



# **Asia Pacific Rainforest Partnership**

## **Private Sector Roundtable: Projects and Policy Briefs**

August 2016

The views and information presented herein are those of the individual authors and do not necessarily reflect the official policy or position of the other private sector members engaged in the Asia Pacific Rainforest Partnership, or the organizers of the Partnership - the Australian government, the Brunei government, or CIFOR. The author of each of the policy briefs and the projects owns his or her own words. Information is obtained from sources believed to be reliable, but is in no way guaranteed. No guarantee of any kind is implied or possible where projections of future conditions are attempted. The projects and policy briefs may be freely redistributed in other media and non-commercial publications as long as the following conditions are met:

- The redistributed article may not be abridged, edited or altered in any way without the express consent of the author;
- The redistributed article may not be sold for a profit or included in another media or publication that is sold for a profit without the express consent of the author.

Over the last year, global agreement on climate change at COP21, on sustainable development with Agenda 2030, and on financing for development in Addis Ababa have all given a clear signal on the important role of the private sector, particularly in mobilizing the needed investment to address challenges like mitigating climate change, ending hunger, and restoring ecosystems. What's been less clear is exactly how to incentivize the private sector to engage and do more.

Australia's former Minister of Environment, Greg Hunt, acknowledged this issue particularly related to forests and established a Private Sector Roundtable to support the Asia Pacific Rainforest Partnership, on which we have been honoured to serve as the inaugural Chair and Vice Chair over the last six months. Over the last six months, leading industries in the region have put thought into just exactly where the private sector's role is in terms of addressing the drivers of deforestation, restoring degraded landscapes and protecting high conservation value forests.

Industry leaders involved in the Private Sector Roundtable decided to present their contribution to these issues in a two-fold strategy - first, to put forward projects which the private sector is already engaged in that illustrate how both the challenges can be addressed but also the opportunities to scale up efforts by the private sector if the right incentives and financing are made available; and second, to present policy briefs which outline the perspective of industry leaders on a range of the current policy challenges related to i) the necessary regulatory environment to foster greater private sector engagement; ii) conservation finance needs and opportunities; iii) monitoring, evaluation, reporting, and verification of private sector projects contribution to policy objectives; and iv) the business case for investing in forest conservation and restoration.

On behalf of the Private Sector Roundtable, we look forward to presenting and discussing how we can build on these initial projects and how we can collaborate on achieving the necessary policy shifts to foster sustainable landscape management and protect and restore the regions forest landscapes.

Sincerely,



Aida Greenbury  
Managing Director of  
Sustainability  
Asia Pulp & Paper



Chair of the Private  
Sector Roundtable APRP



Martijn Wilder  
Partner

Baker and McKenzie

Vice Chair of the Private  
Sector Roundtable APRP



## Contents

### Section 1: Pilot projects

- 
1. Double Helix: Building forest genetic resources for conservation, regeneration, and sustainable trade

---

  2. TFT: Resilient farmers, healthy landscapes

---

  3. Wilmar: Achieving smallholder yield improvements through replanting of RSPO Certified Independent Smallholdings

---

  4. New Britain Palm Oil: Development of knowledge and financing options for community driven deforestation and livelihood activities

---

  5. PT Rimba Makmur Utama: Katingan peatland restoration and conservation project

---

  6. APP: Desa Makmur Peduli Api (DMPA)

---

  7. New Forests: Malua Biobank
- 

### Section 2: Policy papers

- 
1. Credit Suisse and Baker and McKenzie: Conservation and Restoration Finance

---

  2. Baker & McKenzie: The role of law in incentivising, developing and managing forest conservation projects

---

  3. EY: The business case for landscape level conservation and restoration

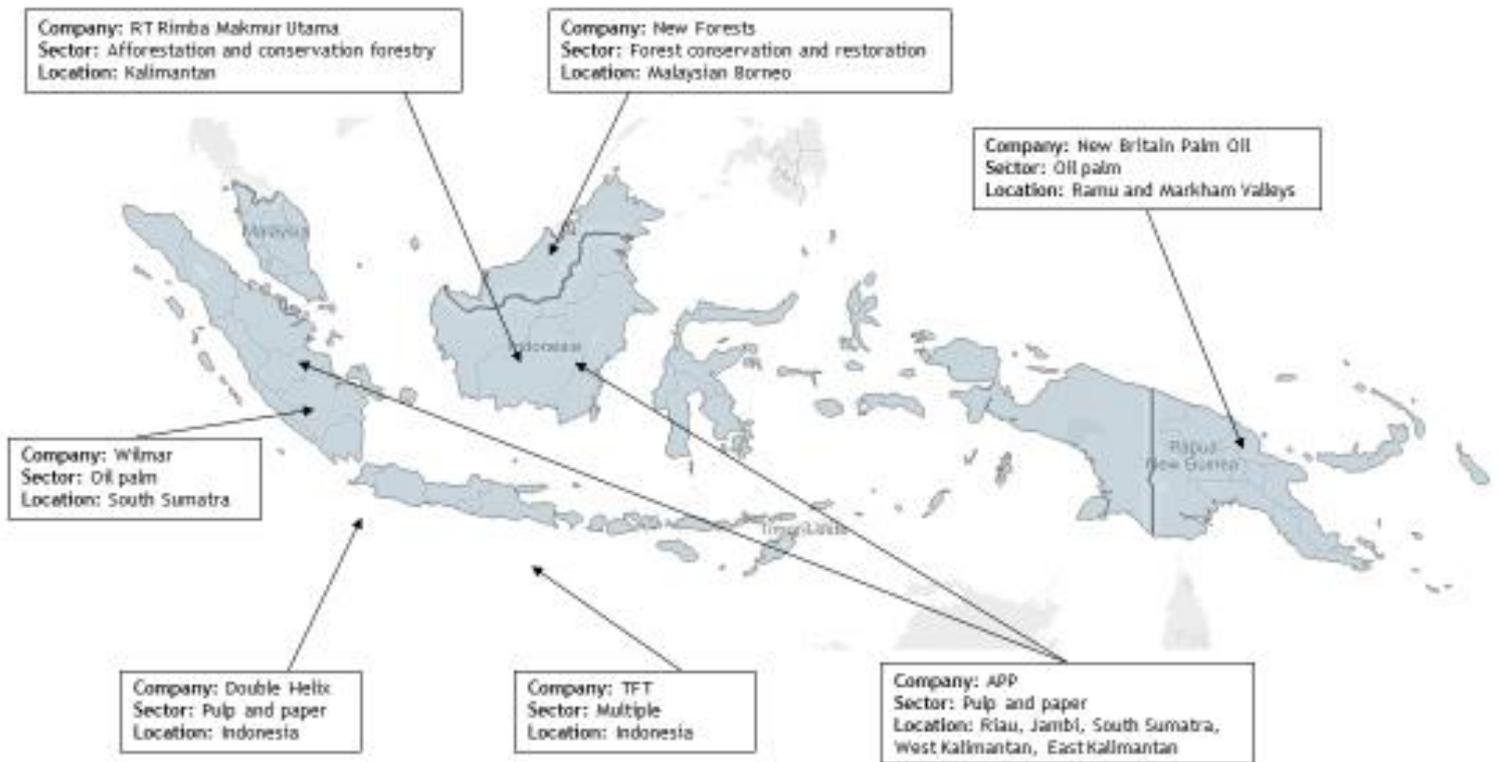
---

  4. New Forests: The business case for landscape level conservation and restoration: New Forests' experience investing in landscapes in Southeast Asia

---

  5. KPMG: Monitoring, evaluation, reporting and verification
-

## Pilot Projects



# 1. Building forest genetic resources for conservation, regeneration, and sustainable trade

Double Helix



**Country:** Indonesia

**Sector:** Paper and Pulp

**Key Metrics:** N/A

**Partners:**

- Simmonds Group (Simmonds)
- University of Adelaide, Australia (UA)
- Supply chain partners (manufacturer, sawmill, forest concession)

**Support Required:**

- Pilot: USD 350,000 for up to 2 concessions
- Roll out: 65,000 per concession
- Timeframe/Duration: 18 months

## Executive summary

In spite of forest certification schemes, legality systems and conservation efforts in Indonesia, an estimated 620,000 ha of rainforest (about 4 times the size of Greater London) is still lost each year<sup>1</sup>. Continued land conversion, both legal and illegal, in one of the world's most biodiverse regions endangers unique species, landscapes and forest communities, not to mention the resultant negative environmental impact. As well as deforestation, illegal logging and associated fraud robs the public finances of billions of dollars every year. This money instead funds organised crime and conflict. It is estimated to account for 50 to 90% of the volume of forestry output in key tropical timber producing countries, valued between USD 30 and USD 100 billion annually<sup>2</sup>.

<sup>1</sup> <http://www.greenpeace.org/international/en/campaigns/forests/asia-pacific/threats/>

<sup>2</sup> UNEP-INTERPOL (2012). *Green Carbon, Black Trade: Illegal Logging, Tax Fraud and Laundering in the Worlds Tropical Forests. A Rapid Response Assessment*. Nellemann, C. INTERPOL Environmental Crime Programme (eds.) United Nations Environment Programme, GRID, Arendal, Norway.

This proposed activity addresses these two interrelated concerns, building and applying plant genetic reference data for Meranti, a highly exploited S.E. Asian timber species to:

1. Improve understanding of forest genetic resources that will guide conservation efforts in forest regeneration;
2. Cut carbon emissions from forestry practices by maximising forest regeneration in combination with Reduced Impact Logging practices;
3. Tackle illegal logging and associated substitution by applying best practice DNA-based timber verification to safeguard Meranti product supply chains.

Implementation of a DNA-based verification system in Meranti supply chains will, for the first time, provide an estimate of the scale of illegal substitution based on hard data. It will also deter efforts to launder illegal timber through participating supply chains, supporting sustainable trade and efforts to protect vulnerable species and forest areas.

This project will leverage outputs from existing projects, such as the Australian-backed ITTO project to develop genetic reference data for Indonesian timber species, and the upcoming *Best Practice Guide on Forensic Timber Identification* by the United Nations Office on Drugs and Crime (UNODC).

The main outputs are: (1) development of genetic markers and reference data for the Meranti species group; (2) application of this reference data to support regeneration and conservation activities; and (3) implementation of a DNA system to secure participating supply chains from illegal timber substitution.

<b>Lead Organization</b>	Double Helix Tracking Technologies Pte Ltd (DoubleHelix)
<b>Partners</b>	<ul style="list-style-type: none"> <li>▪ Simmonds Group (Simmonds)</li> <li>▪ University of Adelaide, Australia (UA)</li> <li>▪ Supply chain partners (manufacturer, sawmill, forest concession)</li> </ul>
<b>Project locations</b>	<ul style="list-style-type: none"> <li>▪ Kalimantan and Sumatera, Indonesia (concession sampling)</li> <li>▪ Java, Indonesia (mill sampling)</li> <li>▪ Australia (scientific research and development)</li> </ul>
<b>Funding sought</b>	Pilot: USD 350,000 for up to 2 concessions Roll out: 65,000 per concession
<b>Period</b>	18 months (pilot)

### Project context & background

Over the past 30 years, numerous voluntary and regulatory instruments have been established to tackle the problems of deforestation, related carbon emissions, illegal logging and associated trade, and to encourage responsible forestry practices. However, there remains a lack of practical control mechanisms to monitor and measure impact. Widespread practices of

document fraud threaten to undermine the substantial progress made so far in forest law enforcement, governance and trade.

Verification of timber and timber product claims, for example, is a fundamental part of assessing and controlling the risk of illegal timber entering legitimate supply chains. DNA and other scientific testing methods have an obvious advantage compared to other audit and verification methods in that scientific data is truly independent from documentation claims and cannot be manipulated.

## The science

DNA is the building block of all living things on the planet, including trees. Differences in the genetic code of different tree species can be used as genetic markers, and analysis of these markers has multiple applications for both forest conservation and sustainable trade.

### Application of DNA reference data for forest conservation & the environment

Generating DNA fingerprinting data for trees from specific locations within a concession can be used to guide the sustainable management of the genetic resources of forests. The distribution of genetic diversity within a forest helps identify the pollination and seed dispersal dynamics in natural forests, which can be used to estimate the recruitment dynamics of regenerating forests, the sustainable logging revisit optimum and timber standing volume regeneration rates. In addition, this information can be used to promote the density and spatial arrangement of trees that are left in the forest after logging to maximize regeneration capacity of the forest. Such information has been used to great effect to guide the sustainable forest practices in Brazil<sup>3</sup>.

Genetic inventory data, used to maximize regeneration and recruitment, combined with reduced-impact logging (RIL) methods, would substantially reduce carbon emissions from forestry practices. A recent publication has estimated that a combination of these techniques applied to tropical production forests could reduce emissions equivalent to 93-162% of the European Union's committed reductions, while also supplying 45% of global round wood demand.<sup>4</sup>

### Application of DNA to the trade in timber products

DNA reference data can also be applied to check claims of the botanical species (Höltken *et al.* 2012)<sup>5</sup>. Moreover, different trees of a given species growing in natural forest stands or even in

---

<sup>3</sup> Sebbenn, A. M., Degen, B., Azevedo, V. C. R., Silva, M. B., De Lacerda A, A. E. B., Ciampi, A. Y., Kanashiro M., Caneiro, F. D., Thompson, I. and Loveless, M. D., (2008). *Modelling the long-term impacts of selective logging on genetic diversity and demographic structure of four tropical tree species in the Amazon forest*. Forest Ecology and Management 254: 335-349.

<sup>4</sup> Sasaki N, Asner GP, Pan Y, Knorr W, Durst PB, Ma HO, Lowe AJ, Koh LP, Putz FE (2016). *Sustainable forest management can reduce carbon emissions and stabilize timber production*. Science of the Total Environment. In Press.

<sup>5</sup> Höltken A.M., Schröder H., Wischnewski N., Degen B., Magel E.A., Fladung, M. (2012). *Development of DNA-based methods to identify CITES-protected timber species: a case study in the Meliaceae family*. *Holzforschung*, 66, 97-104.

plantations feature differences in their genetic composition. This spatial genetic variation can be used to verify claims of geographic origin (Degen *et al.* 2013)<sup>6</sup>.

Double Helix has driven the development and practical implementation of DNA traceability systems for the timber sector based on close collaboration with research laboratories and an understanding of industry practices and challenges. The examples on the following page illustrate this.

#### ***Prunus africana*: Supporting sustainable trade in CITES-listed species**

In 2013, DoubleHelix was engaged by the International Tropical Timber Organisation (ITTO) to establish high resolution genetic reference data (population genetics) for two CITES-listed species in the Congo Basin. The explicit goal was to detect and deter the substitution of illegal wood in supply chains participating in the ITTO-CITES programme by verifying documented claims of origin back to authorized harvest zones. This would help control fraud and determine sustainable harvest and export quotas.

The system was developed for two species (*Prunus africana* and *Pericopsis elata*) and implemented across Cameroon, the Congo-Brazzaville, and the Democratic Republic of Congo. For more information, see the latest ITTO Tropical Forest Update<sup>1</sup>.

#### ***Acer macrophyllum*: The world's first use of plant DNA analysis to support an illegal logging prosecution**

In March 2016, the U.S. government prosecuted four people under the Lacey Act for illegal interstate trade of highly valuable Bigleaf maple (*Acer macrophyllum*) timber. DoubleHelix and its partners developed a DNA system to match suspected illegally harvested sawn timber back to theft sites and stumps on public land.

This project involved the development of genetic markers for *individual* matching - in a similar approach to that used in human criminal forensic cases. The DNA method and data had to pass rigorous independent tests and peer-reviews in order to be submitted as evidence to US courts<sup>1</sup>.

In addition, the UNODC will soon be publishing their *Best Practice Guide on Forensic Timber Identification*. Having been accepted as a reliable methodology by the courts and the UNODC, there is no doubt as to the validity and acceptance of DNA analysis to safeguard timber supply chains<sup>1</sup>.

---

<sup>6</sup> Degen B, Ward SE, Lemes MR, Navarro C, Cavers S, Sebbenn AM (2013). *Verifying the geographic origin of mahogany (Swietenia macrophylla King) with DNA-fingerprints*. Forensic Sci Int-Genet 7(1): 55-62.

These examples have demonstrated that the use of DNA in timber supply chains is:

- A proven and effective technique: the gap is the development of reference data for individual species so that a verification system can be implemented in those specific supply chains.
- Practical: it is based on established procedures to minimise impact on forest and sawmill operations, and yet provides deeper understanding of the supply chain as well.
- Affordable: the routine application of DNA testing in supply chains is based on the principles of Statistical Process Control. This means that DNA testing is used to verify documented claims of species and origin on a statistical basis.

In this proposal, we seek to establish DNA reference data for Meranti, a commercially important group of species before this group becomes critically endangered.

We aim to align commercial benefit with conservation benefit. Implementation will provide the scientific community and civil society with valuable data. The raw genetic sequences generated during this project will be an invaluable data source for studies on landscape reconstruction and climate change adaptation. The DNA test results will provide hard data on the levels of document fraud and substitution that pervades global timber supply chains, for the first time providing insight on how illegal timber is laundered and at what scale.

### The location: Indonesia

Indonesia is one of the world's largest exporters of tropical timber, exporting a wide variety of products, including plywood, furniture, pulp and paper. Its main export markets are China, the EU, Japan and Korea<sup>7</sup>. About half of Indonesia's land area is covered by forests, amounting to over 90 million ha. Since the 1960s, Indonesian log production climbed rapidly to become the most important of the tropical timber exporting countries, with a 57% share of the global export in 1978.

While levels of illegal logging have fallen markedly since 2000 and forest governance has improved over this period, illegal logging continues to pose a serious threat to the country's forests, and implementation and enforcement of the law remain inadequate. 620,000 ha of Indonesian rainforest is lost each year (an increase of 30% in forest cover loss in 2013-2014, double that of Brazil).<sup>8</sup>



Fig 1. Forest cover loss in Borneo.

Image credit: WWF Germany

<sup>7</sup> <http://www.euflegt.efi.int/indonesia>

<sup>8</sup> <http://www.wri.org/blog/2015/09/brazil-and-indonesia-struggling-reduce-deforestation>

Borneo's forests are particularly threatened: about 56% of protected lowland tropical rainforests in Kalimantan have been cut down between 1985 and 2001 to supply global timber demand. Protection laws in Borneo are often inadequate or are flagrantly violated, often without consequence<sup>9</sup>. Additionally, the growth in oil palm plantations contributes to deforestation - directly and indirectly.

### The species: Meranti (*Shorea* spp.)

Meranti timbers first became well known for the manufacture of utility plywood in the 1950s. Meranti is a common trade name which consists of over 200 individual species in the *Shorea* genus, with sub-groups distinguished by heartwood colour, including Dark Red Meranti / Tanguile; Light Red Meranti / Bagtikan / White Lauan; and White Meranti<sup>10</sup>. Meranti timber is typically used in construction, furniture, plywood core, as well as veneer.

Whilst Meranti timber is still widely exploited, more than half of the *Shorea* species known as Meranti are already listed as critically endangered, endangered or vulnerable by the International Union for Conservation of Nature (IUCN)<sup>11</sup>. Conservation and trade drivers for this project are thus:

- **Protection:** Accurately identifying a specific species within the *Shorea* genus is difficult. There is an inconsistent use of regional trade names and groupings. Reliable identification of species will help to identify and protect those species already considered vulnerable or endangered.
- **Scale:** Meranti is one of the most exploited species in Borneo. Steps to secure these forest areas and associated supply chains will have a greater impact on conservation efforts and on limiting channels to market for illegally harvested timber.
- **Quality control:** Logs are typically identified by log graders using the physical characteristics of the wood. There can be degrees of variability in quality and characteristics between individuals even within a single species, making it difficult to verify species, let alone origin, even if the product comes from well established, certified supply chains. DNA verification can reduce this uncertainty.
- **Reputation:** Incorrect identification of species can lead to quality issues, as mis-declared wood will not carry the desirable characteristics associated with the claimed species, putting importers' reputations at risk.

### Opportunities to leverage other projects

Several research projects are currently underway or being planned to develop genetic datasets for *Shorea* spp. across Southeast Asia, including an ITTO project TFL - PD 037/13 Rev.2 (M) "Implementing a DNA timber tracking system in Indonesia". This project is being led by the

---

<sup>9</sup> [http://wwf.panda.org/what\\_we\\_do/where\\_we\\_work/borneo\\_forests/borneo\\_deforestation/#deforestation](http://wwf.panda.org/what_we_do/where_we_work/borneo_forests/borneo_deforestation/#deforestation)

<sup>10</sup> <http://www.rainforestrelief.org/documents/Guidelines.pdf>

<sup>11</sup> Greenpeace UK Good Wood Guide. <http://www.greenpeace.org.uk/MultimediaFiles/Live/FullReport/6759.pdf>

University of Adelaide (UA) and includes the development of DNA barcodes (used to discriminate between species only) that includes 50 important Meranti species.

