to prevent encroachment by outside actors is required to protect (potentially) more than 50% of the carbon stocks on which GHG credits have been previously issued. This encroachment comes from two outside actors;

1. The identified agent of deforestation, PT BEST poses a threat at his verification period at the northern boundary. This has been mitigated through dialogue with the agent through active blocking of drains and replanting with native species in the incursion zone as well as formal recognition by the district forest authority of a boundary breach into Rimba Raya concession.

2. Local communities accidently (and intentionally) burning inside the carbon accounting boundary. This is a particular issue along the Seruyan River side of the Project Boundary and the southern most end of the project area. The Project recognises that fire is a more substantial ongoing risk and requires more intensive engagement with the communities. Fire training, increased access to sustainable livelihoods through the rehabilitation of degraded areas with mixed native species such ascash crops of jalutan and gambor combined with fruit trees and non-cash species combined with incentives to reduce burn activity such as through the Health and Harmony program will add to reducing this risk over time.

## 1.2 Financial Viability

InfiniteEARTH has executed forward sales triggered upon the first verification that will create an endowment which will sufficiently fund the operational budget through an annuity for the entire life of the project and possibly in perpetuity.

**Project Breakeven: The Project cash flow breakeven point is less than 4 years from the current risk assessment. The Project has secured 80% or more of the finding needed to cover the total cash out before the Project breaks even.**

First Verification credits some which were delivered to Allianz have funded operations for 1-2 years through 2014 (well beyond the 2nd Verification). The project is cash flow positive on the first verification. Upon delivery of additional presold credits from the 2nd verification to both Aliianz and other buyers, the InfiniteEarth again with more than 2+ years of operating capital past 2016. InfiniteEarth plans to verify every year given the volume of credits involved.

**Evidence:** Confidential budgets will be shared with the verifier.

### 1.3 Opportunity Cost

The alternative land use scenario for the Rimba Raya Project Area is conversion to Palm Oil. Palm oil produces high net revenues and financial returns for the palm oil company and the Government through royalties.
The Project Proponent has committed to deliver equivalent tax and royalty payments to the Government as they would receive under the baseline scenario landuse (i.e. palm oil).

The opportunity cost of land-use change is defined as the amount of financial gain per ton of carbon dioxide equivalent ($CO_2$-e) emitted from a particular change in land use, such as removing a forest and replacing it with an oil palm plantation.

Based on two recent studies of on the opportunity cost of implementing REDD+ projects over palm oil found that the international price of palm oil is the main driver of NPV (Net Present Value). A recent study (Heli et al, 2013) found that the profitability gap (the difference between NPV of palm oil and carbon) ranged between 150.6% and 237.6%.

The Project has conducted its own NPV analysis utilising information and supporting references presented in this peer reviewed papers. The NPV analysis covers the project crediting period (2009 – 2039).
Figures for the REDD+ project scenario were taken from the Projects accounting using VM0004 nad actual and estimated costs. A conservative revenue from GHG sales of $5 per credit was applied which is below the average reported in the Ecosystems Marketplace annual report for 2012 of $7.
The details for the palm oil baseline scenario were collated from Heli Lu and Guifang Liu, 2013; Sargeant, 2001 and World Bank, 2009. The financial discount rate applied was 5%.

All sources of the information are presented in the NPV spreadsheet provided as supporting evidence to this risk assessment.

The results of the NPV analysis determined that the NPV of palm oil production was more than 200% more than the Project Activity.

Therefore the Project applied the highest opportunity cost rating possible in the risk assessment.

If there is a high opportunity cost, areas may be at a high risk of conversion. The methodology handles this risk through the requirement to maintain a significant buffer area around the carbon accounting area and to track, account for and report emissions from deforestation as well as activity shifting leakage.

**Evidence:** Refer to attached spreadsheet for detail of NPV analysis.

### 1.4 Project Longevity

Project activities will be maintained for 60 years from the beginning of the project start date (i.e. Project longevity). This is longer than the project crediting period (i.e. 30 years) as the licence granted over the project is for 60 years. (30 years + 30 years renewable).

This licence held by the Project and the intention to set up a perpetual fund for the Project management and activities demonstrates that appropriate licenses and funds will be available to ensure continued activities beyond the project crediting period.

**Evidence:** Stakeholder agreements/decrees (including maps) have been provided to the verifier. In summary these agreements demonstrate the Projects requirement for the protection of the area.