This project would build upon the ITTO work by developing additional genetic reference data for key species in the Meranti group, in order to **verify claims of origin back to concession**, as proven in previous *Prunus africana* and *Pericopsis elata* projects under the ITTO-CITES programme.

### Project activities

1. Selection of Meranti group species ranked by commercial value (quantity and price).
2. Identification of participating supply chains and forest areas (concessions, sawmills, manufacturers).
3. Genetic database development. Build upon existing genetic reference datasets to produce high spatial resolution (concession-level) genetic maps of selected Meranti species, consisting of:  
(a) population sampling; (b) genotyping and; (c) genetic reference data validation.
4. Implementation of timber verification system in participating supply chains.
5. Ongoing stakeholder consultation through workshops and training.

### Project outputs

#### Scientific

- A suite of genetic markers to verify claims of origin of harvest to concession level.
- High-spatial resolution genetic reference data useful for conservation, regeneration and trade applications.
- An analysis of levels of illegal logging and substitution in controlled supply chains.

#### Supply chain

- Development of a DNA system that can be applied to support:
  - Existing certification systems (FSC, PEFC, SVLK)
  - Compliance with international regulations (US Lacey Act, EUTR, Australian Illegal Logging Prohibition Bill); and
  - Carbon emission reduction from forest activities in combination with Reduced Impact Logging practices in FSC certified concessions.
- Implementation of DNA-based document verification to safeguard up to two Meranti timber supply chains back to forest concession.
- Workshops and training to demonstrate and implement long-term, sustainable trade in a high-volume commercial species through scientific monitoring and control.

## **Budget & timeline**

Funding of USD 370,000 over 18 months is sought to build the “genetic infrastructure” required to be useful for conservation, regeneration and trade applications, implement routine DNA verification of up to two Meranti supply chains (pilot), and stakeholder workshops for knowledge sharing and training in the implementation process.

Subsequently, funding of an estimated USD 65,000 is required per concession to cover cost of sampling, genotyping and inclusion into the reference database.

## **Project partners**

### **Double Helix Tracking Technologies**

DoubleHelix is the leader in applied forest genetics, integrating science and technology-based solutions, design and systems thinking to address the problems of illegal logging and timber supply. Through our industry, scientific and government network, we are driving the practical application of DNA systems for commodity traceability across the globe.

### **Simmonds Group**

Simmonds Group is a premier provider of a wide range of timber products for the housing industry, commercial construction, home renovations, and industrial markets.

Headquartered in Australia but with global reach, Simmonds was the first company in the world to use DNA technology to certify the legality and provenance of timber imported from Indonesia. As a major buyer, Simmonds is in a position to influence positive changes in supply chain behaviours as their demand for verified timber will motivate concessions and suppliers to participate in this project. The Simmonds Group is led by Chief Executive, John Stewart. Mr Stewart is a Senior Executive in the building materials industry and is also a private sector roundtable member of the Asia Pacific Rainforest Recovery Partnership.

### **The University of Adelaide**

The team at University of Adelaide is led by Professor Andrew Lowe. Professor Lowe is Chair of Plant Conservation Biology and Director of the Centre for Conservation Science and Technology, an international centre of research excellence in tree ecological and evolutionary genetics. He is also Principal Advisor - Biodiversity Research Partnerships for the South Australian Department of Environment, Water and Natural Resources.

He leads a number of regional and national research programs, including the Terrestrial Ecosystem Research Network (TERN) a national research infrastructure program (\$>100M) for which he is Associate Science Director. His research aims to develop and apply genomic and ecological analyses, to understand, monitor and better manage biodiversity, particularly adaptation in the face of the anthropogenic threats of habitat fragmentation, invasive species

and climate change. Sampling and all scientific and laboratory work will be conducted by Professor Lowe's team at the University of Adelaide.

**For more information**

Avalyn Lim, [avalyn@doublehelixtracking.com](mailto:avalyn@doublehelixtracking.com)

Darren Thomas, [darren@doublehelixtracking.com](mailto:darren@doublehelixtracking.com)

Tel: +65 6227 9706

## 2. Resilient farmers, healthy landscapes

TFT



**Country:** Indonesia

**Sector:** Multiple

**Key Metrics:** N/A

**Partners:** TFT is driving the implementation, with the potential involvement of a range of stakeholders (member companies, NGOs, etc.). LP and Rurality are inherently multi-stakeholder initiatives, and collaboration among the parties is essential. TFT commits to create examples of change within specific regions, working with multiple types of stakeholders across several commodities to create and implement land use plans.

**Support Required:** No support required.

The **Landscape Programme (LP)** is a new TFT initiative to create resilient, thriving ecosystems and communities around multi-stakeholder, multi-commodity landscapes. Healthy landscapes are those that successfully combine economic growth, social development and conservation, and require all relevant stakeholders (communities, civil society, business and government) to work in synergy with a shared vision of the landscape. More specifically, TFT defines a landscape as “an area such as an ecosystem, region or supply chain in which transformation across commodities and actors within that area is the goal.”

The LP is a bottom-up process that results in a robust and sustainable land-use plan with local buy-in for implementation and monitoring. Landscapes are home to a diverse array of stakeholders with differing (often opposing) needs and aims. In order for any land-use plan to be sustainable, key actors within that landscape who will be affected by its implementation must support and feel a sense of ownership over it. The multi-stakeholder process is a consultative and collaborative drafting process intended to involve these stakeholders in deciding the future of their landscape.

There are two main phases to TFT’s LP approach—scoping, and engagement and implementation. Scoping includes socialization and capacity building of the various stakeholders, stakeholder mapping, and geospatial work. The second phase, engagement and implementation, includes land use planning, intensive transformation work, or “deep dives” in specific smaller areas within the landscapes, such as a cluster of mills, and strategic engagement with high risk suppliers in the landscapes. As a start, TFT intends to pilot its LP in three landscapes in

Indonesia (see “Location” section below) and will draw on its significant experience working to transform global commodity supply chains.

Farmers are often key stakeholders in landscapes. TFT launched its **Rurality** initiative in early 2015 to drive progress and innovation at the smallholder farmer level. Rurality empowers farmers, in this case farmers in a given landscape, to create and own the mechanisms that will ultimately boost their resilience and improve their livelihoods. TFT defines resilience as “the capacity to adapt positively to adverse changes and challenges,” and considers it a means to an end for farmers to better their livelihoods.

The “Rural Dynamics Diagnostic” (RDD) is a key phase of our Rurality approach. It is an in-depth assessment of farmers’ technical, physical, social, and economic environment. Each RDD is therefore unique and adapted to the local context with the objectives of understanding the farmers’ situation and challenges, building trust with each farmer engaged in the Rurality project, designing together with farmers the transformation strategies that will ultimately strengthen their resilience, and identifying various stakeholders in the specific environment.

TFT believes resilient farmers are a key factor in healthy landscapes. With that in mind, the LP pilots will leverage Rurality in priority landscapes as one of many potential vehicles to realize greater stakeholder empowerment and engagement in the land use plan.

A core aim of all of TFT’s work is **transformation**. In the context of the LP, this involves changing the actions and behaviours of a group of stakeholders within a landscape to the point where they see the value in radically curbing deforestation and exploitation. As part of the transformation process, relevant stakeholders will go “beyond compliance” with certification schemes and audits and into a space in which active interest in improving practices is the standard. To reach this space, incentive systems must be identified, well understood and carefully designed.

Another objective of the LP is to guide stakeholders towards the creation of a **long-term land use plan** that meets present livelihood needs, increases resilience, provides a sustainable economic future, maximises the preservation of forests and other key habitats or areas of cultural significance, and is designed and implemented with the free, prior informed consent of the communities who will be effected by the regime.

For the smallholders in the landscapes in particular, a central goal is to **strengthen farmer resilience as a mean to livelihood improvements and empowerment**.

Successful LP pilots should be **proof of concept models** that can later be scaled up to impact entire ecosystems, regions, or supply chains. Similarly, Rurality projects focused on the three targeted landscapes may start in a smaller geographic area within a landscape, to be leveraged and/or scaled up throughout the landscape or even in other landscapes.

### **The landscape programme**

It is estimated that Phases 1 (Scoping) and 2 (Engagement and Implementation) of the LP could span up to **5 years**.

**Phase 1: Scoping phase. 6-8 months**

**Phase 2: Engagement and Implementation** (variable timeline depending on the following:

- Land use plan: depends on the scope and landscapes - it will vary depending on a number of factors, such as stakeholder consultations and opportunities identified during scoping phase.
- Leverage points to effect transformation in the landscape, such as:
  - TFT's *Rurality* projects: 2 to 5 years
  - TFT's *Centre for Social Excellence* for capacity building/training of key landscape stakeholders: approximate 6 months to 1 year
  - TFT's *Grassroots* initiative to identify and empower civil society to effectively verify and monitor that relevant stakeholders in the landscape uphold their commitments: minimum of 1 year
  - Restoration/rehabilitation programs: 2-5 years

## Rurality

Rurality develops its projects through three phases:

**Phase 0: Scoping Phase.** The main objective of this phase is to identify aggregators which are interested in leveraging the Rurality initiative to support the smallholder farmers who supply them. In this phase, the Rurality team spends **3-5 days** in the field collecting basic information on: the structure of smallholder schemes in a particular area; input from the aggregators and/or traders on the quality/quantities received from the smallholders and the relationship with the farmers; and input from the farmers on their relationship with aggregators and their general livelihood and life challenges. The interest from the aggregators is the key to determining whether the Rurality team can move on to the next phase.

**Phase 1: Rural Dynamics Diagnostic.** A Rurality team (typically consisting of an agronomist and a social specialist) is sent to the field for an extended period (ranging from **several weeks to months**, depending on the context) to build trust with the smallholders in a particular area. The team uses a "Rural Dynamics Diagnostic" (RDD) tool to systematically gather information on the rural dynamics, such as mapping smallholder farms, stakeholder mapping, community dynamics, farming systems, living conditions, market opportunities, business relationships, education, access to health services, access to water & sanitation and infrastructure, etc. At the end of this phase, the Rurality team will develop a Transformation Action Plan and key performance indicators (KPIs). The action plan addresses key challenges identified during the RDD, and the KPIs will allow measurement of the project's transformational impact (i.e., what should be in place for the community/smallholder block to increase their resilience).

**Phase 2: Transformation & Monitoring.** This phase is carried out through the implementation of a participative action plan (developed from the RDD) which focuses on strategies to increase resilience and improve their livelihoods, including profitability and production, enhancing environmental and social stewardship and to foster development needs at the farmer level. The action plan is adapted to the context, elaborated in a participatory way, and implemented by various stakeholders (aggregators, local organizations, etc.). The timing of this phase also depends on the specific context but it is estimated from **2 to 5 years**.

### 3. Achieving smallholder yield improvements through replanting of RSPO Certified Independent Smallholdings

Wilmar



**Location:** South Sumatra, Indonesia

**Project Focus:** Smallholder RSPO Certification

**Sector of Project Sponsor:** Oil Palm

**Key Metrics:**

3000 people benefitting from the project

**Partners:**

3 other partners, a consumer business company, an NGO and a financial institution<sup>12</sup>

**Support Required:** Technical/financial expertise to work out how collateral can be dealt with more

effectively and realistically with smallholder oil palm farming, especially at replanting.

**Timeframe:** 2016 - 2020. Project proposal has been formulated, project partners have been secured and partner meetings have commenced. Signing of the memorandum of understanding by partners is currently underway. There is potential to scale up the project if the team is able to overcome challenges, such as issues with collateral for bank financing of smallholders.

PT Tania Selatan (TS) is an RSPO certified mill under the Wilmar Group of companies. Under the TS scope of certification, there were included 3 smallholder cooperatives that were at the time under the TS plasma scheme. Upon achieving independent smallholder status, the 3 cooperatives have grouped together with 5 other cooperatives, of whom all are suppliers to TS, to form an

<sup>12</sup> Partners cannot be mentioned publicly until after the signing of the memorandum of understanding has been officially announced.

umbrella association called, 'Sapta TUNGGAL Mandiri'. There are close to 3,000 farmer members under the association, which has 6,000ha of plantings with an average annual yield per hectare of 18 tonnes of FFB - which is higher than the average Indonesian smallholder. Most of the 6,000 ha is due for replanting within the next 1-3 years, and it is important that replanting is carried out to ensure yields remain at current levels, or increase with better seedling varieties and better management. The project would provide independent smallholders with direct assistance for cost of RSPO certification, cover some replanting costs, access to better financing to cover other costs of replanting, and access to continued market for RSPO certified FFB.

The project would focus on the activities listed below, and is expected to run for 5 years.

Activities in the project:

1. Achieving group certification for the association
2. Identification of affordable financing for smallholders for replanting
3. Provide seedlings and necessary activities needed to conduct good replanting within the smallholder area
4. Develop smallholder plant nursery for the replanting
5. Provide expertise and advisory to smallholders on how to the best agricultural practices for newly planted palms
6. Create alternative income streams for smallholders in the "lean years" of replanting (i.e. initial 4 years post replanting before fruiting)
7. Provide financial advice for smallholders related to replanting

**Aim:** To increase the yield of smallholders through replanting, with access to finance.

Currently, many smallholders tend to delay replanting - especially independent smallholders, as it involves intensive capital (i.e. for replacement seedlings, rental of machinery to fell old palms and conduct chipping and mulching, etc), and critically, a loss of income for the next 4-5 years while the palms are not productive. For smallholders who are RSPO certified, going through the first replanting process as a sustainably certified entity can also be a difficult time. As RSPO standards include applying best practices in replanting to avoid environmental and social impacts. Delays in replanting mean that there is a loss in opportunity to increase overall productivity of the palms. The project would provide independent smallholders with direct assistance for cost of RSPO certification, cover some replanting costs, access to better financing to cover other costs of replanting, and access to continued market for RSPO certified FFB.

#### **Expected outcomes**

- Expected improvements in the management of land and forest areas, contributing to emissions reductions.
- Expected total number of direct beneficiaries (reduced vulnerability and/or increased resilience): 3,000 independent smallholders

- Environmental, social and economic co-benefits: better sustainability practices, improvements in income generation.

## 4. Development of knowledge and financing options for community driven deforestation and livelihood activities

New Britain Palm Oil



**Location:** Ramu & Markham Valleys with scale-up sites in the Popondetta Plains in Papua New Guinea

**Sector of Project Sponsor:** Oil Palm

**Project Focus:** Research, reforestation

**Key Metrics:**

- 5,000 hectares conserved or restored with the project
- 5,500 people benefitting from the project

**Partners:** TBC, but Phase 1 will target partners including (but not exclusively):

- Local communities
- PNG Climate Change and Development Authority
- PNG Forest Authority
- UNDP [check compliance with existing support arrangements]
- Provincial Governments (Morobe, Madang & Oro)
- University of the Sunshine Coast
- PNG University of Technology (Tropical Forests & People Centre)
- PNG local NGOs
- Local timber plantation companies

**Support Required:**

Additional funding for the initial research partnership and development of funding modes for future implementation. Additional funding for the model tree planting work on community land.

**Timeframe:** 2016 - 2023 (2 phase project; 2 years + 5 years)

This is a two phase project designed to meet 2 recognised limitations to reforestation and forest restoration

1. Lack of available local knowledge on reforestation and rainforest restoration (seed supply, species suitability, nursery techniques, silviculture, etc.).
2. Hesitancy by landowning communities to commit large areas of land to tree planting due to uncertainties of success and long-term land tenure/access.

**Phase 1** will develop a Research Partnership between PNG Government bodies, local & international research institutes, local & international NGOs, and local communities to collaborate on research, knowledge sharing and awareness raising with regards to integrated reforestation and restoration programs (i.e. those that incorporate both native and exotic species to provide multiple-use forests for both landscape and livelihoods). This partnership will involve national meetings, an international conference, publication of shared findings, and establishment of a significant plot of land for research related to reforestation in PNG (on secure tenure land made available by NBPOL). Targeted funding for national and international research students would enable the development of actionable research, and improve the future uptake by partners. Phase 1 will also include development of a carbon financing mechanism. Preference will be given to working within PNG's National Climate Change strategy and REDD+ strategy, however the project may also evaluate selling carbon credits on the voluntary market as a means to address landowner motivation for sustainable development. In order to ensure the free, prior and informed consent of project participants, the first phase will include a significant investment in outreach and awareness within communities that NBPOL has worked with as part of its 'One Hour Principle Partnership' (OHPP).

**Phase 2** will implement forest protection and tree planting within the landscape in order to support livelihoods through generation of cash crops and enhance subsistence resources (agricultural crops, firewood, building materials, etc.), as well as provide a sustainable timber supply over a wide area.

This phase would also include the start of inward cash-flow resulting ideally from results-based REDD+ payments in-line with PNG's national REDD+ strategy. Of course this will entail the essential work of measurement, reporting and verification as necessary.

It is hoped that carbon funding received would be channeled to participating communities for development spending through the One Hour Principle Partnership (OHPP); a community development initiative intended to elevate standards of living towards the UN Sustainable Development Goals and PNG's Vision 2050 by improving access to functioning primary education and basic healthcare facilities. Under OHPP, community leaders are trained and supported to identify and prioritize development needs within their community. Project proposals are then prepared in conjunction with community leaders and submitted for funding with NBPOL Foundation support.

The Project has 3 aims that are intended to address the recognised limitations to reforestation:

1. Develop and share new and existing Research-led and Traditional Knowledge with regards to reforestation and forest stewardship

2. Develop landscape planning and implementation models within and between clan boundaries to increase tree cover and develop livelihood activities
3. Develop realistic models for sustainable financing of tree planting costs

This project will:

- Achieve a core of reforestation related trial plots for ensuring a long term focus on reforestation activities in PNG
- Target afforestation of 5,000ha of customary land on anthropogenic fire-climax grasslands
- Provide a catalyst to replication by providing proof of concept of sustainable financing and inform REDD+ & forest management policy making.
- Provide PNG with additional areas of land for sustainable forest management
- Phase 1 will directly engage with ~250 individuals across ~40 organisations in developing reforestation as a viable activity
- Phase 1 will engage with ~500 people in 5 communities to develop trial planting on community land, providing training, knowledge and income for the duration; as well as long term access to the trees planted on 250 ha

Phase 2 will engage with ~ 5,000 people across 10 communities to empower communities to undertake land-use planning and implementation. Participating communities will receive wages from participating in tree planting activities

Specific outcomes include:

- 250ha of trials on secure tenure land (provided by NBPOL) and 250ha of trials on customary land
- National and International students accessing research lots for undergrad and postgrad research
- International conference into reforestation activities in PNG
- Publication of an edited book of research findings and experience
- Identification of processing industries and markets for additional timber and cash crops produced from within integrated reforestation projects
- Informing PNG's national REDD+ strategy, which would in turn lead to results-based REDD+ payments through the UNFCCC. This in turn could be re-invested in scaling-up activities proposed through this project.
- Targeted 10 communities to participate in integrated land-use planning
- Targeted 5,000 ha of customary land reforested into a matrix of cash crops, native forest and mixed species plantation forest (refer to targets for plantation forestry in the PNG Medium Term Development Plan)
- Carbon funding received invested in community development infrastructure with measurable progress towards SDGs and PNG Vision 2050

# 5. Katingan peatland restoration and conservation project

PT Rimba Makmur Utama



**Location:** Kalimantan, Indonesia

**Project Focus:** Peatland restoration

**Sector of Project Sponsor:** Afforestation and Conservation forestry

**Key Metrics:**

- 149,800 hectares conserved or restored with the project, 305,669 across the wider landscape
- 44,040 people benefitting from the projects put forth
- 150 jobs created/projected in the landscape
- 447,100,760 tCO<sub>2</sub>e emissions reduced or avoided

**Partners:**

- Yayasan Puter Indonesia: Community development activities, including participatory land-use mapping, community consultations and REDD+ awareness building, livelihood programs
- Wetlands International: technical aspects of MRV-related activities, including MRV methodology and platform development for monitoring above- and below-ground carbon emissions, provision of technical expertise including biodiversity management, fire management, land-use management and community development
- Permian Global: Technical advice and support, including MRV methodology design and technical support, remote sensing, carbon commercialization and marketing, technical management advice including protection and restoration methods.

In addition, the project works with a wide range of other partners on thematic components of the project, and is willing to consider such collaboration with any interested parties.

**Support Required:** The Katingan Project represents a highly professional approach to peatland protection and restoration, GHG emission reductions and landscape management; all while adhering to the highest social and environmental standards and with a commitment to rigorous monitoring and transparency. The project wishes to explore ways in which this service can be valued on a payment for performance basis.

**Timeframe:** The project formally begun in November 2010 and became fully-operational in January 2014. It is due to operate until at least 2070. Full details of the project, including a

full report of the first monitoring period (2010-2015) are publicly available at the following sites:

- <http://katinganproject.com>
- [http://www.vcsprojectdatabase.org/#/project\\_details/1477](http://www.vcsprojectdatabase.org/#/project_details/1477)
- <http://www.climate-standards.org/2015/09/02/katingan-peatland-restoration-and-conservation-project>.

In addition, a full report of all activities and emission reductions in the period 2010-2015 is now available via the CCB website [here](#). This includes detailed reporting against a wide range of metrics measuring climate, social and biodiversity impacts.

Tropical peatlands support fundamental ecological functions and store massive amounts of carbon, with stocks below the ground making up to 20 times the amount stored in trees and vegetation. When cleared, drained and burned to make way for plantations and other developments, this carbon is released into the atmosphere as carbon dioxide along with other greenhouse gases. Indonesian Borneo, known as Kalimantan, encompasses approximately 5.7 million hectares of peatland. By 2020, the expansion of industrial plantations on peatlands in Kalimantan alone is estimated to contribute to 18-22% of Indonesia's total GHG emissions.

The Katingan Peatland Restoration and Conservation Project seeks to protect and restore a core area of 149,800 hectares of natural peatland forest ecosystem, within a wider mixed-use landscape of 305,669 ha. In doing so it will offer local people sustainable sources of income, and tackle global climate change - all based on a solid business model.

The project lies within the districts of Katingan and Kotawaringin Timur in Central Kalimantan Province, and covers one of the largest remaining intact peat swamp forests in Indonesia. As well as storing vast amounts of carbon, it plays a vital role in stabilizing water flows, preventing devastating peat fires, enriching soil nutrients and providing clean water. It is rich in biodiversity, being home to very large populations of many high conservation value species, including some of the world's most endangered; such as the Bornean Orangutan (*Pongo pygmaeus*) and Proboscis Monkey (*Nasalis larvatus*).

The core project area is located entirely within state-designated production forest. Without the project, the area would be converted to fast-growing industrial timber plantations, grown for pulpwood. The Katingan Project prevents this fate by having obtained full legal control of the production forest area through an Ecosystem Restoration Concession license, blocking the applications of plantation companies.

Surrounding the core area, and forming the wider project zone, is a mixed-use landscape including 34 villages. The inhabitants of these villages are the main collaborators and key beneficiaries of the project. Benefits are shared through a comprehensive program of support centred around investment in traditional community-based small- and medium-sized enterprises focusing on sustainable value-added agriculture, fisheries and non-timber forest product harvesting, with additional support to improve land tenure, village planning, health, education and employment opportunities.

All project activities are implemented with a full consideration of internationally credible science and standards, conservation priorities, Indonesian law, traditional de facto land tenure, socio-economic needs, and community consultation based on free, prior and informed consent principles.

The Katingan Project is performance-based, and at its core, is financed by its achieved GHG emission reductions and sequestrations against a baseline scenario during the initial crediting period of 60 years. Through planned activities the project is expected to reduce an average of 7,451,846 tonnes of GHG emissions annually; equivalent to the avoided emission of 447,110,760 tonnes of CO<sub>2</sub> over the project's first 60 years - all fully verified.

The Katingan Project is managed by the Indonesian company PT. Rimba Makmur Utama and is designed to ensure that all benefits are real, long-lasting, and passed on to local communities, the region, and to the wider State of Indonesia in which it operates. The Katingan Project aims to bring positive change over the next 60 years and beyond by conserving the integrity of remaining peat swamp forest, and by playing a crucial role for Indonesia as it sets out to fulfil its emission reduction commitments in the years ahead.

The Katingan Project is fully-validated by the Verified Carbon Standard (VCS); the largest ever REDD project so validated in terms of predicted emission reductions. It is also in the process of validation to the standards of the Climate, Community and Biodiversity Alliance. A full description of the project is publicly available [online](#).

The goal of the Katingan Project is to develop and implement a sustainable land use model through reducing deforestation and degradation, habitat and ecosystem restoration, biodiversity conservation, and increasing economic opportunities for the local people of Central Kalimantan. The Katingan Project is designed to achieve this through a series of objectives, considered in turn below:

### Climate objectives

- To deliver credible GHG emission reductions through avoided deforestation and forest degradation, prevention of peat drainage and fires
- To enhance ecological values at the landscape scale through ecosystem restoration
- To conduct research and development activities as to implement the latest science, research and management practices
- Community objectives
- To enhance the quality of life and reduce poverty of the project-zone communities by creating sustainable livelihoods options and economic opportunities
- To strengthen community resilience by increasing capacity to cope with socio-ecological risks
- To maintain and enhance ecosystem services for the overall well-being of the project-zone communities through ecosystem restoration
- Biodiversity objectives
- To eliminate drivers of deforestation and forest degradation and to stabilize and maintain healthy populations of faunal and floral species in the project zone through biodiversity conservation and protection
- To maintain natural habitats and ecological integrity through ecosystem restoration

All of these objectives closely ally with, and support, Indonesian Government Policy; particularly with respect to emission reductions (INDC commitments), peatland and forest restoration, fire and haze reduction, biodiversity conservation, community forestry and rural development. The project operates with the full support of the national and regional governments.

## 6. Integrated Forestry and Farming System (IFFS)

Asia Pulp & Paper



**Location:** Indonesia, 5 regions throughout Indonesia, which are Riau, Jambi, South Sumatra, West Kalimantan and East Kalimantan

Initial pilot villages include:

- Desa Bukit Batu (Palembang)
- Desa Muara Bengkal (Riau)
- Desa Sei Selodang (Riau)

**Project Focus:** Integrated agro-forestry

**Sector of Project Sponsor:** Pulp and Paper

**Key Metrics:**

- 3,000 households, or approximately 13,500 people, in 500 villages directly benefitting from the projects
- 50-75% increase in income over three years
- Reduced incidence of fire (projections under calculation)
  - Two of the pilot villages are located in Riau Province, which accounted for over 58% of all fire alerts in Indonesia over a 12-month period<sup>13</sup>
  - South Sumatra, where the third pilot village is located, is another province at high risk of fire
- Reduced greenhouse gas emissions as a result of avoided deforestation (projections under calculation)
  - Deforestation rates in Indonesia are currently estimated by WRI Global Forest Watch at over 1 million hectares a year, with some of the leading causes being illegal logging and encroachment of agriculture, both of which will be addressed through this project.

**Partners:**

APP is working closely with Prof. Dr. Robiyanto, an academic from Sriwijaya University in the design and implementation of the IFFS program.

<sup>13</sup> Data from Global Forest Watch between March 2013 and March 2014

**Support Required:** The USD10 million investment in the IFFS program is sufficient for the foundation level implementation across the 500 villages at 50% coverage. However, to reach 100% of the households and ensure the long-term viability and success of the program additional funding is required. APP is also seeking out potential collaborators / partners that are either working in similar landscapes or communities or are interested to do so. APP is looking for support to commission an external party to undertake an impact evaluation and case study of the project to elicit lessons learned and to determine whether it can be replicated at a wider scale across the region.

**Timeframe:** 5 years, 2016 - 2020

As part of its new community engagement and development strategy, APP is working on an Agroforestry program that is designed to support alternative local livelihoods in order to reduce community pressure on natural forest in and around the company's suppliers' concession areas.

APP has learnt that the root cause of the unsustainable practices which lead to forest degradation and deforestation in the supply chain - including social conflict - are linked to the low income and welfare of communities surrounding forest areas. The company has therefore been reviewing and refocusing its community development strategy to better address forest protection challenges. The program will involve capacity building for the community, and provision of planting and/or farming materials, equipment and/or facilities to develop the Agroforestry programs.

APP believes a new and more inclusive business model is required whereby communities can partner with the company to manage and protect the forest. This will be achieved through empowerment programs that align community economic needs with the sustainable management of the forest.

The aims of the IFFS program is community development through capacity building and provision of planting and / or farming materials, equipment and, most importantly, knowledge and best practices in developing a successful agroforestry program. APP hopes to elevate these communities through such development programs by providing the knowledge, guidance and resources, resulting in less dependency on natural forests and activities related to it.

Progress from the initial pilots in the 3 villages identified will be closely monitored and based on the outcomes and level of success, the program will be adjusted accordingly in the other remaining villages. Initial results indicate that communities have identified a range of activities including horticulture, rice paddy, animal husbandry, maize, and rubber that they would like to scale up through this program.

As a result of an increase in livelihood incomes and security for these households, it is expected to reduce instances of social conflicts in these areas as well as result in a significant decrease in activities that are detrimental to the protection and restoration of natural forests, including encroachment, illegal logging, deforestation, slash and burn activities, etc.

The IFFS primary purpose is to improve land management in forests and its surrounding areas to improve the social, economic and living conditions of local communities while helping to reduce carbon emissions.

The implementation of the IFFS will involve 500 villages, with an estimated 3,000 households being direct beneficiaries of the program. These villages and households were selected based on several criteria:

- Proximity to forest concessions
- History of fire and illegal logging activities in the area
- Disadvantaged groups within the villages

Based on the above criteria, the IFFS program can improve the stature and livelihood of the identified communities through:

- economic development (including creating access to markets)
- knowledge transfer (including capacity building)
- improving management of resources
- providing capital

The Environmental and Social Impact Assessments, together with HCV, HCS and social assessments, were conducted by APP in each region at Forest Management Unit (FMU) levels. The IFFS program has utilized this data in its design process.

If and when the project proves to be successful, sustainable and viable as a long-term self-sustaining program, then the IFFS program can be used as a blueprint for implementation in villages throughout Indonesia for community development as well as forest protection purposes.

# 7. Malua Biobank

## New Forests



**Location:** Borneo, Malaysia

**Project Focus:** Forest conservation and restoration

**Sector of Project Sponsor:** Asset Manager

**Key Metrics:**

- 34,000ha conserved or restored by the project; and 241,000ha across the wider landscape
- 20 million tCO<sub>2</sub>e avoided over wider area, 1 million tCO<sub>2</sub>e additional as a result of the project

**Partners:**

- **Eco Products Fund (EPF)** an investment fund specializing in conservation projects which exemplifies a multistakeholder approach to conservation
- **Yayasan Sabah:** A state agency; administers the Malua Trust which is funded by 20% of gross revenues from the sale of eco products.
- **Rakyat Berjaya Sdn Bhd (RBJ):** State-owned company with logging rights to the Malua Forest Reserve; has committed to cease all logging activities in Malua and will earn a 50% profit share on all sales of eco-products (e.g. BCCs, carbon offsets) after capital is returned to MWHCB, Inc.
- **Sabah Forestry Department:** State forest agency; provides operational management of the Malua Biobank in accordance with the Conservation Management Plan.
- **MWHCB, Inc.:** British Virgin Islands company wholly-owned by EPF; has committed to fund the implementation of the Conservation Management Plan and in return has exclusive rights to register and commercialize the eco product opportunities associated with the Malua Forest Reserve. Will earn a 50% profit share on all sales of eco-products (e.g. BCCs, carbon offsets).

**Support Required:** An investment of USD 5 million would secure the rights for ongoing operation of the Malua Biobank as well as fund five years of operations, management, and include carbon project development costs. It is anticipated within this time that carbon credits would be generated and verified from 2019, and that compensation agreements under the RSPO RCAP may commence in 2017.

**Timeframe:** The Malua Biobank conservation operations commenced in 2008, and a carbon project could be initiated from 2017 if an investment/funding mechanism is obtained by

December 2016. Funding is required from January 2017 onward in order to sustain on the ground operations and to commence the carbon project development.

The Malua Biobank operates in the Malua Forest Reserve (34,000 hectares), an integral part of the Ulu Segama-Malua Forest Reserve area (241,000 hectares), one of the largest and most biodiversity-rich blocks of natural forest remaining on the island of Borneo. Over the years the original forest structure has been altered, and most wildlife species were threatened as a result of historical habitat degradation and the increase in hunting pressure resulting from better access and the presence of palm oil workers in the areas immediately adjacent to Malua. Malua remains home to globally significant plant and wildlife species. Approximately 50% or 17,000 hectares has been identified as lowland mixed dipterocarp forest, which is considered by WWF-Malaysia to be a globally endangered ecosystem.

Following a State Cabinet decision in 2006 to cease logging and conserve the area, a new ten-year Sustainable Forest Management Plan was drawn up in 2007 covering the Malua and Ulu Segama forests. The Government of Sabah then sought a means of financing the restoration and conservation of the two reserves, and in August 2008 the Malua Biobank was established with seed investment by the Eco Products Fund LP (EPF). The Malua Biobank is a 34,000 hectare conservation and restoration project unique for its public-private partnership approach to rainforest restoration and pioneering approach to sell biodiversity-based offsets into the palm oil supply chain; the Roundtable on Sustainable Palm Oil (RSPO) is on the verge of establishing a deforestation compensation program in 2016-17 that may enable the use of compensatory mitigation to support RSPO members in meeting their compliance requirements. The Malua Biobank project managers, New Forests, are now seeking additional finance for the development of a VCS carbon project on the site and to sustain operations of the Malua Biobank following the exit of the seed investor in the project. The project would utilize the existing methodology, Methodology for Conversion of Low-productive Forest to High-productive Forest, v1.2, and would sequester additional carbon through the managed forest restoration of the Malua Forest Reserve. The proposed project would enhance total carbon storage and sequestration in the forest by enhancing forest regeneration, using targeted management of climber vines, which inhibit forest regrowth.

The Malua Biobank was established as the first biodiversity credit project to be registered and is listed with leading registry provider Markit<sup>14</sup>. The Malua Biobank sells Biodiversity Conservation Certificates (BCCs), each representing 100 square meters of tropical rainforest conservation. The BCCs offer companies in the palm oil supply chain a way to compensate for historical deforestation and support the protection and restoration of high conservation value (HCV) areas. The largest market opportunity for BCCs is the compensation program developed by the RSPO, known as the Restoration and Compensation Procedures (RACP). The buyers of the BCCs in this market would be oil palm growers seeking to become suppliers of certified palm oil and who would purchase BCCs as a way to compensate for historical deforestation as defined by the RSPO. The RACP requires RSPO members to calculate and disclose their compensation liabilities disclose their liabilities as well as plans to mitigate those liabilities, which can include

---

<sup>14</sup>See Appendix 1 for further detail on verification and credit registry.

sponsoring or purchasing third-party mitigation. This is the ultimate recognition by the RSPO that investment in biobanking projects like Malua is the most viable option for their growers to achieve certification, move the industry toward sustainability, and generate net positive environmental and social outcomes<sup>15</sup>.

Ultimately, the Malua model is scalable and may be replicated in other industries. The RSPO is not the only certification accreditation body struggling with the problem of historic forest conversion. All certification schemes need to address the issue to improve the claims of environmental and social responsibility by those who have engaged in forest conversion. New Forests expects that the Malua model can be scaled geographically, into other commodities, into and other certification programmes as a cost-effective environmental solution.

### Aims and outcomes

The aim of the Malua Biobank is to shift land use towards rainforest restoration, catalysing a new economy of conservation in the process. The conservation management objective of the Malua Biobank is to restore and protect a 34,000-hectare area in Sabah, the Malua Forest Reserve, using conservation finance to sustain long-term sustainable management of the reserve.

The specific objective of the proposed project is to finance additional activities to regenerate the forest and produce a measurable carbon benefit. This program is complementary to the Malua Biobank's long-running objective to develop and sell Biodiversity Conservation Certificates (BCCs) as a means to compensatory mitigation.

The Malua Biobank aims to provide a range of environmental and social benefits. The project is managed under a Conservation Management Plan, which includes a number of specific management prescriptions focused on protection and restoration. Listed below are desired outcomes:

- Gain an improved understanding of animal numbers, distribution and condition
- Sustain populations of endangered and protected species
- Improve the quality of local waterways
- Prevent poaching, illegal logging, and encroachment
- Improve forest structure to increase resilience to fire
- Improve local capacity to respond to wild fires
- Minimize greenhouse gas emissions from the project area and encourage carbon removals from the atmosphere through forest regeneration
- Support eco-tourism initiatives
- Establish positive and cooperative relationships with neighbouring businesses and communities

### Climate change mitigation

The Malua Biobank has an opportunity to undertake an improved forest management (IFM) project that increases the forest productivity by targeted regeneration and replanting. The proposed IFM carbon project builds on the successful model demonstrated by the neighbouring Innoprise-FACE Foundation Rainforest Rehabilitation Project (INFAPRO)<sup>16</sup>, which was established

---

<sup>15</sup> For more information on the RACP and Malua's opportunity as a biodiversity mitigation source, see Appendix 2

<sup>16</sup> <http://www.searrp.org/danum-valley/forests-surrounding-danum/infapro-rainforest-rehabilitation-project/>

in 1992 to promote the regeneration of 30,000 ha of highly degraded logged forest, largely by enrichment planting, and thereby to increase its capacity for CO<sub>2</sub> sequestration. The INFAPRO project has developed and implemented a VCS-approved methodology, which could be applied to the Malua Forest Reserve, and falls under the category of IFM - Low-Productive to High-Productive Forestry (LtHP). According to the VCS AFOLU Guidance<sup>17</sup>, LtHP:

*“...includes practices that increase carbon sequestration by converting low-productivity forests to high-productivity forests. Carbon stocks can be increased by improving the stocking density of low-productivity forests, noting the following:*

*a) Low-productivity forests usually satisfy one of the following conditions:*

*i) They qualify as forest as defined by the host country for its UNFCCC national inventory accounting, but contain minimal to no timber of commercial value.*

*ii) They are in a state of arrested succession, where regeneration is inhibited for extended periods of time, following either a catastrophic natural event to which the forest is maladapted thus causing massive mortality, or ongoing human-induced disturbance, for example uncharacteristically severe fire or widespread flooding, animal grazing, or burning.*

*iii) They have a very slow growth rate or low crown cover.”*

The above conditions apply to the Malua Forest Reserve, and would be addressed via a combination of forest management techniques for enrichment and release of arrested succession, following the previous disturbance of logging. Large portions of the project area have the potential be re-established with native species that sequester carbon dioxide from the atmosphere or for degraded areas to be managed for improved forest regeneration. **The combination of replanting cleared areas and targeted regeneration has potential to sequester more than 1 million tCo<sub>2e</sub> under the proposed carbon project. This would be additional to current management and any legal requirements.** Malua already has a series of Permanent Sample Plots (PSPs) that would support strong data inputs.

### **Alignment with Malaysia NDC**

Malaysia’s NDC notes that legacy LULUCF issues include past degradation, which requires restoration and rehabilitation that can be costly and represent barriers to climate mitigation. Malua Biobank already has established a successful, cost-effective, operational model for restoration and rehabilitation.

### **Alignment with Malaysian and Sabah initiatives**

Development of Green Products and Markets - As per the *11th Malaysia Plan, Climate Resilient Development*, The State Government of Sabah in October 2015 launched a 10-year jurisdictional program to have all crude palm oil produced in Sabah certified as sustainable palm oil by 2025. This move to implement the world’s first jurisdictional commitment on sustainable palm oil production marks an important step for the future of the industry that is in line with the green products and market strategy of Malaysia. As the state of Sabah now seeks to be the first jurisdiction with 100% certified palm oil supply, the Malua Biobank could be an important enabler in local compensatory mitigation to support a jurisdictional approach. 3 the lack of a

---

<sup>17</sup> <http://database.v-cs.org/sites/vcs.benfredaconsulting.com/files/AFOLU%20Requirements%2C%20v3.4.pdf>

regulatory framework for green products has hindered local producers from pursuing international standards.

### Social co-benefits

Studies undertaken by local NGOs found that there are no indigenous communities within Malua and there are no known communities with traditional land claims in the vicinity. Additional social opportunities include education and activities promoting economic alternatives to wildlife poaching or the exotic pet trade. There may be opportunities to demonstrate that the Malua Biobank can provide alternative forms of employment including in tourism, education, sustainable harvest of natural products and other forms of sustainable economic activity.

### Project management:

New Forests Asia, a wholly owned subsidiary of New Forests Pty Ltd of Australia, is based in Singapore and has been managing the Malua Biobank since the project's inception in 2008. This includes managing the operating relationship with RBJ and the Sabah Forestry Department (see below), such as holding the Project Steering Committee meetings, working through annual budgets, overseeing expenditures, and developing and updating the forest conservation management plan. New Forests Asia has also overseen credit market development, such as working with the RSPO on development of its compensation mechanism, and on developing the Malua carbon project concept.

New Forests has agreed to continue as the project manager of Malua Biobank if additional finance can be acquired to support the carbon project and ongoing on-ground operations. More information on New Forests is available upon request and on our website at [www.newforests.com.au](http://www.newforests.com.au).

The project has been funded by Eco Products Fund, LP (EPF) since 2008, and EPF is now looking to transfer its 100% interest in MWHCB Inc., a British Virgin Islands company operating the Malua Biobank. The term of EPF is winding up in December 2016, and EPF is therefore seeking to find a new funder to support the project costs moving forward and to initiate the carbon project operations and development. New Forests would continue as the project manager, provided that suitable climate finance can be obtained.