After more than two years of efforts, Infinite Earth has secured the Right of Use to Project Area which is documented in Project Working Area Map (Figure 1) authorised by the Forestry Minister and signed by the Director General of the Planning Department, and the following legal documents:

- Government Decree Number SK 146
- Collaborative Agreement (PT RRC and Tanjung Putting National Park)
- MoU BEST-RRC_Land-authority Transfer

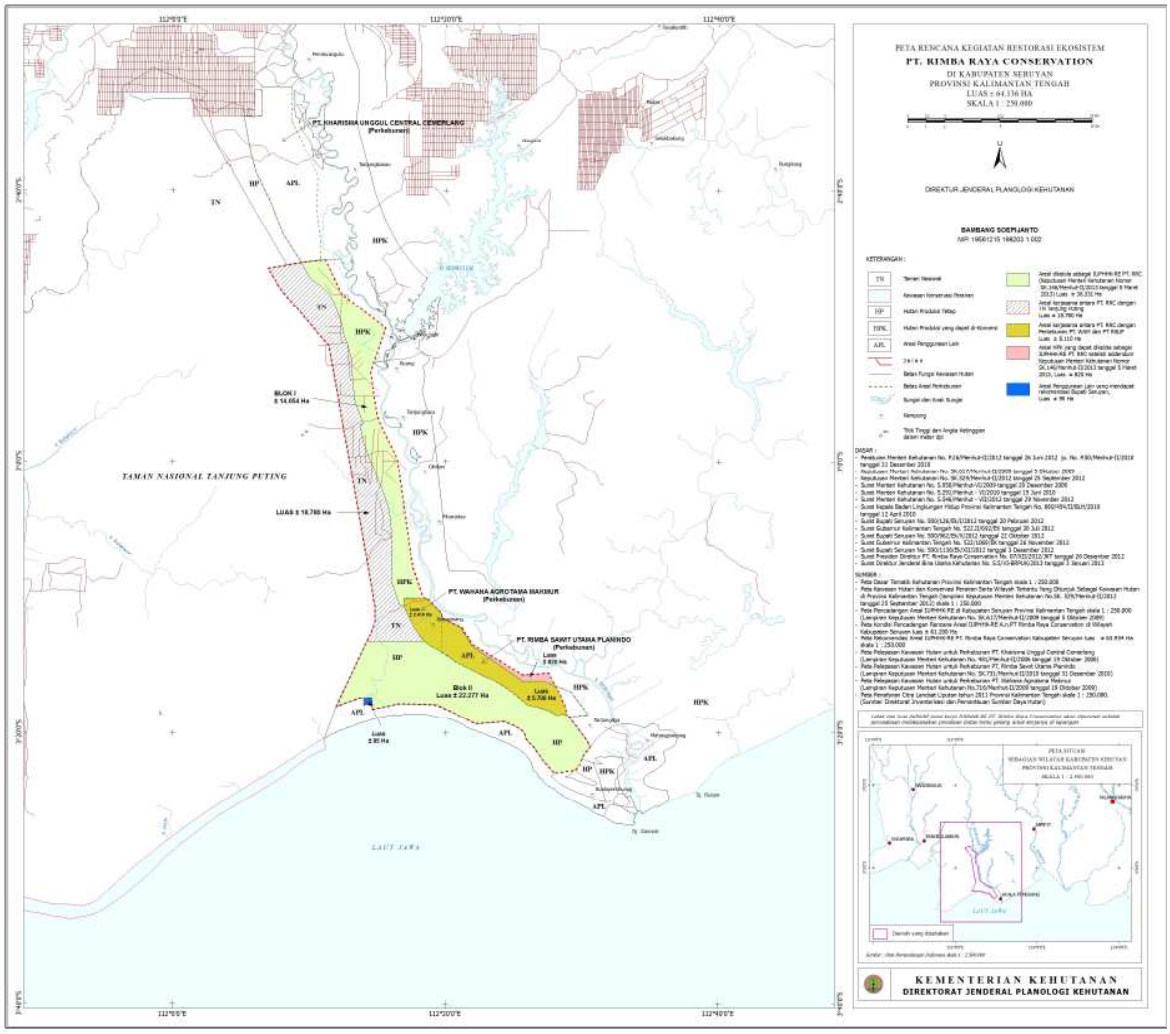


**Figure 1: Official Working Area Map**

Decree number SK 146, grants concession of the project area comprising 36, 331 hectares where right of use is specifically stipulated in the third stipulation (subsection 1), which states "(1) Conduct activities and acquire benefits from the results of its business in accordance with this license." The specifics of the license are spelled out within the decree and are defined by the allowable forest management activities (IUPHHK-RE – forest ecosystem restoration). Additionally the Collaborative Agreement between Tanjung Putting National Park and PT Rimba Raya Conservation includes verbiage defining the carbon rights, as well as its connection to government decree number SK 146. Article 1 (section 10) states "Full responsibility to fund the operation and conservation areas (including fire protection) will be borne by PT Rimba Raya Conservation, where PT Rimba Raya Conservation project will last for a period of 30 years (+30 years) and all the emission reductions due to conservation in this area will be recognized as rights of PT Rimba Raya Conservation." In addition, article 1 (section 8 states "Creating buffer zone for Tanjung Puting National Park as set in the Technical proposal IUPHHK-RE PT. PRC which delivered on October 20, 2009 at the Directorate General of Forestry Production."

The final parcels of the right of use areas identified in the working area map approved by the Director General of the Planning Department were attained by the project through an agreement between PT Rimba Raya Conservation and PT Best. Three main documents are relevant to these lands; MoU BEST-RRC_Land-authority Transfer, government Decree number SK 716, and government decree number SK 731. As concession of the final two parcels of the project area was initially granted to holding companies of PT Bes (PT Wahana Agrotama Makmur Perkasa (2,394 hectares) and PT Rimba Sawit Utama Planindo (6, 512 hectares,) the concession holder created a contract giving control of these lands to PT Rimba Raya Conservation. The transfer of these rights to PT Rimba Raya has the approval of the Forestry Minister and the Director General of Planning as noted by the signed working area map.

Therefore the Project has all necessary documents in place that demonstrate user rights and the support of the Forest Authority and Director General of Planning and as part of the agreement is legally required to protect the areas defined in the working area map. The circa 8,800 hectares currently under MOU with PT BEST are currently undergoing the formal process of conversion to IUPHHK-RE – forest ecosystem restoration, however the working area map represents the official project and government position on the long term protection of this area.

## 2 EXTERNAL RISK

### 2.1 Land Tenure and Resource Access Impacts

Forest land is owned by the Government of Indonesia and User Rights are allocated under a process of allocating concessions; therefore the ownership and the resource access/user rights are held by different entities (i.e. the land is government owned and the project proponent holds a lease or concession).

**Evidence:** Stakeholder agreements/decrees (including maps) have been provided to the verifier

The agreement types with the relevant stakeholders are presented in Table 1

**Table 1: User Rights Agreements as Presented in the Working Area Map**

| Name (on Map) | Area (ha) | Agreement Summary |
|---|---|---|
| Blok I (Green) | 14,054 | An official governmental decree for +/- 36,331 ha, which conveys land-use rights outright. |
| Blok II (Green) | 22,277 | |
| TPNP (hashed area) | 18,780 | An official governmental cooperation agreement with the National Park authority, which conveys rights and responsibilities to manage another +/- 18,780 ha on their behalf. |
| PT Wahana Agrotama Makmur | 2,410 | A commercial agreement from the palm oil company to manage another 8930 ha for conservation until such time as the government could revoke their license and reissue to us. Additionally, we have a letter from them to the Minister of Forestry asking him to do so. |
| PT Rimba Sawit Utama Planindo (included pink polygon to the north) | 6,520 | |
| APL (blue polygon) | 95 | This area is covered under the working map agreement and the land use will be converted to an ERC license to ensure this area can never be legally converted to oil palm. |

These agreements demonstrate that there are no outstanding disputes over land tenure, ownership or access/user rights. It should be noted here that the breach of the northern boundary of the Rimba Raya concession occurred immediately prior to the finalisation of the agreements in early 2013. This boundary breach was seen as an opportunistic event by the agent of deforestation. The agreements are now finalised and restorative work has commenced by the Project proponent. The Project is now operational and will uphold the legally binding commitment to the long term protection of the Rimba Raya Biodiversity Reserve.

## 2.2 Community Engagement

InfiniteEARTH has focused intensively on community engagement in the design and approach to community development activities in the Rimba Raya area to achieve validation against the Climate, Community and Biodiversity Standard.

There are no established communities within the Project Boundaries.