The Malua Biobank is governed by a Project Steering Committee (PSC), which is chaired by David Brand, CEO of New Forests. The PSC members include three representatives elected by RBJ and SFD jointly and three representatives appointed by MWHCB, Inc. The PSC oversees reports and recommendations received from the Advisory Committee (AC), the performance of the Malua Biobank, the Conservation Management Plan, and the performance of RBJ in implementing the CMP and also approves annual budgets.

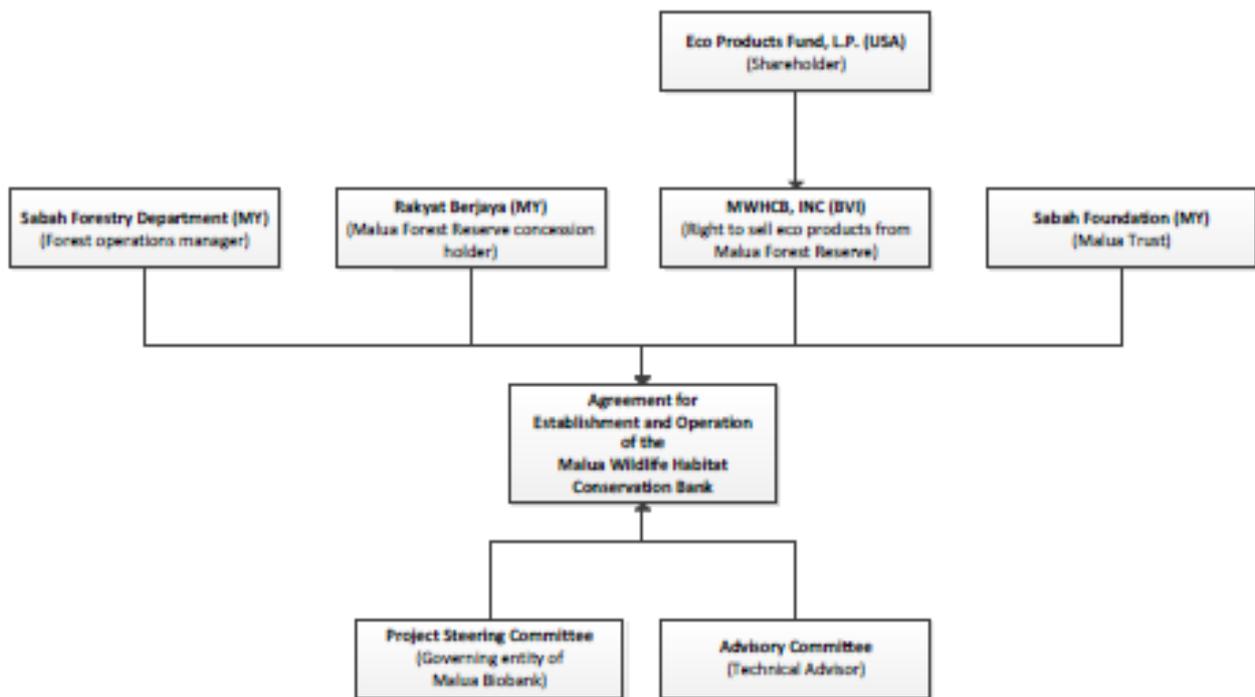
The Advisory Committee provides independent technical advice for the project, submitting written reports of its findings and recommendations in regard to the CMP and the annual budget to the PSC and the Malua Trust after each meeting.

Members of the Advisory Committee are appointed by the EPF, the SFD and RBJ jointly, and are all members of local and international NGOs, scientific experts, and other individuals deemed relevant for management of the Biobank. The extensive involvement of the scientific community provides not only technical guidance for the project, but also makes available capacity for other

scientific research to be integrated into the project. This capacity adds to the already vibrant pool of research that is ongoing in the Malua Forest Reserve.

Groups with representatives on the Advisory Committee include LEAP, Borneo Rhino Alliance, Sabah Forestry Department, the South East Asia Rainforest Research Programme, Hutan, and WWF Malaysia.

The following graphic shows the current structure of the Malua Biobank:



## Appendix 1. Verification and rigor of biodiversity conservation certificates

### Independent Verification of Habitat Restoration

The Malua Forest Reserve is independently appraised, both against the FSC (Forest Stewardship Council) standard and the ‘management goals’ and ‘priority actions’ outlined in the Conservation Management Plan. Results of annual monitoring reports are made available to all stakeholders. The Malua Biobank has achieved FSC certification as part of the larger Ulu Segama-Malua Forest Reserve (FSC certificate number scs-fm/coc- 00141n). FSC is an independent, non-governmental, not for profit multi-stakeholder sustainability standard setting and accreditation body for forestry. The FSC standard covers environmental, social, and technical issues. The Ulu Segama achieved FSC certification in June 2011.

## Permanence of Habitat Restoration

The contractual agreement governing the Malua Biobank has an initial term of 50 years. Even after the BCCs of the bank have been sold out, it will be monitored and financially supported on a perpetual basis by the Malua Trust, a trust fund endowed by 20% of the gross revenues of BCC sales. The Malua Trust is managed by an independent trustee (currently Yayasan Sabah Trustees) and will be invested in a diverse portfolio. The aim is to provide annual distributions that will support monitoring, conservation management, research and local community education programs for decades into the future.

## BCC Release Schedule

The BCC release schedule is based on an immediate 40% (1,360,000 BCCs) release from the cessation of logging (e.g. removal of the threatening process). Additional BCC release will be dependent on the continuing execution of the Conservation Management Plan during the implementation phase.

## Registration of BCCs

The BCCs from the Malua Biobank will be held in the Markit global biodiversity registry. Markit is a leading carbon registry that has adapted their current systems to include BCCs. Markit is a fully functioning credible and secure (financial markets based) online registry enabling efficient, transparent and robust issuance, housing, ownership transfer, and retirement of the BCCs. Each buyer of BCCs can create their own account to hold their BCCs if they desire, and transfer or sell them to others. Alternatively, MWHCB Inc can retire the BCCs on behalf of the buyer in the Biobank's own account. More information can be found at [www.markit.com](http://www.markit.com) and [https://mer.markit.com/br-reg/public/index.jsp?name=Malua&entity=project&entity\\_domain=Markit,GoldStandard](https://mer.markit.com/br-reg/public/index.jsp?name=Malua&entity=project&entity_domain=Markit,GoldStandard).

## Appendix 2. RSPO compensation framework

### Overview

Since the project's inception in 2008, the Malua Biobank, located in Sabah, Malaysia, has sought to be a source of biodiversity-based compensation for companies involved in the palm oil supply chain. The palm oil industry has been a significant driver of forest conversion in Malaysia and Indonesia. The Malua Biobank, based in Sabah, Malaysia, is offering Biodiversity Conservation Certificates (BCCs), and each BCC represents 100 square meters of tropical rainforest conservation. The BCCs are being offered as a way for companies in the palm oil supply chain to compensate for historical deforestation and support the protection and restoration of high conservation value (HCV) areas. The investment thesis of the Malua Biobank has been to offer BCCs as a credible and reliable source of forest conservation that buyers can use to enhance the sustainability of their palm oil product to make it more saleable in the market and/or to voluntarily support tropical forest conservation and protection of some of Borneo's most

threatened habitat and species. New Forests believes the Malua Biobank is based on a scalable conservation finance model that can be implemented in different geographies and industries.

Over the past seven years, New Forests has pursued a number of different routes to market for Malua BCCs including:

- Bilateral sales to upstream growers of oil palm seeking to support forest conservation and/or compensate for historical deforestation;
- Bilateral sales to downstream users of palm oil that have commitments to use certified palm oil (CPO) in their products;
- Bilateral sales to a palm oil industry association seeking to voluntarily support forest conservation for the purposes of corporate social responsibility;
- Retail sales to individuals seeking to support rain forest conservation; and
- Engagement with the Roundtable on Sustainable Palm Oil (RSPO) on its development of a Biobanking program, with the Malua Biobank as a demonstration project for biodiversity-based compensation for historical deforestation.

Malua has had some limited BCC sales to date via bilateral sales to oil palm growers, an industry association, and retail buyers. In general, bilateral sales and retail sales have proven difficult to execute for a number of reasons. Many downstream palm oil buyers and upstream oil palm growers are members of the RSPO and are working through the RSPO to improve the sustainability of the supply chain and do not want to take on additional commitments or projects outside of that industry process. While the market for retail BCC buyers is potentially very large, it is difficult to achieve sales at scale. For conservation finance models to be successful, there must be a driver creating value for ecosystem services, such as regulation or changing consumer preferences.

Therefore, having pursued these various routes to market over the years, New Forests believes the largest market opportunity for BCCs is the compensation program currently under development by the RSPO. The buyers of the BCCs in this market would be oil palm growers seeking to become suppliers of CPO and who would purchase BCCs as a way to compensate for historical deforestation as defined by the RSPO. For prospective investors in the Malua Biobank who are interested in supporting conservation finance, it is important to note that the RSPO compensation program also creates an opportunity to replicate the Malua Biobank model to other projects and geographies where the oil palm industry is active (e.g. Indonesia, parts of Africa). New Forests believes that if the RSPO were successful in introducing a Biobanking model within the compensation program, it may be possible to consider how this framework could be used in other commodity roundtables seeking to enhance the sustainability of their industries.

This briefing paper provides an overview of the RSPO's program to introduce a compensation program for historical deforestation, which would include with third party project such as Biobanks. It also describes the Government of Sabah's related efforts to certify its entire oil palm estate as certified under the RSPO standard. The briefing paper discusses the process and estimated size of the compensation market and its prospects for Malua BCC sales. New Forests believes the Malua Biobank is uniquely positioned to become a compensation project, creating

commercial value for tropical forest conservation. A long-term investment in the Malua Biobank in 2016 would enable the project to continue at the same time that the RSPO is developing its guidelines on Biobanking project creation and the submission process. New Forests would seek to position the Malua Biobank as a proof of concept to demonstrate to stakeholders, policymakers and governments the potential of Biobanking and how Malua is the vanguard in this process.

## Background on the RSPO

The RSPO is a global, multi-stakeholder initiative established in 2004 to promote the production and use of sustainable palm oil. At the heart of the RSPO certification process is the RSPO Principles and Criteria (P&C) for Sustainable Palm Oil Production. The P&C were adopted in November 2005; they were piloted for two years and then released for use in November 2007. After 5 years of implementation, the P&C were reviewed by the RSPO, and a revised version of the P&C was released in 2013. Palm oil producers are certified through verification of the production process to the P&C by accredited Certifying Bodies. All organisations in the supply chain that use RSPO certified sustainable oil products are audited to prevent overselling and mixing palm oil with conventional (or non-sustainable) oil palm products. The members of RSPO are from throughout the supply chain and the stakeholder community, including plantation companies, processors and traders, consumer goods manufacturers and retailers of palm oil products, financial institutions, environmental NGOs and social NGOs. The RSPO has over 2,600 members and certifies 20% of the global supply of palm oil. There are approximately 3.5 million hectares of certified oil palm plantation<sup>18</sup>.

## RSPO remediation and compensation procedures

### *Whom They Apply To*

In accordance with the RSPO P&C, RSPO growers are required to have completed High Conservation Values (HCV) assessments of their land holdings for new plantings from November 2005. The intention has been that areas of land under the control of RSPO growers that contain or support HCV are not cleared for planting from November 2005.

The first version of the P&C in 2007 (RSPO's Principles, Criteria and associated mandatory Indicators) stated that:

***Criterion 7.3 New plantings since November 2005 have not replaced primary forest or any area required to maintain or enhance one or more High Conservation Values.***

***An HCV assessment, including stakeholder consultation, is conducted prior to any conversion. Dates of land preparation and commencement are recorded.***

---

<sup>18</sup> See Roundtable on Sustainable Palm Oil, <http://www.rspo.org/about/impacts>

However, there has been land clearance without prior HCV assessment since November 2005. The RSPO has recognised the importance of its members restoring or compensating for the potential HCV losses that may have occurred, but has noted that such land clearance may have been the result of a wide range of causes, including unfamiliarity with RSPO's requirements at the time, activities by previous owners, mistakes, or poorly implemented operational procedures. Therefore, rather than insisting on requirements that would forever bar certain growers from certification and even RSPO membership, the RSPO developed a formal procedure to remediate and compensate for land clearance that has occurred since November 2005 and that took place without prior HCV assessment. The RSPO Board of Governors endorsed the process at the latest RSPO Roundtable, which took place on November 13, 2015.

The use of this Remediation and Compensation Procedure is intended to encourage preservation of biodiversity, environmental, social, and cultural HCVs, and safeguard the areas necessary to maintain them in the context of oil palm plantation expansion. The procedure also supports compliance with RSPO standards as defined in its P&C. The Remediation and Compensation Procedure applies to the following:

- All RSPO members, both certified and non-certified
- Regions where RSPO is not yet active
- Growers who may seek RSPO membership and/or apply for RSPO certification in the future
- Outsourced suppliers, including smallholders that the major growers use to augment their internal supply chains

Remediation and compensation is required for any clearance since 2005 without prior HCV assessment on land controlled by an oil palm grower, regardless of whether clearing occurred before the land was acquired or leased by that grower. The Remediation and Compensation Procedure also applies to land leased or acquired by an RSPO member.

The Remediation and Compensation Procedure as outlined in this document does not apply to independent smallholders seeking certification.

### Guiding principles & compensation requirements

The Remediation and Compensation Procedure reflects the following guiding principles:

1. Early cases of clearance without HCV assessment carry less compensation liability than more recent cases. Thus, the procedure distinguishes between non-compliant clearance carried out:

- From November 2005 to November 2007 (when the RSPO P&C were being trialled);
- From November 2007 to 31 December 2009;

- From 1 January 2010 (when the NPP was introduced) 5 to 9 May 2014; and
  - Since 9 May 2014, the compensation procedure bans current members from clearing without HCV assessments and aims to prevent the potential for a “clear and pay” approach by non-members. However, it does allow for new members to join the RSPO in the future and existing RSPO members to acquire holdings from non-members and still progress towards certification.
2. Non-compliant clearance by RSPO members at the time of clearance since November 2007 carries a higher compensation liability than such clearance by non-RSPO members. This is because members are formally committed to RSPO and are expected to be better informed about RSPO’s requirements than non-members.
  3. The procedures are designed to allow growers flexibility in how they fulfil their compensation liability and encourage conservation measures that maximise conservation outcomes in relation to concession areas allocated to them by the government for the development of the plantation.

While the RSPO is seeking to ensure that members practise due diligence in acquiring land for oil palm, it is also recognised that companies cannot be held responsible for all clearance of land since 2005 prior to that land coming under their management. In particular, the RSPO encourages members to expand onto appropriate land, which may have been cleared by individuals or other groups for their own use. Therefore, in several cases, the Remediation and Compensation Procedure distinguishes between corporate (all clearing for sole purpose of plantation establishment) and non-corporate land clearance (all clearing carried out by communities and government not related to the plantation), whereby growers are not required to compensate for non-corporate clearance.

The table below summarises the levels of compensation and/or remediation allowed and/or required for an oil palm plantation operation to remain an RSPO member and to maintain their certificate. These requirements thus set the prospective market size for compensation that Biobanks such as the Malua Biobank may service. These compensation levels were agreed to by the RSPO Board of Directors during the Roundtable 13 conference in Kuala Lumpur in November 2015.

**Table 1 - Compensation Requirements for RSPO Members**

	Land controlled by non-RSPO member at time of clearance	Land controlled by RSPO member at the time of clearance (including land acquired from other RSPO member)
Land cleared after 9 <sup>th</sup> May 2014	<ul style="list-style-type: none"> <li>• Social remediation<sup>6</sup></li> <li>• Environmental remediation<sup>7</sup></li> <li>• <b>Twice the sum</b> of all corporate clearing without prior HCV assessment multiplied by their vegetation coefficient (s)<sup>8</sup> in Nov 2005</li> </ul>	<p>Expulsion from the RSPO</p> <p>If the areas are later acquired by another RSPO member and only if the seller was a member of RSPO before 9 May 2014, liability is as per non-member.</p>
Land cleared between 1 <sup>st</sup> January and 9 <sup>th</sup> May 2014	<ul style="list-style-type: none"> <li>• Social remediation</li> <li>• Environmental remediation</li> <li>• <b>The sum</b> of all corporate clearing without prior HCV assessment multiplied by their vegetation coefficient (s) in Nov 2005</li> </ul>	<ul style="list-style-type: none"> <li>• Social remediation</li> <li>• Environmental remediation</li> <li>• <b>Twice the sum</b> of all corporate clearing without prior HCV assessment multiplied by their vegetation coefficient (s) in Nov 2005</li> </ul>
Land cleared between December 2007 and 31 December 2009	<ul style="list-style-type: none"> <li>• Social remediation</li> <li>• Environmental remediation</li> <li>• <b>Half the sum</b> of all corporate clearing without prior HCV assessment multiplied by their vegetation coefficient (s) in Nov 2005</li> </ul>	<ul style="list-style-type: none"> <li>• Social remediation</li> <li>• Environmental remediation</li> <li>• <b>The sum</b> of all corporate clearing without prior HCV assessment multiplied by their vegetation coefficient (s) in Nov 2005</li> </ul>
Land cleared between November 2005 and November 2007	<ul style="list-style-type: none"> <li>• Social remediation</li> <li>• Environmental remediation</li> </ul>	<ul style="list-style-type: none"> <li>• Social remediation</li> <li>• Environmental remediation</li> </ul>

### Determining the area of compensation required

In other jurisdictions where Biobanking has been used—such as the mitigation banking market in the United States—developers of land must conduct environmental impact assessments that measure the level of unavoidable impacts to protected areas and thus must be compensated in advance of development or clearing. The compensation liability in the US is typically calculated on an area basis for a type of ecosystem. Similarly, the RSPO Remediation and Compensation Procedure include a number of key requirements around disclosure, liability assessment, development of a compensation plan, and implementation and monitoring. However, in the case of the RSPO, determining the area of clearance for members seeking certification will largely be retrospective and thus may be difficult, particularly where there has been poor mapping, data, and record keeping at the time of clearance.

The requirements of the compensation procedures are summarised below.

#### Disclosure

- Disclosure of non-compliant land clearance must be reported to the Compensation Panel<sup>9</sup>
- Submission of evidence of Standard Operating Procedures (SOPs) designed to avoid any new non-compliant land clearance
- Land Use Change (LUC) analysis since November 2005<sup>19</sup>

#### Liability Assessment

- Identification of social remediation liability
- Identification of areas requiring environmental remediation
- Calculation of conservation compensation liability

#### Development and Approval of Remediation and Compensation Plan

- Development of remediation and compensation concept notes and actions plans, which are evaluated by the Compensation Panel<sup>20</sup>

#### Implementation and monitoring of Remediation and Compensation Plan

- Remediating and compensating affected stakeholders for loss of social HCVs (HCV 4,5 & 6)
- Remediation of areas requiring environmental remediation
- Implementing conservation projects and monitoring outcomes

The voluntary disclosure and LUC analysis are currently ongoing and the timetable for the completions for all LUC analysis reports is the second quarter of 2016.

---

<sup>19</sup> After a grower has voluntarily disclosed their non-compliant clearing then a Land Use Change (LUC) analysis must be carry out. A land use change analysis will determine historically the vegetation status of the area cleared in November 2005 (or as close to this time as possible), based on interpretation of remote sensing data. This will serve as a proxy for the potential loss of HCV 1-3, and ecological aspects of HCV 4, in all areas cleared without prior HCV assessment after November 2005.

<sup>20</sup> The Compensation Panel will be comprised of members assigned by the co-chairs of the Biodiversity HCV Working Group (BHCV WG) to each compensation case, after the disclosure of non-compliant land clearance. The panel will be comprised of four members of the RSPO, preferably members of the BHCV WG, with balanced representation of different stakeholder categories and expertise appropriate to biodiversity conservation and social impacts, and one member of the RSPO secretariat. The panel could be supported by extra capacity as needed, including non-RSPO members.

To date, 61 growers, out of an estimated 150 that are members of the RSPO, have reported that they have a compensation liability and will carry out a company-level assessment to calculate the actual liability exposure. Of those, 25 members have completed their company assessments and submitted them to the RSPO Compensation Task Force for review. The Task Force has reviewed 15 of those company assessments, and the total liability under the compensation process totals 25,361 ha from those LUC reports.<sup>21</sup> This would indicate that there is still a large number of companies that need to submit their Land Use Change analyses and the total size of the liability will likely grow.

However, at this juncture, it is difficult to estimate the ultimate total size of the compensation liability and its geographic location. New Forests' understanding is that this data will become available by June 2016 as RSPO members meet their requirements under the Compensation Procedures, as discussed above.