More than 20% of the communities who live within 20km of the Project boundaries and who rely on resources within the Project Area (such as fishing and subsistence agriculture) were consulted throughout the CCB project development stage and continue to be the focus of the on-going community consultation being delivered by World Education.

**Evidence:**
According to the official District desa (village) map (Figure 2) there are 22 officially named villages within the 20km buffer of the Project Carbon Accounting Area.[1]

[1] Note there are 6 points with no name and are not considered 'official' permanent desa (or villages).

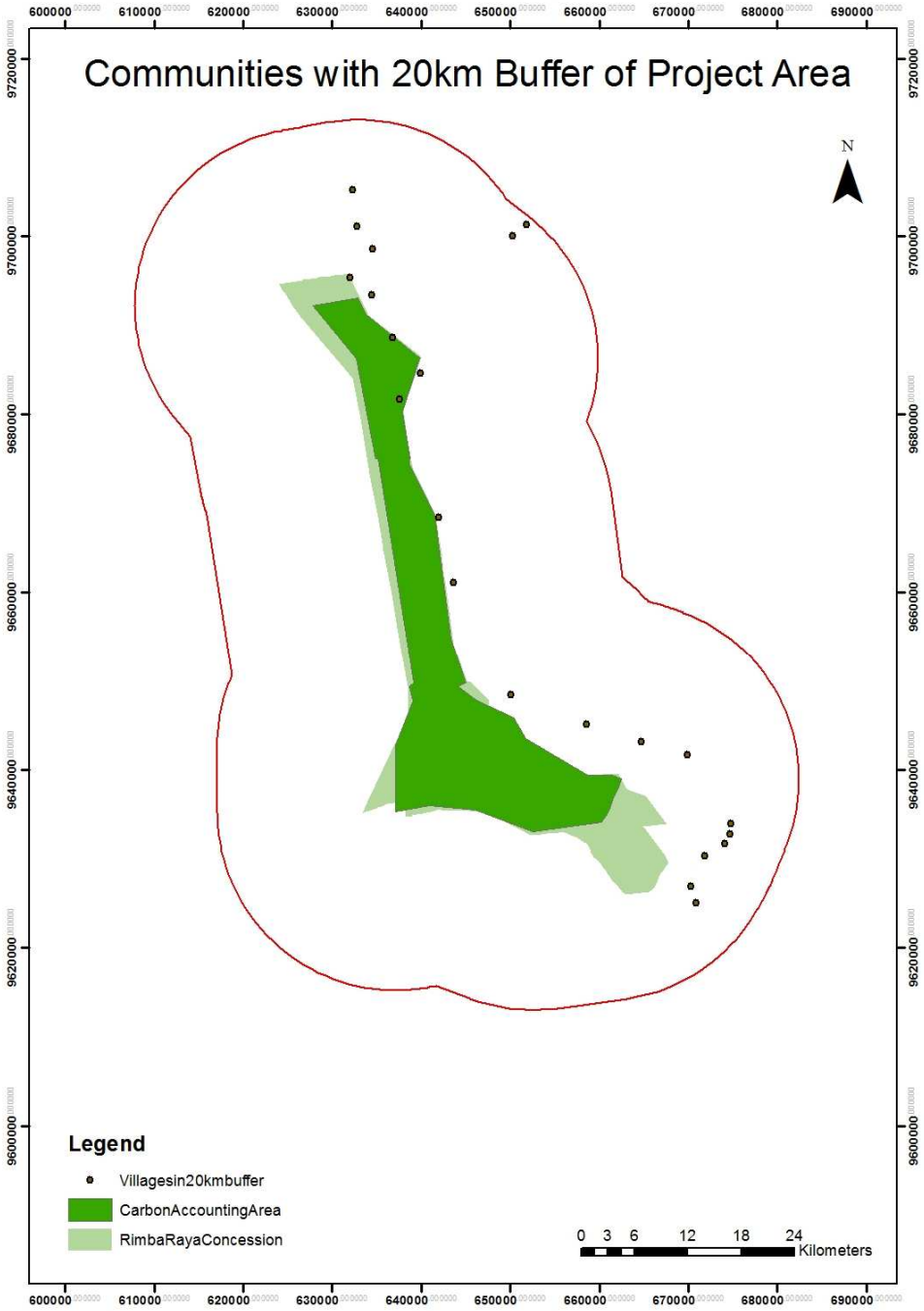


**Figure 2: Community Locations with 20km Buffer of Project Area**

Fourteen (14) of these villages are part of the Project benefit sharing commitments. The Project has conducted extensive community consultation within these villages since 2009 (lead by World Education. Population statistics within the villages reported by the Seruyan District Population Census 2012 are presented in

Table **2**.

**Table 2: Village Population Statistics within 20km buffer of Project Area. (Shaded villages in direct Project Consultation Program)**

| DESA (Village) | Seruyan District Population 2012 Census |
|---|---|
| Kuala Pembuang Satu | 8564 |
| Kuala Pembuang Dua | 8430 |
| Pematang Limau | 2269 |
| Pematang Panjang | 3164 |
| Kaartika Bhakti | 1199 |
| Bangun Harja | 791 |
| Halimaung Jaya | 461 |
| Mekar Indah | 704 |
| Tanggul Harapan | Not reported in the Seruyan Statistics |
| Tanjung Rangas | 3333 |
| Muara Dua | 471 |
| Jahitan | 417 |
| Baung | 1434 |
| Telaga Pulang | 1512 |
| Cempaka Baru | 508 |
| Palingkau | 144 |
| Ulak Batu | 194 |
| Paren | 688 |
| Banua Usang | 822 |
| Taanjung Hanau | 846 |
| Sembuluh I | 4908 |
| Sembuluh II | 1802 |
| **Total** | **42,661** |

According to the Seruyan District population data the population of the 14 villages, which are the focus of the targeted community consultation conducted by World Education, was 10,369. This equates to 24% of the population with a 20km radius of the Carbon Accounting Area have been consulted which exceeds the required 20% for this Community Engagement Risk Criteria.

## 2.3 Political Risk

The mean Governance Scores across the six indicators of the World Bank Institute's Worldwide Governance Indicators (WGI) (**Error! Reference source not found.**), averaged over the most recent five years of available data (2007, 2008, 2009, 2010, 2011) was found to be -0.48.

**Evidence:** Output of WGI calculator

**Table 3: WGI Governance Score**

| Governance Indicator | Sources | Year | Percentile Rank (0-100) | Governance Score (-2.5 to +2.5) |
|---|---|---|---|---|
| Voice and Accountability | 15 | 2011 | 46.9 | -0.08 |
| | 15 | 2010 | 47.4 | -0.09 |
| | 15 | 2009 | 46.4 | -0.05 |
| | 15 | 2008 | 46.2 | -0.08 |
| | 15 | 2007 | 46.2 | -0.09 |
| Political Stability/Absence of Violence | 8 | 2011 | 21.2 | -0.82 |
| | 8 | 2010 | 20.3 | -0.86 |
| | 8 | 2009 | 21.3 | -0.76 |
| | 8 | 2008 | 15.8 | -1.07 |
| | 8 | 2007 | 13 | -1.19 |
| Government Effectiveness | 10 | 2011 | 46.9 | -0.24 |
| | 10 | 2010 | 47.8 | -0.19 |
| | 10 | 2009 | 46.4 | -0.26 |
| | 10 | 2008 | 46.1 | -0.23 |
| | 11 | 2007 | 45.6 | -0.27 |
| Regulatory Quality | 10 | 2011 | 41.7 | -0.33 |
| | 10 | 2010 | 40.2 | -0.36 |
| | 10 | 2009 | 43.1 | -0.3 |
| | 10 | 2008 | 45.6 | -0.29 |
| | 11 | 2007 | 42.2 | -0.3 |
| Rule of Law | 15 | 2011 | 30.5 | -0.66 |
| | 15 | 2010 | 31.3 | -0.64 |
| | 15 | 2009 | 33.6 | -0.6 |
| | 15 | 2008 | 31.7 | -0.64 |
| | 16 | 2007 | 30.6 | -0.65 |
| Control of Corruption | 14 | 2011 | 28.4 | -0.66 |
| | 14 | 2010 | 26.3 | -0.74 |
| | 14 | 2009 | 22 | -0.81 |
| | 14 | 2008 | 34 | -0.56 |
| | 15 | 2007 | 33.5 | -0.59 |
| **Average** | | | | **-0.4803** |

**Mitigation: Indonesian REDD Readiness**

# 3 NATURAL RISK

## 3.1 Fire

Fire is considered to be the only natural risk to the Project Area. The frequency and severity of fire on the Project Area is determined by the severity of the El Niño events. El Niño is defined by prolonged differences in the Pacific Ocean sea surface temperatures when compared with the average value. The accepted definition is a warming or cooling of at least 0.5°C (0.9°F) averaged over the east-central tropical Pacific Ocean. Typically, this anomaly happens at irregular intervals of two to 12 years, and lasts nine months to two years. El Niño episodes are defined as sustained warming of the central and eastern tropical Pacific Ocean leading to periods of drought. This drying increases the fire risk.