### A grower's options for meeting its compensation liability

Once the liability has been calculated, reported, and agreed to by the Compensation Panel, a company will need to create a liability action plan. The proposed guidelines to date suggest that a company can meet its liability through engaging in a conservation project through one of two options: (1) "hectare for hectare" or (2) "dollar for hectare". These are defined in the following way:

**"Hectare for hectare"**. An area of land equal to the final conservation liability is managed primarily to conserve biodiversity by the company and/or by a third party within or outside areas managed by the company. This projects can occur *in-situ* or *ex-situ*.

**"Dollar for hectare"**. The company provides funding to a third party for projects or programmes contributing to achieving conservation objectives, located outside the areas managed by the company. The total amount of funding equals the final conservation liability in hectares multiplied by USD 2,500 per hectare.

From New Forests' perspective, both options would benefit a project like the Malua Biobank and provide optionality for a route to market within the RSPO. Malua is 34,000 hectares in size and therefore a project of scale that could service both routes to market. The "hectare for hectare" approach would imply that Malua would act as a "turn-key" project for a single grower and provide all of the compensation for its liability. On the other hand, the "dollar for hectare" approach would imply that Malua would act more like a US mitigation bank, whereby it would sell a biodiversity product on a unit basis and service multiple buyers. The important thing to note is that the RSPO has proposed to set the compensation price at USD 2,500 per hectare. To date, Malua has been selling its Biodiversity Conservation Certificates—with each BCC relating to 100 m<sup>2</sup> of forest conservation—at USD 10 per BCC. This translates to USD 1,000 per hectare. In other words, the RSPO has proposed to set the compensation price at 2.5 times the asking price for Malua BCCs, which would create a significant potential value uplift for Malua. New Forests' understanding is that this set compensation price proposed by the RSPO has been heavily contested by the grower members and will likely be debated before the compensation project guidelines are finalised.

The project guidelines to date suggest each project must address four criteria:

---

<sup>21</sup> Update on Remediation and Compensation Procedures, Presentation given at the RT13 - Ann Rosenbarger (201), slide 4.

**Additional** - The project adds to conservation efforts already planned and funded or executed by the company or other parties and to any measures required anyway by legislation or provisions in the RSPO standard.

**Long-lasting** - The project should be adequately resourced, have clearly defined goals, timeframes, and responsibilities, and be designed to deliver specified outcomes that last at least 25 years (and preferably in perpetuity).

**Equitable** - The project must be equitable through engaging and involving affected stakeholders in project planning, decision-making, and implementation, fair and balanced sharing of responsibilities and rewards, and through respect for legal and customary arrangements.

**Knowledge-based** - The project should be based on sound scientific and/or traditional knowledge with results widely disseminated and communicated to stakeholders and partners in a transparent and timely manner.

All projects must be evaluated and monitored independently. Growers are responsible for demonstrating delivery of conservation outcomes as per the compensation option they choose. Note that if a grower decides to use third party projects that are ex-situ (e.g. Malua) it is then assumed liability for the maintenance and monitoring of the project will be borne by the project developer. In cases where conservation projects entail economic support over prolonged periods of time, e.g. annual instalments over several years, growers should demonstrate that they are making corresponding resources available. As an example, accounts supervised by legally-constituted trustees or other similar mechanisms in the country where the compensation plan is implemented can be set up to ensure long-term project implementation. This is analogous to, for example, the Malua Trust, which will oversee long-term stewardship of the Malua Forest Reserve once it has sold out of BCCs.

New Forests believes the Malua Biobank meets all of these criteria due to the way the project has been developed, structured, and managed, including the joint venture with the Sabah Government; management by the Project Steering Committee; the contributions by the Advisory Board; and the Malua Trust.

The RSPO is currently working through their procedures for approving projects and has created a multi-stakeholder group under the RSPO Biodiversity & High Conservation Values Working Group (BHCVWG). The group will also scout for new project ideas and funding models. It is hoped that large Biobank-type projects will be created so that RSPO members can purchase their compensation from them and therefore not have the burden of creating and managing their own projects. This is therefore an ideal time to package Malua and submit the project to the working group once it is up and running. The timetable for the creation of this task force is unclear. The current estimate for this to happen is the first half of 2016.

### **Sabah jurisdictional approach**

A further positive development for Malua has been an announcement by the State Government of Sabah that it has launched a 10-year jurisdictional program to have all crude palm oil

produced in Sabah certified as sustainable palm oil by 2025.<sup>22</sup> This commitment was approved by the Sabah Government Cabinet in October 2015. This move to implement the world's first jurisdictional commitments on sustainable palm oil production marks an important step for the future of the industry. The RSPO is supportive of the State Government's decision and agrees that jurisdictional plan will bring long-term benefits to the industry. In particular, the jurisdictional approach would compel small holders to certify their plantations. The RSPO reports that as much as 40 percent of global palm oil supply comes from small holders yet certification is oftentimes too burdensome to achieve for small holders. The jurisdictional approach would assist small holders in achieving certification and help such growers access the growing market for certified palm oil and help Sabah achieve its sustainability commitments. It is hoped that statewide RSPO certification will see stakeholders working together to overcome productivity, environmental and social issues affecting the industry.

Sabah produces 12% of the global supply of oil palm on approximately 1.5 million hectares, which means 20% of its land area is now under oil palm cultivation. The current RSPO companies cover only 28% (just over 400,000 hectares) of the oil palm cultivation. There are eight estates and smallholder schemes that are RSPO certified (including major players such as Wilmar, Sime Darby and IOI) producing eight million megatons of fresh fruit bunches.

Other regional governments are also exploring such jurisdictional commitments, including Central Kalimantan in Indonesia.<sup>23</sup>

## Conclusion

The major obstacle for any environmental market or payment for ecosystem services is legislation and regulation to support the concept and create the market for the credits produced. The RSPO compensation framework, which requires its members to compensate their historic forest conversion liabilities, would in effect create a market for biodiversity payments due to the growing demand for certified sustainable palm oil. As such, these developments at the RSPO are an important development for making the Malua Biobank commercially successful.

The RSPO considers third party compensation projects, such as Malua, as the ideal solution to help oil palm growers meet their compensation liabilities. The RSPO wants large-scale conservation projects that can provide significant environmental benefits and provide cost-effective compensation for growers. The Malua Biobank is thus uniquely positioned to become such a project.

There are a number of key next steps. New Forests will stay in close contact with the RSPO to monitor the development of the compensation working group, the guidelines on project

---

<sup>22</sup> "RSPO-certified palm oil could become the norm in Sabah, Kalimantan," <http://www.rspo.org/news-and-events/news/rspocertified-palm-oil-could-become-the-norm-in-sabah-kalimantan>, 30 October 2015; and "RSPO welcomes Sabah's move to certify all CPO" November 12, 2015, <http://www.dailyexpress.com.my/news.cfm?NewsID=104437>

<sup>23</sup> Central Kalimantan Announces Jurisdictional Certification for Sustainable Palm Oil," June 26, 2015, <http://www.rspo.org/news-and-events/news/central-kalimantan-announces-jurisdictional-certification-for-sustainable-palm-oil>.

creation, and the project submission process. The working group will be an excellent leverage point for New Forests to position Malua within the compensation framework and prove the concept of Biobanking in Asia. This proof of concept is important because it will show to wider stakeholders, policymakers and governments the potential of Biobanking and how Malua is the vanguard in this process.

In conjunction with the submission of Malua to the RSPO compensation process, it will also be important to monitor the growers' progress in disclosing and carrying out their LUC analysis. The results from the LUC reports will give the total area of compensation of the RSPO growers and the potential market for Malua's BCCs. Additionally, New Forests will identify any growers that need assistance with their LUC and subsequent project development to help with the creation of their Liability Action plans and Compensation Project Concept Notes to be submitted to the Compensation Panel.

The Malua project, for the last seven years, has been waiting for the RSPO compensation process to be completed. It has been a slow process and will likely continue to be challenging. However, the RSPO has now approved a methodology for calculating compensation liabilities and mandated members calculate and disclose their liabilities. This is the ultimate recognition by the RSPO that investment in Biobanking projects like Malua are the most viable option for their growers to achieve certification, move the industry toward sustainability, and generate net positive environmental and social outcomes.

Ultimately, the Malua model is scalable and may replicated in other industries. The RSPO is not the only certification accreditation body struggling with the problem of historic forest conversion. All certification schemes need to address the issue to improve the claims of environmental and social responsibility by those who have engaged in forest conversion. New Forests expects that the Malua model can be scaled geographically, into other commodities, into and other certification programmes as a cost-effective and environmentally efficacious solution.

## References

Update on Remediation and Compensation Procedures, Presentation given at the RT13 - Ann Rosenbarger (2015)

Developing Conservation Projects for the RSPO Compensation Mechanism, Presentation given at the RT 13 - Mike Zrust (2015)

RSPO Remediation & Compensation Procedures, endorsed by BoG on 16th Nov, 2015 & Annex 1-9, Draft Procedures Document - RSPO (2015)

## Policy Briefs

# 1. Conservation and Restoration Finance

---

## Credit Suisse and Baker & McKenzie

For Conservation efforts started in the nineteenth century as an endeavour financed largely out of the public sector. Over time, as the interest in the conservation movement grew and the needs for conservation finance outstripped what was available in the public sector, philanthropic efforts helped to finance conservation endeavours. As population has increased dramatically since the nineteenth century, there are increasing strains on forest areas. Rates of deforestation have grown drastically - including in the Asia Pacific region. However, the cost of financing conservation efforts are significant and the larger the scale of the intervention the more significant the financial need. Consequently, the need for conservation finance is higher than ever.

There is substantial public finance now being directed towards conservation efforts. The Global Canopy Programme (2012) estimates that current flows of funds to conservation are around USD 51.8 billion per year, of which around 80% - USD 41.4 billion per year- come from non-market and mainly domestic government budgetary spending. Substantially more funding is required. We anticipate that USD 300-400 billion is a reasonable estimate of the projected annual costs for biodiversity protection broadly. Even simply to protect one element of forest conservation - slowing deforestation by 2030 - it is anticipated that between USD 17-33 billion is required per annum.<sup>24</sup>

Given the scale of financing required to slow deforestation, substantially more finance must come from the vastly larger pools of private sector capital. Indeed, there would be sufficient financial capital available if the main investor segments (i.e. HNW/UHNW individuals, retail and institutional investors) globally allocated 1% of their new and reinvested capital to conservation.<sup>25</sup> However, absent an economic return from investing in conservation, there is unlikely to be any increased private sector interest and thus finance flowing into the protection of global rainforests.

In order to attract increased private finance to conservation though, greater effort needs to be made to make conservation projects more investable and attractive to the investment community. This involves better defining the benefits of such projects such that they can be

---

<sup>24</sup> The most detailed analysis of such costs has been conducted in 2008: Johan Eliasch, "Climate Change: Financing Global Forests" (2008), p 75. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/228833/9780108507632.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228833/9780108507632.pdf). However, more recent analysis have suggested similar figures of approximately USD20 billion per annum, see e.g., Gustavo Silva-Chaves et al, "REDD+ Finance Flows 2009-2014: Trends and Lessons Learned in REDD+ Countries" (2015), p 4. Available at: [http://www.forest-trends.org/documents/files/doc\\_5029.pdf](http://www.forest-trends.org/documents/files/doc_5029.pdf).

<sup>25</sup> <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/environment/conservation-finance-en.pdf>

effectively monetised and scaled up. Key to this process is building an institutional asset class for conservation outcomes into which investors can receive value. The countries within which these conservation projects sit, as well as countries from which investors come, can play a substantial role in devising the conditions and financial products which will help achieve increased conservation funding. In short a value must be placed on conservation that is economically competitive.

This paper discusses the ways in which governments in Asia Pacific and beyond can play a role in scaling up finance into conservation in three sections. The paper starts by outlining the ways that conservation and restoration finance is important for countries in Asia Pacific. It goes on to examine the conditions needed for increased financing into conservation. Finally, the paper ends by considering the steps that governments can take to achieve such scaled up finance.

### **Why is conservation and restoration finance needed among the countries of Asia Pacific?**

The Asia Pacific region has played a key role as the global engine for economic growth over the last few decades. The IMF estimates that while in 2000 the region accounted for less than 30 % of world output, by 2014 the region's contribution had risen to almost 40 %.<sup>26</sup> In part this growth has been driven by the utilisation and export of natural resources within and around the region. UNEP estimates that this substantial reliance on natural resources to fuel economic growth in the region, has caused it to become the largest user of natural resources globally.<sup>27</sup> This places extreme stress on local environments and is leading to natural resource depletion in the region.

In this context, conservation and restoration finance is desperately needed because of the high-opportunity costs associated with conservation efforts. Preserving an area of highly biodiverse tropical rainforest is made much more difficult when the same area can be cleared and used to generate profits from, say, a palm oil plantation. Given this is the current economic model which is fuelling growth in the region, finance is needed to encourage a financially viable alternative for growth. Additionally, many heavily forested countries face capacity and resourcing challenges, making it difficult to protect forests. These features make the need for an economic return from forests all the more critical, to compensate for loss of revenues.

While there are many difficulties in, and competing methodologies for, assessing the total funding needed to protect biodiversity and ecosystems at a global scale, it is clear that a large gap remains between the current funding pool available for conservation and restoration and the needs for finance.

To date most conservation finance has been from public or philanthropic capital. In the introduction, we noted that the majority of finance for forest conservation comes from public sources of finance. In addition, philanthropy only accounts for less than USD 2 billion per year of finance spent on conservation. Of the USD 10.4 billion per year in funds generated by market-based activities, more than USD 6.5 billion are provided by "green commodities", those natural

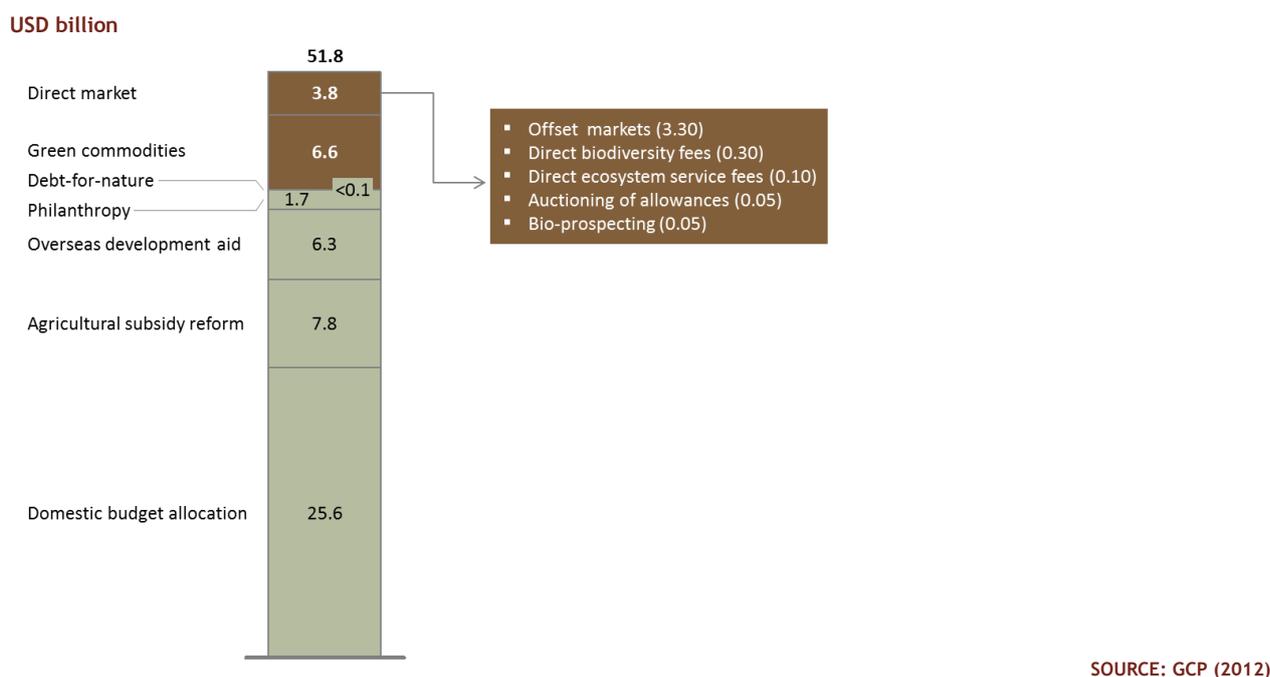
---

<sup>26</sup> <https://www.imf.org/external/pubs/ft/reo/2015/apd/eng/pdf/areo0415c1.pdf>

<sup>27</sup> [http://www.unep.org/roap/Portals/96/REEO\\_AP\\_Key.pdf](http://www.unep.org/roap/Portals/96/REEO_AP_Key.pdf)

products that are produced in an environmentally sustainable way and often carry associated certification such as FSC, or MSC. A further USD 3 billion comes from (largely carbon) offset markets. 78% of conservation finance is generated in developed countries, 59% of which is spent there - the remainder is transferred to emerging and developing economies.

See Figure 1 below.



**Figure 1: Conservation Finance (2012)**

This broader trend in public finance is reflected in a number of specific initiatives for forest conservation as well. With respect to REDD+ for instance, between 2006 and 2014 a total of USD 9.8 billion was invested into forests, almost 90% of which came from the public sector.<sup>28</sup>

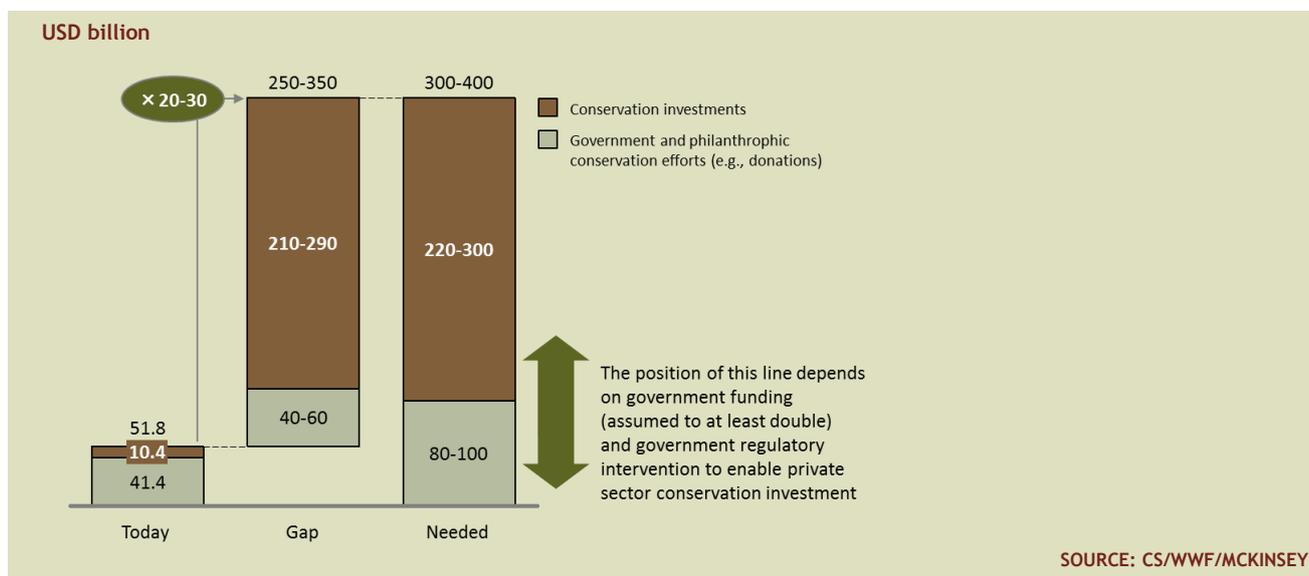
Although there is some scope and ongoing efforts to increase and/or refocus non-market sources of conservation finance (including through pledges to the new UN Green Climate Fund), there is a limit to what government budgets can provide, particularly in light of the continued fiscal constraints in developed countries. Consequently, there is an urgent need for the international community to develop new and innovative sources of finance. In the next section, we discuss the conditions needed to achieve scaled up financing.

The required growth in conservation finance is significant. Taking annual global conservation needs to be USD 300-400 billion, and assuming current governmental and philanthropic conservation efforts were to roughly double to USD 100 billion per year, a gap of USD 200-300

<sup>28</sup> Marigold Norman and Smita Nakhooda, "The State of REDD+ Finance" (2014) *CGD Climate and Forest Paper Series 5*, p2.

billion would remain. This corresponds to around 1% of total private sector annual investments globally.<sup>29</sup>

Figure 2 shows that if this gap were to be filled by investing capital to unlock ecosystem cash flows that generate modest financial returns, the funding flows these investments generate would need to be scaled up at least 20-30 times their current level of USD 10.4 billion per year. There are a number of contextual factors which suggest that this is possible: the recently agreed Paris Agreement calls on countries to achieve net-zero emissions during the century; low interest rates and a growing desire for impact investment vehicles; and new collaborations between NGOs and the private sector are creating the pipelines required for growth in financing. However, as we discuss in the next section, some key conditions need to be met to achieve the large-scale investment growth still needed to protect biodiversity and ecosystems.