Large parts of Borneo have been subject to (still ongoing) land clearance, peatland draining and general forest degradation activities over many decades, resulting in a landscape where huge areas of the natural ecosystem have been replaced by degraded, converted, or managed cover types, with many anthropic ignition events and vegetation fires. When such changes are accompanied by extreme drought, which in Borneo are usually associated El Nĩno (i.e. warm ENSO) conditions, areas of normally moist peatland and forest can much more easily dry, ignite and burn than would otherwise be the case (Wooster et al, 2012).

In the absence of the baseline activity (land clearing, peat draining) the significance of fire is reduce substantially as forest fires are generally rare in Borneo[2] and are related to small scale swiddon agricultural practices.

### 3.1.1 Significance (Fire)

The significance of loss from fire is considered minor (5% to less than 25% loss of carbon stocks) as the small scale fires from shifting agriculture in the area are generally contained. The area surrounding the project Area has already been converted to palm oil and therefore restricting the fires to small scale activities only. In addition the Project Area borders a National Park along one side reducing the entry points of fire from both large scale deforestation activities and small scale agriculture.

As a worst case scenario, taking the average area burnt in Borneo, a recent study of the extent of small scale fires in Borneo found that approximately 1% of Borneo is (i.e. 700,000 hectares if the total land area of 74.3 million hectares) was burnt in small scale fires in 2005 (Miettinen et al, 2007). These small scale fires were detected using 30x30m resolution but were not detected at 50x50m resolution. This study gives an indication of the scale extent of the fires.
As the carbon stocks are developed on a per hectare basis and the annual loss from fire is not expected to exceed the national average from small scale activities of approximately 1% of the Project Area (approximately 470ha).

### 3.1.2 Likelihood (Fire)

The likelihood of a fire event is considered high (less than every 10 years).

### 3.1.3 Score (LS) (Fire)

The LS score is therefore 5.

### 3.1.4 Mitigation (Fire)

Fire mitigation is defined as 1 in recognition that even though Project partners OFI have a proven history in the area of containing fire through rapid fire detection and containment activities. These activities have not been financially supported during the 2010 – 2013 monitoring period and may have contributed to the

[2] http://www.mongabay.com/borneo.html#fires

extent of the fires reporting in 2011 and 2012. Financial support for patrols and fire response commenced upon finalisation of the concessions in early 2013.

### 3.2 Pest and Disease

An assessment into the major threats from pest and diseases in Indonesian Forest found that outbreaks of pests and diseases have occurred in natural forests in Indonesia in the past (Nair, 2000). These outbreaks have primarily been reported in areas where extractive activities (i.e. resin tapping) have been conducted. Whilst the study did report that the native *Pinus merkusii* from the neighbouring island of Sumatra has a serious pest problem it acknowledges that on the whole natural forest are unlikely to be wiped out by pest/disease because it has evolutionary outlived such an eventuality. In support of this the FAO report (FAO, 2007) there are no known information on pest and diseases in Indonesian natural forests.

#### 3.2.1 Significance (Pest and Disease)

The significance of loss from pest and disease is considered minor (5% to less than 25% loss of carbon stocks) as the effect is generally a loss of foliage and the literature did not indicate significant death or permanent loss events in natural forest. Also given that the forest represents a small stock of carbon in this project relative to the peat pool a minor rating is considered appropriate. Loss of tree cover in the absence of drainage is unlikely to significantly impact the peat pool.

#### 3.2.2 Likelihood (Pest and Disease)

The likelihood of a fire event is considered to be every 50 to less than 100 years based on observations reported in the reference provided of pest and disease presence in native forests in 1930's and not since then.

#### 3.2.3 Score (LS) (Pest and Disease)

The LS score is therefore 0.

#### 3.2.4 Mitigation (Pest and Disease)

None

**Evidence:** Nair, 2000 and FAO, 2007

#### 3.2.5 Extreme Weather

The risk of drought and El Niño events manifest themselves as fires and is assessed under the risk of fire above.