**Figure 2: Global financing needs for forest conservation**

Additionally, in the case of REDD+, it is not just that finance is needed from the private sector, but also that it is needed in a particular set of activities. International public finance has largely been directed to efforts to develop national policy frameworks for jurisdictional REDD+.<sup>30</sup> While this is an important endeavour, it is a highly complex exercise to introduce REDD+ into national legal frameworks (see the APRRP Policy Paper by Baker & McKenzie). As a consequence, much of the public finance has not yet been directed towards purchasing results of forest conservation.

At the same time, forest conservation projects, such as those registered under the Verified Carbon Standard (VCS) are facing significant shortage of funds. Some of these VCS projects

<sup>29</sup> <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/environment/conservation-finance-en.pdf>

<sup>30</sup> 'Jurisdictional REDD+' refers to REDD+ activities developed at the scale of a government jurisdiction - rather than at an individual project level.

protect critical and large areas of forests, but are unable to sustain themselves. The main revenue stream for these projects is the sale of forest carbon credits into the voluntary carbon market. In recent years, there has been a substantial decline in the value of carbon credits in the voluntary carbon market. This has led to these forest areas being under threat of being lost to deforestation. Thus, private finance is needed particularly for these project level efforts.

### Conditions needed to attract increased investment into conservation

To achieve the order of magnitude of financial scale-up needed, it is crucial that the field of conservation finance expands from donor-driven financing toward a commercial, investor-driven market. Research with investors, banks, conservation finance market participants and other experts over several years has highlighted that there are certain expectations and conditions which would make such investments more attractive to traditional financial markets, and thus which are prerequisite to scaling up investment into conservation.

Investors report that the criteria that they are looking for in conservation investments are similar to traditional investments. Our research highlighted that investors get involved and have an interest in conservation finance for a number of different reasons. We categorised these amongst three groups: donors, wealth preserving investors and return oriented investors. The latter two categories of investors have not featured prominently in considerations of conservation finance to date, and so we have been interested to understand how to make conservation investments more appealing to this group in particular.

Figure 3 below highlights the objectives of different conservation finance investors.

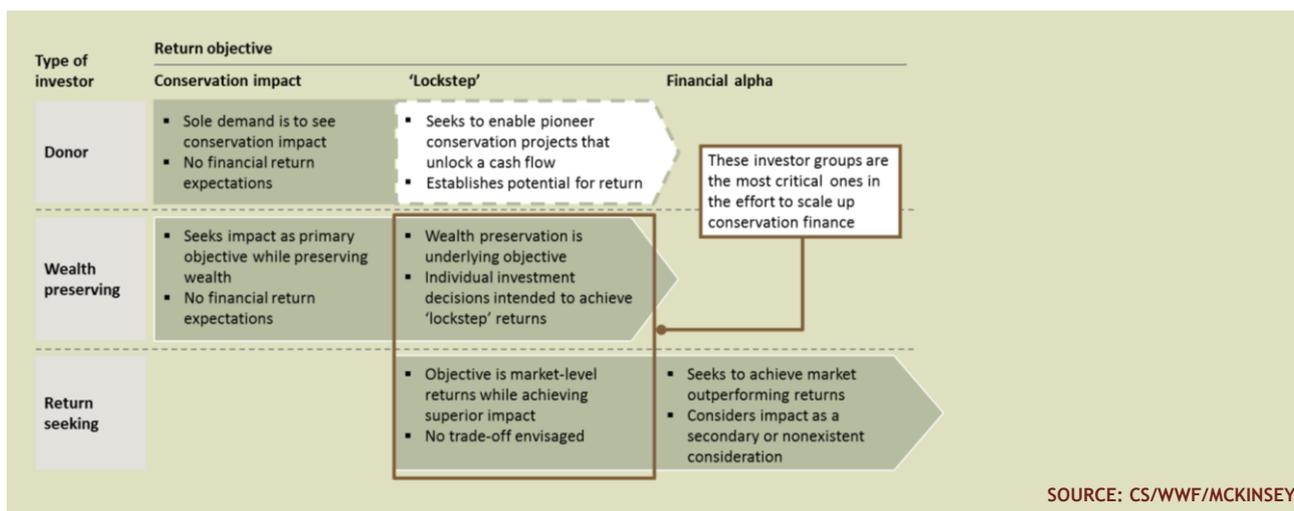


Figure 3: The future of forest conservation financing

While this research has highlighted a number of nuanced positions amongst investors, in short, investors are looking for investment with the following requirements:

- Full transparency of the investment product and its characteristics.

- An actual economic return and as such clear information on the expected return and risks associated with the investment, as well as the required ticket size and duration of the commitment.
- Assurance that the investments will have a conservation impact.

A key part of the challenge with current conservation financing is that investors do not understand the benefits associated with conservation, and these are difficult to define. Even when they are easily understood, these benefits may not necessarily have a monetary value. Where monetary benefits are available benefits are not locked into the project finance arrangements. Therefore, the challenges fall on both the project side and financing side of the equation. These challenges are ones which need to be addressed by multiple stakeholders, including:

- **Project developers (NGOs, private sector)** - A key challenge at the moment is that there are a myriad of different types of conservation projects operating at different scales globally. Additionally, within these projects: (i) the monetary and conservation benefits of such projects are not sufficiently well identified and standardized; (ii) that environmental benefits are - without regulatory intervention - often externalities for the investors involved; and (iii) the projects are not set up with the same focus on return/impact maximization and replication as are traditional business models. Project developers can assist in this process by developing projects with clear impact and where value can be measured. To this end, measurement is a critically important tool, and projects should engage - where possible - with approaches to verify or certify the impacts of their activities. It is also important to scale such projects; and
- **Financiers (asset and fund managers and private banks)** - should spend time developing wealth-preserving investment products, which aim to provide both safety and an inflation hedge. These products could represent a significant opportunity for the HNW/UHNW segments, as almost no such products are currently offered. Return-oriented products in conservation can be considered like any other alternatives in terms of their risk-return characteristics, albeit with a clear and certified double bottom line. Additionally, the underlying portfolio companies of conservation projects in which fund managers could invest would profit from further professionalization as a result of the competitive selection, due diligence and portfolio management processes applied in the same way as for traditional investments. Private banks and asset managers can make conservation part of their standard advisory service, much like the topics of philanthropy, impact investment more broadly and traditional alternatives are today.

### What can governments do to grow conservation and restoration finance?

To address some of the challenges noted above, multiple stakeholders need to be involved in developing solutions, including financiers, project developers and regulators. We see the role of government as one which can help facilitate the process of scaling up investment into conservation, using public finance to leverage greater private finance and also in creating the conditions for conservation finance to flow.

## Facilitating paradigm shifts to scale up investment

We think that there are three paradigm shifts which can help to accelerate the maturation of the conservation finance market. Each of these shifts will require the key market stakeholders, but governments can play a role in facilitating these processes to occur:

Moving from idiosyncratic and disaggregated early-stage testing efforts to an incubator approach that brings together business, conservation, and technical know-how and provides the necessary infrastructure to rapidly prototype and test promising new ideas with scale-up potential. This step could address the lack of commercial support for early-stage ideas. Setting up an incubator would provide an opportunity for key stakeholders interested in furthering this field - investors, NGOs, foundations, and other conservation finance actors - to bring their respective strengths to the table and collaborate in establishing a pipeline for the conservation finance market.

Moving from ad hoc attempts to scale proven projects towards a standardized and mainstream scaling approach, including - where necessary and available - risk mitigation levers. This approach would address the issue of high perceived risk through a multi-pronged risk mitigation strategy, reduce transaction costs through standardized processes, and enable the scaling of promising ideas through dedicated strategies. The implementation of this shift should be taken on by conservation-savvy investors who are familiar with rigorous investment approaches.

Moving from tested medium-scale project implementation to large-scale and established conservation finance products that are attractive to the mainstream investment market. This step would make conservation finance available to a much wider spectrum of investors. Mature projects and vehicles contribute to the growth of investor comfort with the field and allow other less mature projects to follow in their footsteps later on. The implementing drivers behind this shift would need to be large investors or financial institutions that have the capacity to originate deals at an institutional scale.

## Creating markets or regulatory frameworks which create economic value for conservation

A critically important role for Governments is facilitating the process and creating incentives for more consolidated project structures of scale. It is important that governments also create the regulatory conditions to allow tested project structures to be scaled up. For instance, this might mean by creating a regulatory framework securing the way that an environmental service is valued into law.

Private finance will only flow into forest conservation where the private sector can receive a financial return for such investments. Governments play a key role by creating regulatory conditions for such a return. This might be by introducing a price on and a cap on carbon emissions within a jurisdiction. By placing a cap on carbon emissions, then polluters would need to purchase abatement to come within the limits of that cap, thus creating a market for carbon abatement. Alternatively, polluters could simply be required to fund forest projects as the basis for displacing their own impacts, or the government could setup a fund to purchase abatement. For example, the Australian Government has set up an Emissions Reduction Fund which purchases abatement from projects, including land use projects, as a measure to contribute to reducing emissions in the country overall. Similar models could be set up internationally for

REDD+ and funded through international climate finance or more directly under bi-lateral arrangements, utilising the framework in the UN Paris Agreement on climate change.

### Leveraging public finance for increased private investment

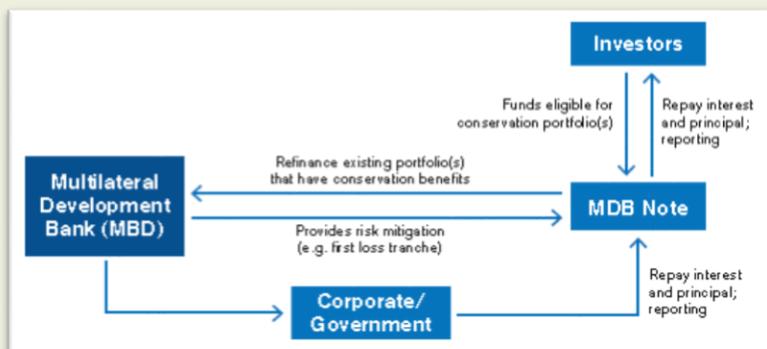
While this paper has focussed on incentivising greater private sector finance into conservation efforts, there remains a need for public sector support for conservation projects. In particular, public finance remains a critically important tool for leveraging increased private finance, including by risk-sharing investments into conservation with the private sector. There are myriad ways in which governments can utilise public finance mechanisms to attract greater private finance, including through concessional loans, through co-matching of equity investments and debt instruments such as bonds.

Below we provide a case study of how multi-lateral development bank project portfolio re-financing can be used as a method through which public finance can be used to raise private finance.

**Multilateral Development Banks (MDBs) are natural partners in conservation projects in light of many MDBs' mandates to support projects that promote sustainable development in target countries. This is relevant to businesses because development bank loan portfolios enable companies to implement development activities while benefitting from the high credit ratings of the lending institutions.**

(MDBs) such as the World Bank and development banks in the Americas, Europe, Asia and Africa\* have significant loan portfolios supporting an array of socially and environmentally beneficial initiatives, some of which fall within our definition of conservation finance. Many of these initiatives target conservation activities.\*\* While there are few loan portfolios that specifically support conservation activities, there are opportunities for collaborating with these institutions to gain access to additional cost-effective funding for conservation.

**Figure 4: MDB can effectively refinance a suitable portfolio. For example, an existing loan that was originated to improve ecological resilience by investing in sustainable coffee production methods could be part of a development bank loan portfolio and be refinanced in a more targeted manner**



#### Multilateral Development Banks loan portfolio key points

- There is an opportunity for a sizeable issuance, which can reduce borrowing costs and gain significant institutional investor interest.
- The structure is a new entity but backed by an existing portfolio of loans and potentially with a guarantee for a highly rated institution.
- Duration may be relatively long but the quality of partners may increase opportunities for issuing a note with a longer term.
- The risks are primarily linked to the underlying loan portfolio (i.e. the selection of loan that are included and the guarantor).

## Creating conditions for increased investment

As discussed earlier, a key role that governments can play is in setting the regulatory conditions to allow increased conservation finance to flow into projects. However, governments also play a role, more broadly, in ensuring that there are no impediments to conservation projects being established and run, and to minimise the risk factors which may put investors off investing into projects. This latter topic is one which is discussed in the APRRP Policy Paper by Baker & McKenzie, and so we do not discuss in detail in this paper.

There are of course limits to market based investment for conservation. The most important limitation is that often conservation-based revenue streams are considered less competitive or have no market value compared to competing market opportunities (e.g. the conversion of forests or grassland for agriculture or settlement), at least in the short-to-medium term. Further, there are complex socio-political constraints to the commercialization of ecosystem revenue mechanisms. The acquisition or long-term lease of environmental assets by external investors might, for example, restrict access to, or control of, the ecosystem by local people. Conserving ecosystems in this way can also be hindered when the local government denies commercial access to them, political instability is too high or the area in question is too remote for feasible access. Governments have an important role in balancing between the needs for increased market investment and the protection of local communities and economies that may be impacted by such increases.

## Conclusion

This paper has shown that there is strong demand for increased conservation finance. There remain substantial needs for increasing finance, particularly from market sources. While there is sufficient private capital which can be invested into conservation, there remains a dearth of incentives for the private sector to invest capital into conservation because currently it is not clear how such projects deliver economic return; in this context, governments can play a substantial role in creating value for conservation efforts. Additionally, there are problems in how conservation projects are structured and the financial models currently accessible to investors, which limit the ability of such finance flowing into these projects. In other words, there are problems on both the demand and supply side of the financing equation. While multiple stakeholders and market participants need to be involved in developing solutions to these bottlenecks to investment, we have shown that governments can play an important role in facilitating approaches to resolving such bottlenecks.

**Martijn Wilder AM**

Partner, Baker & McKenzie

+61 2 8922 5276

[martijn.wilder@bakermckenzie.com](mailto:martijn.wilder@bakermckenzie.com)



**Fabian Huwyler**

Vice President, Sustainability Affairs

Credit Suisse

[fabian.huwyler@credit-suisse.com](mailto:fabian.huwyler@credit-suisse.com)



The information contained in this report should not be relied on as legal or investment advice and should not be regarded as a substitute for detailed advice in individual cases. No responsibility for any loss occasioned to any person by acting or refraining from action as a result of material in this report is accepted by Baker & McKenzie. This may qualify as "Attorney Advertising" requiring notice in some jurisdictions. Prior results do not guarantee a similar outcome.

Baker & McKenzie International is a Swiss Verein with member law firms around the world. In accordance with the common terminology used in professional service organisations, reference to a "partner" means a person who is a partner, or equivalent, in such a law firm. Similarly, reference to an "office" means an office of any such law firm.

© Baker & McKenzie 2016. All rights reserved.

Baker & McKenzie, an Australian Partnership, is a member firm of Baker & McKenzie International, a Swiss Verein with member law firms around the world. In accordance with the common terminology used in professional service organisations, reference to a "partner" means a person who is a partner, or equivalent, in such a law firm. Similarly, reference to an "office" means an office of any such law firm.

© 2016 Baker & McKenzie. All rights reserved.

## 2. The role of law in incentivising, developing and managing forest conservation projects

---

**Baker & McKenzie**

Forests play an important role to ecosystems, economies and the communities of the Asia Pacific region. Rainforests in this region represent one-quarter of the world's land area, and house seven of 25 international biodiversity "hotspots". The forests are home to thousands of species of mammal, birds and flowering plants, including key endangered iconic species. They also provide livelihoods to millions of people living within them, and store millions of tonnes of carbon emissions, playing a critical role in preventing the most dangerous impacts of climate change.

While important for a number of environmental and social reasons, the forests of Asia Pacific are also disappearing at an alarming rate. For instance, Indonesia, the most heavily forested country in the region has, on some estimates, the fastest rate of deforestation in the world, driven largely by the conversion of forests to monocultures for agricultural or other purposes. This alarming figure is repeated elsewhere in the region too. Myanmar, for instance, lost an average of 546,000 hectares of forest each year between 2010-2015, according to the UN's Food and Agriculture Organization, ranking it as the third worst globally for rates of deforestation.

Responding to these dynamics, the international community and countries within the Asia Pacific region have sought to encourage and introduce regulatory responses to try and slow and prevent deforestation. These regulatory approaches include criminal responses to illegal deforestation or forest degradation on the one hand, to incentive schemes for forest conservation on the other. If these regulatory regimes were introduced and implemented effectively, they could have a profound impact on slowing deforestation. However, as we set out in this paper, in some cases underlying legal problems can impact the effectiveness of these laws and the ability of well-meaning governments to introduce them.

This paper explores the relationship between legal frameworks and governmental efforts to reduce deforestation and forest degradation in the Asia Pacific region. The paper will also look at ways in which the legal system can hamper such efforts and, in some cases, be the cause of deforestation. In light of these challenges, the paper outlines an approach that countries can take to critically examine their legal frameworks for forestry and introduce reforms, as required, to improve such legal frameworks. The paper is structured in two parts; the first looks at the ways in which law can play a role in preventing deforestation and forest degradation; the second part of the paper considers the way in which countries can strategically and systematically review their legal frameworks to try and improve their effectiveness in avoiding deforestation.

## The role of law in preventing deforestation and forest degradation

The enforcement and structure of legal frameworks for natural resource use and forestry play an important role in allowing governments to effectively halt or slow deforestation, or incentivise conservation. Well-designed legal frameworks can play an important role in slowing deforestation, and conversely, poorly constructed frameworks can have a negative impact on forests. In this section we look at some of the legal challenges which governments face in designing and implementing effective laws for avoiding deforestation.

### 1. Allocating rights to use forests and resolving disputes

One of the most important ways that legal systems impact the ability of government to manage forest resources is in respect to land and forest tenure. There are many dimensions of the regulation of forest land: there are rules creating rights to the land and the forest itself; about how to resolve disputes over such land; about the way such forest land can be used and how to document such land rights in a clear and centralised manner so that others can view such rights. When one or other of these areas of land regulation is not clear, there is a potential for conflict and uncertainty of the land underlying forest conservation efforts.

Land and forest tenure is often created based on the constitution of the country and forest-specific legislation (such as the relevant Forestry Act) and creates the conditions upon which individuals, communities, organisations and the government can access land. A key issue which many countries in Asia Pacific face is dealing with different "layers" of rights to land and forests. Determining who has rights to a piece of land is an historical exercise, and consequently claims over land can arise on the basis of different historical legal regimes that have operated in a country.

These land-claims can originate from traditional / customary legal systems, former colonial legal systems or even more recent state based legal frameworks. For instance, in Timor Leste, individuals and communities have claimed land on the basis of the legal frameworks of former Portuguese and Indonesian colonial administrators, or land rights afforded during the UN administration of the country. It can be very time consuming and challenging to determine how these layers of ownership overlap and which rights should take priority over other competing rights.

It is important that countries have clear rules governing how "competing" claims over land can be dealt with and a process by which land and forest resources can be shared. Without such mechanisms, conservation activities can be halted by conflicts over the underlying land resources. A system should be in place where disputes can be settled between multiple competing parties; this is particularly important with respect to indigenous people to ensure they are not dispossessed by any forest conservation efforts. Indigenous rights are often latent, and come to the fore through constitutional court determinations, as has been the case in Indonesia and Australia. It is important that any rules managing land claims take account of any latent indigenous land claims.

Also, once settled, it is critical to have a centralised system where such rights over land are documented definitively, so that other parties can see the boundaries of such land holdings. In

many countries land title records are not clearly defined or held by a central government source, and consequently rights to one parcel of land may be allocated to different parties from different areas of a government.

In addition to determining who owns the land, legal frameworks in a country will determine the way that forest land is classified and thus what uses are permitted on it. The law which governs land classification is very important to determining how easy or difficult it is to establish conservation projects, or to use land for conservation purposes. Where such laws are designed poorly, it can create disincentives for conserving forests; conversely such laws can create incentives to make it easier or more attractive to use forests in a sustainable way. Without effective legal frameworks for allocating, delineating and reporting on forest resources, and having in place a system to solve disputes over land, there are many challenges for a country's ability to properly protect forests.

## **2. Institutional arrangements to manage forests**

Legal frameworks determine the way that government institutions and officials are authorised to make decisions about forest land use. One of the key challenges facing legal frameworks in the countries of Asia Pacific (and elsewhere in the world) is that forest laws often do not create a coherent unified system for decision making about forest use.

One of the main reasons for this fragmentation in the administration of forest land is a legacy of history. That is, different laws have been created at different times, reflecting society's attitude towards forests historically. Some of the original forest laws in the region were, as with forest laws around the world, created for the purpose of exploiting forest resources, rather than protecting that resource. Over time as forest conservation has grown in importance, new legislation for environmental protection has been passed.

Additionally, more recently, many countries have also sought to introduce internationally developed forest conservation concepts into their legal frameworks. For instance, the recently agreed UN Paris Agreement on Climate Change includes within it provision for countries to utilise a mechanism for avoiding deforestation and forest degradation (REDD+) as one way to reduce emissions. Additionally, programs such as the European Union's Forest Law Enforcement, Governance and Trade (FLEGT), which aims to improve forest governance and promote trade in legally produced timber, is now being implemented in Indonesia, and being developed in Malaysia, Thailand, Vietnam, Laos and elsewhere in the world.

The effect of this in many countries, including those in the Asia Pacific region is that there are hundreds of regulations and norms governing forest land use, which may be promulgated or enforced by different departments, ministries and agencies at both national and subnational level. This might include ministries of forestry, environment, agriculture, finance or mining or their related agencies and bodies, special agencies of the heads of state or subnational governors or rules produced by provincial government leaders or village chiefs. These laws are sometimes complementary, but often they conflict in their underlying purposes and objectives. In this paper we refer to such conflicts across the national bureaucracy as "horizontal" conflicts, and those between national and subnational governments as "vertical" conflict.

Indonesia provides a good example of a country in which both horizontal and vertical decision making on forest conservation has sometimes been inconsistent leading to the detriment of efforts to protect forests. Indonesia's government is decentralised, and several horizontal ministries and subnational governments have some authority over land use. For example, district governments in Indonesia have had authority to dole out concessions for crops such as oil palm, but forestry itself is controlled largely by the national government. At a national level, the Ministry of Forestry and Environment is the main ministry responsible for forests, however ministries related to mining also can issue land use concessions over land that is not "forested". As most of the country is not captured in a centralised land registry, sometimes these national ministries issue conflicting land use concessions to the same land.

If governments are eager to develop better regulatory frameworks to prevent deforestation, then one key consideration they need to take account of is, the institution(s), both horizontally and vertically, currently responsible for regulating forests. If there are multiple institutions with multiple conflicting purposes, then it may be necessary to simplify such institutional frameworks.

### **3. Safeguarding conservation activities**

Safeguards refer to regulatory frameworks designed to protect economic, social and environmental features of a conservation activity. Safeguards are a key part of regulatory frameworks on conservation, to ensure that conservation efforts are not inadvertently disadvantaging local forest communities or causing some other unintended consequences. To ensure that efforts to avoid deforestation are carried out in a way that is equitable and achieves positive, social as well as environmental outcomes, it is important for governments to develop a clear regulatory framework for safeguarding forests.

Some countries already have laws in place which can be used for safeguarding conservation efforts. Therefore in introducing new policies on forest conservation, it is important to do a stocktake of existing laws to determine how they could be used to meet compliance obligations. For instance, the UN's rules on REDD+ create a set of safeguards to which countries must comply in order to receive international payments. However, many of these requirements would be covered by domestic laws in many countries in Asia Pacific. For example, the safeguards require protecting the full, prior and informed consent of local stakeholders prior to projects being established, which is a common principle in many legal systems.

Creating effective legal systems for safeguarding forest conservation will therefore involve assessing the extent to which the existing law protects certain environmental and social safeguards, and filling the gaps of such regimes as required.

### **4. Introducing international forest policy concepts into domestic jurisdictions**

There are a myriad of international policy frameworks which are designed to reduce forest destruction and degradation. There are a variety of market and financial mechanisms to incentivise heavily forested countries to introduce such policy frameworks into countries.

These policy frameworks address both the "demand" side and the "supply" side of deforestation. Programs such as REDD+ are designed to try and increase and protect the existing forest stock, and thus increase the "supply" of forests. Meanwhile programs such as FLEGT are designed to try and regulate demand drivers for forests, and ensure that demand is only driving growth in sustainable timber supplies. Additionally, countries have their own domestic regulatory frameworks on the demand-side (such as criminalisation of illegal deforestation) and the supply-side (such as legal regimes to promote forest conservation).

In order to introduce these international policy concepts, governments need to make changes to their domestic legal frameworks to accommodate such concepts. REDD+ is a good example of where legal systems play an important role in translating international concepts domestically. To be implemented in a host country, REDD+ requires that countries create a process by which the benefits of avoiding deforestation can be measured - this might include by measuring the greenhouse gases stored in forests, but also by other non-carbon benefits. Many countries in Asia Pacific do not have concepts within their legal system at present to value these dimensions of forests. Therefore, for REDD+ to be introduced into a country, that country will need to consider creating a law on - for instance - carbon rights. Legal reform may also be a required part of funding commitments by international donors, as was the case for Indonesia under the Letter of Intent from the Government of Norway.

In some instances, countries may already have legal concepts in place which could be used at least in part. For example, the FLEGT program calls on countries to criminalise illegal deforestation. Some countries may already have laws which are supposed to address this issue, but the introduction of an international policy concept gives such countries an opportunity to reassess the effectiveness of such laws.

Therefore in order to effectively introduce these international policy concepts into domestic jurisdictions, countries must consider how they will operationalise them through their legal frameworks.

## **5. Legal enforcement**

While it is important to design effective legal frameworks for forest conservation, it is even more important to ensure that such regimes are given the human and capability resourcing to actually implement the law. To this end, creating legal frameworks which are too complex can be damaging as it makes it more challenging for regulators to determine which laws to pursue. Countries globally - such as Brazil - which have put considerable thought and resources into enforcement approaches, have had improved environmental outcomes. This is something that policymakers should consider in reviewing or reforming their legal frameworks.

### **Process for carrying out regulatory reform for reducing deforestation**

As discussed in the previous section, legal frameworks can have a major impact on the ability of the government to stem deforestation and forest degradation. The complexity of existing legal frameworks can hamper the ability of governments to slow deforestation; and a key matter

which policymakers ought to consider in introducing new laws designed to prevent deforestation, is ensuring they are introduced effectively within the country's legal system.

### Gap analysis of existing legal frameworks

1

- ▶ Detailed and expansive gap analysis of country's relevant legal and policy frameworks impacting forests.
- ▶ Purpose is to understand exactly what reforms need to be made and under what legal regimes to achieve compliance with international best practice.
- ▶ Considers: constitutional law, forest law, land law, agriculture law, climate/existing REDD+ laws, relevant cases (e.g. to do with indigenous land), climate specific policies and engagement with international mechanisms.

### Assessing "vehicles" for legal reform

2

- ▶ Detailed legal and political analysis of legal instruments through which reforms can be made. (e.g. should reforms be introduced through a new act of parliament, or through executive order?)
- ▶ In some cases not necessary to introduce new law, but sufficient to bolster existing legal frameworks or use "work-arounds".
- ▶ This analysis considers: constitutional and administrative law governing the creation of laws/regulations and political context.

### Recommend reform road map

3

- ▶ Marries the analysis of the exact reforms that need to be made for a conservation framework with the possible vehicles through which such reforms can be introduced.
- ▶ Sets out a legally sound and politically realistic approach to introducing reforms into a jurisdiction's legal system.
- ▶ The recommendations are structured on a scale of "most legally secure and most time consuming" to "least legally secure and least time consuming".

While carrying out legal reform which will aid avoiding deforestation can appear to be a complex problem, there is a three stage process which policymakers can follow for determining what legal reform is necessary and the best approach effecting such reform. The first step is a legal gap analysis of existing legal frameworks, followed by an analysis of what legal instruments or vehicles can be used to achieve this reform and finally developing a road-map for reform. This approach is unique in that it can develop reform recommendations that are both legally secure and politically realistic, and which can be implemented in a compressed time-frame.

#### 1. What legal reforms are required? Deep dive gap analysis of existing legal frameworks

Effective implementation of national legal frameworks for avoiding deforestation will need to reflect context-specific, political economy and policy drivers of deforestation and forest degradation (including those sitting outside forest law and policy). Without considering these

issues, long term forest governance and law enforcement will not be effective. Accordingly, we recommend that policymakers:

- evaluate existing legal frameworks (including constitutions and laws on finance, property (including indigenous land rights) and other land-use laws and policies), institutions and political economy challenges that result in deforestation, illegality, and corruption that create a barrier to the effective implementation of the law;
- identify nationally appropriate tools and guidance to improve existing legal frameworks, governance, transparency and law enforcement, drawing upon international models; and
- investigate how finance tools could be used in the context of the local legal regimes to ensure they are legally valid and that finance flows in a manner that supports both sustainable and equitable development.

## **2. How to implement such reforms: Strategic legal approaches to reform**

Understanding exactly what legal reforms need to be made is only part of the process in developing an implementation roadmap. Equally important is to understand the legal vehicles through which such laws can be introduced. To this end, policymakers should also examine the legal instruments and legal approaches which can be used for legal reform in each of the focus jurisdictions. For instance, if a country were seeking to introduce REDD+, they may not necessarily need to do so by introducing a law passed by the legislature. They may, instead, be able to build a REDD+ framework by introducing the key elements of REDD+ a regulation or some other authority of the executive branch.

It is important to consider this issue, as different legal instruments have different powers and each vary in relation to how they are introduced. A law passed by parliament, for instance, is usually a very powerful legal instrument. In this sense, laws can often introduce reforms across a country's government, and this way is often the most legally secure and powerful way to introduce reform. Against this is the fact that laws of parliament are also the most time consuming and politically complicated to pass. Therefore, if a jurisdiction is looking to pass a REDD+ law quickly, this may not be the best approach. On the other hand, regulations of the executive are much quicker, but they may not be able to affect change across the government and in areas where reform is most needed.

Another approach is to use a "work-around". Where a particular regulatory issue is too complex, or where quick results are required, then legal work-arounds can be used instead. One good example of this with respect to land rights comes from Australian law; specifically, Indigenous Land Use Agreements (ILUAs) model. ILUAs are legal agreements between indigenous land claimants, private entities and the government over specific areas of land over which there are competing land claims. ILUAs can be used to set out how competing land rights are dealt with and what benefits and obligations each party has. This model could have some application in overcoming some of the challenges in Asia Pacific countries.

The legal instruments available in each jurisdiction sit on a spectrum between "most legally secure and most time consuming to introduce" at one end - this might include laws of parliament

- and "least legally secure and least time consuming to introduce" at the other - which would likely include contractual "work-arounds". Plotting the legal instruments in this way allows host countries to match up the reform they want to achieve with the practical and political realities of the day.

### 3. Development of a locally-led domestic legal implementation road map

The analysis described in steps 1 and 2 will inform the development of a legal implementation and reform road map to create a pragmatic, transparent and effective legal and policy framework for forest conservation. This road map can be used as a way of building community and government buy-in to the process of reform. It also should set out a clear series of steps and a timeline by which reform will be made.

#### Next steps

This paper has set out at a high level, some of the factors which policymakers in the Asia Pacific region should consider in order to develop effective legal frameworks for forest-conservation and REDD+. While complex, there is substantial benefit in carrying out a process of this nature. Effective legal frameworks allow governments to control the drivers of deforestation. They can also help to attract international financing, as private and public sector investors look to legal certainty as a key determinant for investment into forest conservation. In this way, legal frameworks can be a useful way of enabling the government to achieve sustainable development at least cost.

#### **Martijn Wilder AM**

Partner, Baker & McKenzie

+61 2 8922 5276

[martijn.wilder@bakermckenzie.com](mailto:martijn.wilder@bakermckenzie.com)

#### **Arjuna Dibley**

Associate, Baker & McKenzie

+61 3 9617 4432

[arjuna.dibley@bakermckenzie.com](mailto:arjuna.dibley@bakermckenzie.com)

The logo for Baker & McKenzie, featuring the company name in white serif font on a dark red rectangular background. The background is accented with a yellow-to-green gradient bar above and below the red box.

**BAKER & MCKENZIE**

The information contained in this report should not be relied on as legal or investment advice and should not be regarded as a substitute for detailed advice in individual cases. No responsibility for any loss occasioned to any person by acting or refraining from action as a result of material in this report is accepted by Baker & McKenzie. This may qualify as "Attorney Advertising" requiring notice in some jurisdictions. Prior results do not guarantee a similar outcome.

Baker & McKenzie International is a Swiss Verein with member law firms around the world. In accordance with the common terminology used in professional service organisations, reference to a "partner" means a person who is a partner, or equivalent, in such a law firm. Similarly, reference to an "office" means an office of any such law firm.

© Baker & McKenzie 2016. All rights reserved.

# 3. The business case for landscape level conservation and restoration

---

Ernst and Young

---

“The world’s forests are essential to realizing our shared vision for people and the planet, they are central to our future prosperity and the stability of the global climate.” UN Secretary-General Ban Ki-moon, 2016

With the global population increasing and the progression of developing economies, the pressure on the world’s natural capital is putting an ever-increasing strain on the environment. In particular, the world’s forests are being cleared at an alarming rate to make way for other land use. The resulting impact on atmospheric carbon dioxide levels is significant.

Asia Pacific is the fastest growing economic region in the world. Asia is home to almost 4.5 billion people or 60% of the global population, but only 30% of the world’s land area<sup>31</sup>. With high population growth expected to continue for some time, coupled with rapid economic development, the challenge of protecting the remaining natural resources while meeting future demand for food, fuel and fibre is immense. Unsustainable growth, increasing population, increased consumption and urbanisation will test the region’s potential for sustainable development.

Forests, and the ecosystems they form a part of, are vital for providing food, water and timber products, as well as playing a critical role in stabilising climate and sustaining biodiversity. Over one billion people in the world depend on forests for their livelihoods<sup>32</sup>, which will mean that any activities for forest conservation must also consider the value of social and community impacts.

Investment in the conservation and restoration of forests provides a workable solution to realise both climate and sustainable development goals. Given the scale of the challenge and of the opportunity, which is well beyond the means of public funding, greater levels of financing will be needed from the private sector. Attracting the necessary investment in the Asia Pacific region will require a compelling business case, with a response to restoration and conservation

---

<sup>31</sup> <http://worldpopulationreview.com/continents/asia-population/>

<sup>32</sup> World Resources Institute, 2016

needs that provides pragmatic, workable and sustainable solutions. The business case must be clear and well understood, and the approach should be practical and structured to deliver the maximum impact on the ground.

### The potential for landscape conservation and restoration

Globally, it is estimated that 17.4 percent of anthropogenic greenhouse gas emissions are derived from the forestry sector, including deforestation and degradation of peatland<sup>33</sup>. Over half of global emissions from deforestation, forest degradation and land use change come from Asia. The potential contribution of the Asia-Pacific region to reduce global greenhouse gas emissions is considerable.

While net forest loss across the Asia-Pacific region has been reversed since 2000, Southeast Asia, containing the world's third largest area of tropical forest, is experiencing the highest deforestation rates in the world, with 3.8 million hectares lost between 2010 and 2015<sup>34</sup>. Forestry and other land-use change activities account for around 75% of all of Southeast Asia's emissions, presenting a significant opportunity to avoid hundreds of millions of tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) per year<sup>35</sup>. In Indonesia, deforestation rates have been estimated to be over a million hectares per year, with 85% of the country's greenhouse gas emissions generated from land use activities<sup>36</sup>, despite activities from some companies to end unsustainable practices. Deforestation and forest degradation is estimated to be responsible for 1.1GtCO<sub>2</sub>e, while emissions from peatlands are generating over 770MtCO<sub>2</sub>e per year<sup>37</sup>.

The scale of action required and the potential opportunities that can be unlocked will require a portfolio of funding sources, including private sector investment. Private sector actors have the chance to become part of the solution and create lasting business value from a range of benefits that can be realised through investment in landscape conservation and restoration activities.

### A simplistic cost benefit analysis

Analysing the value or the return on investment of forest conservation is complex and variable. The costs involved will vary tremendously from one location to the next. The costs associated with implementing forestry restoration projects can be broken down into three categories:

- Implementation costs: investments in land, labour, and materials including any expense directly related to the establishment and operation of a project
- Transaction costs: including cost of monitoring, reporting and verification

---

<sup>33</sup> Climate change mitigation (Food and Agriculture Organization of the United Nations, 2010)

<sup>34</sup> FAO, Forest landscape restoration for Asia-Pacific forests, 2016

<sup>35</sup> Asian Development Bank, National REDD+ Strategies in Asia and the Pacific, 2010

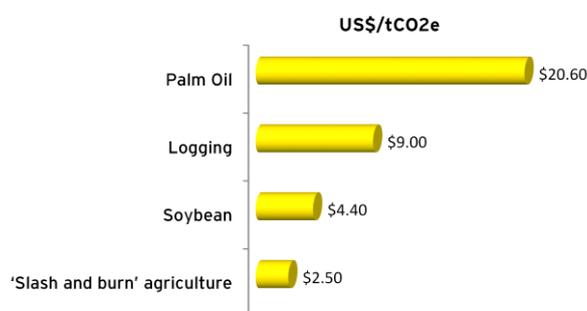
<sup>36</sup> Indonesian National Council on Climate Change, 2010

<sup>37</sup> Dewan Nasional Perubahan Iklim, Indonesia's greenhouse gas abatement cost curve, Indonesia, 2010

- Opportunity costs: the value of the tangible goods and services that were foregone to make restoration possible (e.g. palm oil, paper, timber products).

The economic viability of a conservation project in the Asia Pacific region is heavily dependent on the opportunity cost, especially given the increase in competing interests for forest land and related resource use. Palm oil is a key driver for deforestation in Indonesia and Malaysia, the largest two exporters of crude palm oil (CPO) in the world, with Borneo and Sumatra providing the ideal climate for oil palm plantations. Almost 90% of oil palm plantations in Kalimantan from 1990-2010 came at the expense of forest cover<sup>38</sup>. This means that prices paid to service providers for emission reductions will need to be substantial enough to offset competing opportunities.

Palm oil plantations in Indonesia are estimated to cover over eight million hectares and in 2015 produced 32.5 million tonnes of CPO<sup>39</sup>. This equates to an average yield of 4 tonnes per hectare, which compares closely to other data sources<sup>40</sup>. Although CPO prices have fallen as low as US\$483 per tonne (monthly average) in September 2015, they have generally fluctuated over US\$600 per tonne over the last five years, with prices reaching as high as US\$1250 per tonne in February 2011. Assuming a cost of production for CPO of US\$400 per hectare<sup>41</sup>, the rate of return per hectare at US\$600/tonne CPO would be US\$2,000 per annum. Other sources state figures as high as US\$30,000 per hectare, although this analysis likely uses much higher yield and CPO pricing assumptions<sup>42</sup>.



**Figure 30 Opportunity costs for alternative land use resources, UNEP 2014**

Estimates for forest carbon stocks are also highly variable. Using default values from the United Nation's Intergovernmental Panel on Climate Change (IPCC) for estimating forest carbon, preserving 10,000 hectares of forest would avoid almost five million tonnes of carbon dioxide

<sup>38</sup> Carlson, K.M., et al. 2013. "Carbon Emissions from Forest Conversion by Kalimantan Oil Palm Plantations", Nature Climate Change, Nature Publishing Group

<sup>39</sup> Indonesian Ministry of Agriculture, 2016

<sup>40</sup> Malaysia Palm Oil Board, 2012

<sup>41</sup> ERE Consulting Group Sdn Bhd, 2012

<sup>42</sup> World Agroforestry Centre, 2010

emissions over 30 years, compared to converting the concession to palm oil plantation<sup>43</sup>. This equates to an average of over 16 tCO<sub>2</sub>e per hectare per year, requiring a carbon price of US\$120/tCO<sub>2</sub>e just to compete with the opportunity costs of forgone palm oil.

Other sources using more specific data on carbon stocks estimate much lower carbon prices required to offset opportunity costs. A pilot project initiated by the provincial government of West Papua and Carbon Strategic International (CSI, Australia) covering an area of eight million hectares found the average carbon absorption to be between 300-350 tonnes per hectare<sup>44</sup>, which would require around US\$6/tCO<sub>2</sub>e to overcome opportunity costs. Indonesia's National Council on Climate Change estimates puts opportunity costs for avoiding forest conversion into estate crops or timber plantations at around 30 US\$/ tCO<sub>2</sub>e<sup>45</sup>. The United Nations Environment Programme (UNEP) provides opportunity cost estimates for a number of alternative resources, as presented in the figure below<sup>49</sup>.

In the case of peatlands, while the opportunity costs of not planting palm oil are estimated to be higher (US\$4,265/hectare), the emissions avoided by protecting the forests are also higher. In this case, a carbon price of US\$4.19/tonne would be sufficient to offset opportunity costs<sup>43</sup>.

Each forest landscape is unique and will require its own conservation or restoration design in order to maximise the value of any investment. Using a more holistic approach to land use planning and strategy could significantly reduce opportunity costs. For example, if alternative plantations can be established on degraded or deforested areas, the opportunity costs then represent only forgone revenue from one-time timber extraction for the initial land clearing and possibly some additional input costs or marginally lower yields.

By employing a landscape approach, which aims to effectively reconcile the competition and interdependencies for natural resources and ecosystem services among sectors and stakeholders, the outcomes are more sustainable, inclusive and effective at scale. Whole landscapes are restored, not just individual sites, so that trade-offs among conflicting interests can be made and minimised within a wider context. The result is an increase in the overall productivity of land use through optimisation.