Weather in Borneo is equatorial, characterized by two main seasons – a wet one starting in November and ending in March and a dry one starting in March and ending in November. Borneo does not register on the World Banks natural disaster hotspots global risk register for cyclones, floods, earthquakes, volcanoes or landslides.[3]

[3] http://www.preventionweb.net/files/1100_Hotspots.pdf#page=75

### 3.2.6 Significance (Extreme Weather)

The significance of an extreme weather event was assessed as 5% to 25% of the carbon stock as an event such as wind blow would affected only the tree carbon stock (not the peat) and the carbon stock in the aboveground biomass is between 5-10% of the per hectare estimate.

### 3.2.7 Likelihood (Extreme Weather)

The likelihood of the event was conservatively assumed to be every 25 to less than 50 years.

### 3.2.8 Score (LS) (Extreme Weather)

The LS score is therefore 2.

### 3.2.9 Mitigation (Extreme Weather)

None

### 3.2.10 Geological Risk

The Project Area is in an area considered to be an area of low risk of geological activity (**Error! Reference source not found.**). The US Geological Survey (Peterson et. al., 2007) states, "*The published literature and maps of Indonesian Kalimantan contain no information on Quaternary faults and folds, even on a regional scale. A few significant historical earthquakes have occurred east of long. 115° E., but there has been no*
*significant seismicity west of long. 115°E. We have no geologic or geomorphic information that can contribute to a seismic hazard map for this area.*" The region of the Project Area is at low geological Risk.

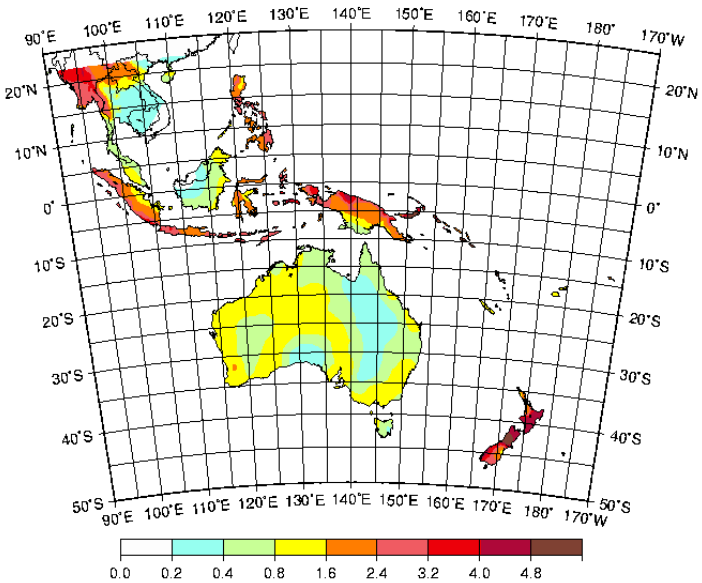


Figure 3: Global Seismic Hazard Assessment Program[4]

[4] Available from: http://www.seismo.ethz.ch/static/GSHAP/swpacific/swpac.gif Last accessed: 14th April 2013

### 3.2.11 Significance (Geological Risk)

The significance of such an event could be considered to be Minor (5% to less than 25% loss of carbon stocks) as it is not likely a large event would occur and trigger major ground movement and changes in hydrology to lead to significant losses in carbon stock.

### 3.2.12 Likelihood (Geological Risk)

The likelihood was assessed to be not applicable to the Project Area

### 3.2.13 Score (LS) (Geological Risk)

The LS score is therefore 0.

### 3.2.14 Mitigation (Geological Risk)

None

**Evidence:** Global Seismic Hazard Assessment Program (Figure 1).

## 4 OVERALL NON-PERMANANCE RISK RATING

A summary of the overall Non-Permanence Risk Rating is outlined in Table 4 below.

**Table 4: Overall Non-Permanence Risk Rating**

| Risk Category | Rating |
|---|---|
| a) Internal risk | 8.00 |
| b) External risk | 0.00 |
| c) Natural Risk | 7.00 |
| **Overall risk rating (a + b + c)** | **15** |
| Note: Overall risk rating shall be rounded up to the nearest whole percentage<br>The minimum risk rating shall be 10, regardless of the risk rating calculated<br>If the overall risk rating is over 60 then the project fails the entire risk analysis | |
| Total Risk Assessment | **15%** |

## 5 REFERENCES

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