### More than just carbon

## More than 1 billion people depend on forests for their livelihoods<sup>46</sup>.

The figures presented above demonstrate that the costs associated with conservation of forests under carbon financing initiatives will vary depending on the economic value of alternative land

---

<sup>43</sup> Rhett A. Butler, Lian Pin Koh & Jaboury Ghazoul, REDD in the red: palm oil could undermine carbon payment schemes, Wiley Periodicals, Inc. Switzerland, 2009

<sup>44</sup> REDD-monitor.org

<sup>45</sup> Dewan Nasional Perubahan Iklim, Indonesia's greenhouse gas abatement cost curve, Indonesia, 2010

<sup>46</sup> World Resources Institute, 2016

uses and the carbon content and rate of carbon sequestration of the forest being preserved. With a high risk and long-term return profile, making the case for forest conservation in financial terms based on carbon pricing can be difficult. However, if the full valuation of benefits is accounted for in decision-making, economic benefits of conserving forests are enormous.

**The benefits provided by tropical forests are estimated at US\$ 6,120-16,362 per hectare per year if environmental services are appropriately valued<sup>47</sup>.**

The success of a conservation or restoration activity is likely to be limited if it focuses at just a forest plot or farm level, but could be far more influential if it is linked to a larger landscape that includes multiple land uses and interests. A report by the International Union of Forest Research Organizations concludes that if forest conservation is to succeed, “related interventions need to consider wider dynamics outside forests and consider the broader landscape. An integrated landscape approach can better embrace both conservation and development objectives, and increase synergies among multiple local, regional and global societal objectives”<sup>48</sup>.

By estimating the total economic value of forests as a resource, or the total value people derive from the resource compared to not having it, conservation of forests can become economically competitive with oil palm plantations or other competing land uses.

#### Non-carbon benefits of forest conservation<sup>49</sup>

Water-related ecosystem services	When rainwater flows into streams and rivers, forest-covered areas help keep water pure as the porous soils filter water and tree roots stabilise soil, reducing erosion. The stabilisation of soils helps prevent sediment accumulating in rivers and other watercourses.
Provisioning services	Forests are directly relevant to the socio-economic development of rural communities. Sustainable felling of selected tree species can provide important material for construction or charcoal production/firewood. They also provide non-timber products, such as medicinal plants, edible fungi, fruits, nuts, seeds, oils, fibres, ornamentals and resins.
Biodiversity services	Forests provide habitats for many unique types of plants and animals, some of which are now endangered. Many people value the existence of these species and are willing to pay for their survival.

<sup>47</sup> The Economics of Ecosystems and Biodiversity, TEEB Interim Report, 2008

<sup>48</sup> International Union of Forest Research Organizations (IUFRO), 2012, Understanding Relationships between Biodiversity, Carbon, Forests and People: The Key to Achieving REDD+ Objectives.

<sup>49</sup> UNEP 2014, BUILDING NATURAL CAPITAL: HOW REDD+ CAN SUPPORT A GREEN ECONOMY

## Non-carbon benefits of forest conservation<sup>49</sup>

	Seed dispersal by wild animals is essential for maintaining the full diversity of wild populations of plants, and thereby the health of ecosystems. The pollination service provided by insects, birds and other forest species is worth billions of dollars annually to farmers
Forest tourism cultural services	Forest protected areas are visited annually by millions of people. These visitors help to redistribute wealth from urban areas to forests. The economic multipliers for tourism can be relatively high and have a positive effect on the incomes of the poorest households.

In particular, the link between forests and agriculture is critical. Poor land and water quality are known to be one of the leading causes of decreasing agricultural productivity in Asia in recent years due to poor land management<sup>50</sup>. Agriculture is vital to the livelihoods of a large portion of the Asian population, and declining productivity leads to lower incomes of those who depend on farms and further entrenches poverty.

## Progressing the 2030 Agenda for Sustainable Development

### Plan of action for people, planet and prosperity

In September 2015, the United Nations General Assembly adopted the 2030 Sustainable Development Agenda, with its 17 Sustainable Development Goals (SDGs), universally applicable to all nations. UN Member States have recognised that achieving the SDGs will require a shift away from a single-sector, siloed approach. The SDGs are indivisible and require implementation in an integrated manner. An integrated landscape management approach offers an action-oriented framework to simultaneously achieve multiple SDGs and associated targets.

Sustainable land use is inextricably linked to ending hunger (goal 2), climate action (goal 13) and life on land (goal 15). By employing a landscape approach recognising the inherent interconnectedness of human and natural systems and the resources that underpin them, other goals can be progressed, including ending poverty (goal 1), clean water and sanitation (goal 6), and responsible consumption and production (goal 12).

Safeguarding forests is essential for sustainable management of global freshwater resources and avoiding water shortages, according to United Nations officials and forest experts. Three-quarters of the freshwater that people use every day, comes from forested catchment areas. The protection and restoration of forest watersheds and catchments is likely a cost-effective alternative to new infrastructure development for water purification.

---

<sup>50</sup> Asian Development Bank, 2015

Around 1.6 billion people worldwide depend on forests for their basic needs of food, medicine, fuel, energy and income. The environmental services that forests offer, in terms of improving the quality of air, water and climate, are global goods that benefit all. By recognising the close inter-linkages between water systems and forest ecosystems in particular, forest resources become essential for jobs and livelihoods and are important for all seventeen goals.

---

*“Protecting our forests protects the fresh water we need to survive.”* René Castro Salazar, Assistant Director-General, Forestry Department, of the UN Food and Agriculture Organization (FAO)

### **Risk and reputation**

Increasing public pressure over supply chain impacts has seen a number of large corporations adopting policies to ensure no deforestation can be attributed to their supply chains. A number of companies and supply chain initiatives are aiming for zero deforestation in supply chains for commodities such as palm oil, paper and pulp, soy and timber.

Failure to act on deforestation is seen as a significant reputational risk that can seriously damage a company’s brand, whereas actively supporting conservation efforts is known to improve company reputation. Companies and NGOs are working together to develop standards and certification processes through organisations like the Forest Stewardship Council and the Roundtable on Sustainable Palm Oil. Other larger organisations working on a large scale with specific commodities are working directly with suppliers to ensure their products are traceable and comply with sustainability standards.

Increased demand for sustainably sourced products is flowing through to investors. Financial institutions can be exposed to significant risks through lending and investment practices that drive deforestation. These risks, including legal, marketing and regulatory risks, can potentially become material if they affect the costs or revenues of the organisation. While financial service providers have traditionally supported low-risk, high return plantation agriculture, investors are increasingly turning to sustainable land-use models in order to meet demands for more ethical investments. Environmental and social standards are being integrated into risk and investment policies and a number of international banks are introducing sustainable finance instruments.

### **Barriers to investment and implementation**

Employing an integrated approach to landscape management is complex. There are numerous different stakeholder groups with different levels of understanding, conflicting priorities and varying levels of influence. By its very nature, an integrated approach will inevitably result in trade-offs - the key is how compensation can be determined fairly and directed to the right people.

Accurately forecasting the magnitude of the impacts can be challenging, although there are a number of ecosystem service modelling tools available which can help predict outcomes of various scenarios. Identifying which stakeholder groups will be impacted and accurately estimating the value of the impact, whether positive or negative, is an involved process. The variety of ecosystem goods and services resulting from conservation actions benefit local, regional and global levels. Revealed preference or state-preference methods can be employed to monetise benefits for each impacted stakeholder.

A number of legal, regulatory and geopolitical barriers must be overcome for an integrated approach to be successful and sustainable in the long term. Inappropriate concession systems, concerns over national sovereignty and land rights, the establishment of appropriate deforestation baselines and the potential for system “leakage” (where deforestation is simply transferred to another location) are all areas that require bilateral support.

In particular, land tenure is a fundamental issue in forest conservation. Lack of clarity around land status and legal ownership of land can lead to contract disputes, conflict with local communities, illegal logging and other unsustainable outcomes. Socially responsible conservation activities must involve full and effective participation of stakeholders following the guidelines of ‘free prior and informed consent’ (FPIC), the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use. Ensuring transparency over who has the right to participate in the decision making process, who has tenure rights over forests and ultimately who receives payments is critical to the legitimacy of conservation projects.

## Recommendations

Managing and preventing future forest loss, while considering the needs of a rapidly increasing human population, will be one of the greatest environmental challenges of the next few decades. The size of the challenge, and of the opportunity, is beyond the means of public financing and must engage private investment to be successful. Public policy makers have a critical role to play in the mobilisation of private financial resources for landscape level conservation.

The governance of property rights and land tenure must be improved in order to reduce investment risk and avoid conflict with local communities. In many developing nations, local communities lack secure rights to their lands, which are neither titled nor officially mapped. Land-use plans need to take customary rights into consideration and local communities need to be engaged before land is allocated to conservation initiatives.

While carbon price signals could certainly be strengthened, the major weakness in valuing ecosystems and ecosystem services provided by forests is the lack of consideration of non-carbon benefits. Without establishing a price signal for ecosystem services such as watershed conservation and biodiversity values, the total economic value of forests is not being factored into investment decisions. This may come in the form of concessional finance for sustainable land use or direct payments for biodiversity and watershed services. In order to set a level

playing field, there is also a need to consider market distortions that encourage deforestation, such as subsidies on palm oil and timber, and undervaluation of property rights for plantations.

Public-private partnerships will play a fundamental role in mobilising capital for investment in conservation. Investors will only be attracted to landscape conservation if the risk can be reduced to an acceptable level. Public funding should be directed to provide seed money to catalyse private sector investment. Public institutions, such as development banks, could help encourage conservation investment by engaging in the design of guarantees or other risk mitigation mechanisms.

Promotion of certification systems for commodities and secondary products will also assist in building public support for sustainably sourced products, increasing pressure for private sector investment in sustainable land use. Certification should involve independent, third party verification to ensure compliance with sustainable supply chain requirements.

An improved understanding of land potential is critical to guiding a more holistic approach to land use to ensure the most value can be extracted and productivity can be maximised. Supporting further research and information gathering, as well as avenues for sharing this understanding, will ensure that forest conservation is sustainable and provides the broad range of benefits expected by stakeholders.

Using a landscape approach is more likely to lead to sustainable conservation in the long term by addressing trade-offs and synergies among stakeholders and between different parts of the landscape by building collaborative relationships. Table 1 provides a summary of the recommended policy measures that should be pursued in order to incentivise greater private sector investment in landscape conservation in the Asia Pacific region. Some of these policy measures are also being considered in pilot projects or have been examined in more detail in papers prepared by other Private Sector Roundtable members.

Prioritising the establishment of examples of models of effective collaboration and landscape governance, together with the successful application of ecosystem service modelling tools will provide more solid evidence of the potential for landscape conservation. Further research and collation of existing examples of collaboration and modelling within the Asia Pacific region, followed by the design and implementation of one or more pilot projects could provide the basis to develop core principals and broad models that could then be applied more widely in a variety of forest landscapes.

**Table 1 Key policy measures recommended for incentivising private investment in landscape scale conservation**

Key policy measures	
Governance	▶ Create clear and stable regulatory frameworks by encouraging governments to clarify land tenure and improve land-use governance, regulations including safeguards and economic planning policies.

Key policy measures	
	<ul style="list-style-type: none"> <li>▶ Stronger law enforcement for illegal deforestation activities.</li> </ul>
Collaboration	<ul style="list-style-type: none"> <li>▶ Establish inclusive, informed and participatory decision-making processes where trade-offs between development and conservation objectives are understood.</li> <li>▶ Ensure recognition of indigenous and customary tenure rights</li> </ul>
Information policies	<ul style="list-style-type: none"> <li>▶ Ensure decision makers and the general public are informed of the multiple values of forests.</li> <li>▶ Support eco-certification, public disclosure requirements, marketing and branding and education campaigns</li> <li>▶ Support further research to quantify the costs of inaction and the values of forest benefits.</li> <li>▶ Foster technical capacity and knowledge of sustainability concepts among finance, government and land use sector professionals</li> </ul>
Financing	<ul style="list-style-type: none"> <li>▶ Level the playing field for responsible investors and harness the transformative power of markets through pricing, fiscal and trade policies, trading permits, taxes and subsidy reform.</li> <li>▶ In addition to carbon sequestration, progress markets for other ecosystem services</li> <li>▶ Increase options for funding beyond carbon markets, including private investment in other ecosystem services, possibly through, concessional finance, tax concessions or voluntary offsets</li> <li>▶ Support the establishment of innovative financial products to connect the supply of capital with the demand</li> <li>▶ Support longer-term, more flexible credit tailored to needs of conservation requirements while managing investor risks</li> </ul>

EY | Assurance | Tax | Transactions | Advisory

## About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organisation and may refer to one or more of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organisation, please visit [ey.com](http://ey.com).

© 2016 Ernst & Young, Australia  
All Rights Reserved.

Liability limited by a scheme approved under Professional Standards Legislation.

[ey.com](http://ey.com)



# 4. The business case for landscape level conservation and restoration: New Forests' experience investing in landscapes in Southeast Asia

---

## New Forests

Forestry investment today must balance growing demand for timber products with rising imperatives for sustainable development, including the conservation and restoration of the world's forests. This means investors in the forestry sector today recognize that a new model of investment is needed. Timber harvest in natural forests is declining in many areas as key timber resources have been depleted. The days of gaining access to low-cost land by conversion of natural forest to establish timber plantations are also over. At the same time, it is now evident that the decarbonisation of the economy will require more renewable bio-based materials, energy, and fuels. In response, investors are beginning to adopt a landscape management approach to forestry investment, which includes intensive plantation management to drive timber production as well as conservation and restoration activities to meet environmental objectives.

Over the past several years the concept of regulating and managing land use at a landscape scale has gained recognition as a promising framework to tackle pressing environmental and social problems - such as deforestation, climate change, natural resource scarcity, food security, and economic development.<sup>51</sup> However, the challenge now is to begin to move from theory to practice and to prove the financial viability of such an investment approach. In doing so, investors encounter a range of questions and challenges in implementation. For example, how do we reach agreement among stakeholders, communities, and investors on an appropriate allocation of land use? How do we share the benefits and compensate for costs? What land is suitable for production, and what is able to be restored? And how do we create financial value for the conservation and restoration activities that need to be part of a landscape management approach?

This paper looks at how a landscape approach, including intensive timber plantation production alongside forest conservation and restoration, can make commercial sense to investors in the forestry sector. While focusing on plantation forestry, the themes and issues discussed here

---

<sup>51</sup> See earlier policy paper, Ernst and Young, 2016. The Business Case for landscape level conservation. Policy Paper—Asia Pacific Rainforest Recovery Plan.

build upon the cross-sectoral view presented in the preceding briefing note by EY ‘The business case for landscape level conservation and restoration’. In general many of the issues pertinent to a landscape approach are broadly applicable across other types of large-scale land concessions, licences, and permits in Southeast Asia, including those for agriculture, production forestry, and ecosystem restoration. This paper draws on New Forests’ experience in Southeast Asian plantation investment to consider approaches that can reduce or eliminate conflicts, establish more collaborative models, and still generate acceptable investment returns.

### **Landscape Approaches and Forestry Investment**

A landscape approach requires increased cooperation among stakeholder groups to agree on a sustainable land use plan that meets current and future needs for the conservation of ecosystems services like clean water, carbon storage, and biodiversity conservation as well as socioeconomic benefits and local employment. Historically, commodity production and forest conservation have been pitted against one another, but fundamental to a landscape approach is the recognition that multiple land uses can co-exist and be able to meet the shared objectives of multiple stakeholders. Such landscape approaches can require extensive stakeholder engagement and supportive market mechanisms and often benefit from technical support, new technology, and productivity enhancements.

While investors focus on generating financial returns, sound investment management also includes an emphasis on managing risk. In fact, reducing the risk of an investment should also reduce the required rate of return and can make an investment more valuable. This can be a key driver for most investors to adopt progressive approaches to stakeholder engagement. Therefore negotiated agreements that encompass the interests of all stakeholders, communities, and investors should provide a more stable investment environment and more likelihood of achieving acceptable returns on investment.

For the purposes of this briefing paper, we use the term landscape approach to mean managing landscapes in an integrated manner that incorporates multiple land uses and accounts for the needs of multiple stakeholders to produce positive social and environmental outcomes. This definition can be applied at multiple levels from international to sub-national and from regional, e.g. watershed level, to local, e.g. within forestry concessions. It also accommodates commonly accepted principles of a landscape approach, such as consensus-based decision making, multi-functionality, adaptive management, participatory processes, and the presence of multiple scales. To understand the business case for a landscape approach in forestry investment, we first describe what this means in an operational context and then evaluate the barriers and potential benefits of adopting such an approach.

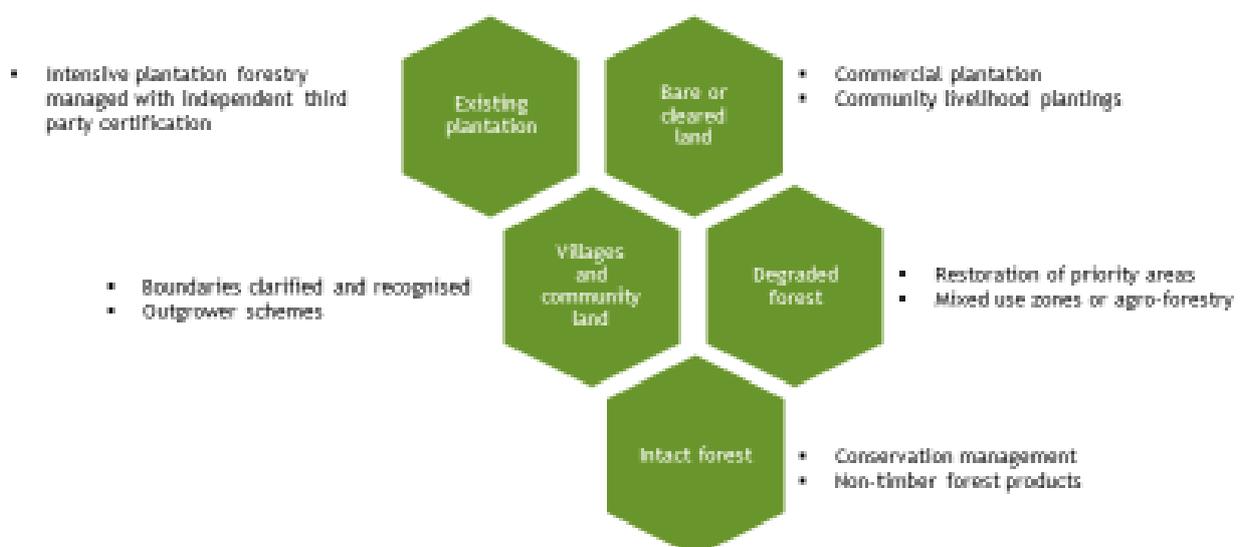
### **A Landscape Approach in Operational Context**

A landscape approach should be flexible and should reflect the history, culture, ecological functions, and economic geography of the area. The challenge is to identify goals and measurable performance indicators that support a forward-looking land use plan. We provide the following proposed characteristics of the landscape approach within a forestry operation:

- Multi-functionality - the landscape will likely include multiple uses and purposes
- Integrated spatial land use allocation decisions
- Transparent stakeholder engagement, including free, prior, and informed consent (FPIC)<sup>52</sup> processes where land use changes are being proposed
- Recognition of the rights and responsibilities of stakeholders including circumstances where rights to use land are unclear, overlapping, or shared
- Consideration of the impact of the business' operations within the broader landscape

In practice this means that forestry plantation management areas will consist of a mosaic of different land uses - productive forestry plantation, natural forest, buffer zones, areas dedicated to conservation and restoration, livelihood zones, community agricultural zones, villages, and supporting infrastructure. It is the agreement on this spatial mosaic, the presence of a multi-faceted planning perspective, and the promotion of consensus building and mutual respect among stakeholders and land managers that characterises the landscape approach.

Within the Southeast Asian region, land tenure and permitting systems vary from country to country; there are many types of permit, concession, license, and forestry right structures that have terms related to length of tenure, form of use rights, restrictions on use, accommodation of community land uses, and legislative and regulatory controls. Throughout this paper, plantation forestry areas are referred to broadly rather than focusing on a single tenure or regulatory framework, in order to be inclusive of the variety of structures that may be encountered. However, the ability to include multiple land uses within the specific permit or tenure right held over an area will vary from country to country, and sometimes may even depend on state or provincial regulations.



<sup>52</sup> FPIC is defined by the Forest Peoples Programme as “the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use.” For more information see: <http://www.forestpeoples.org/guiding-principles/free-prior-and-informed-consent-fpic>.

The spatial integration of land use areas should be based on respect for local communities and the rights of indigenous peoples, stakeholder engagement, technical feasibility and site suitability for each use. By accounting for these factors, the commercial landscape approach enables planning that can create value by transitioning from current land use to higher and better uses that include a combination of restoration, conservation, subsistence livelihood, and commercial activities. Under such an approach businesses can dedicate some areas to the intensive production of timber plantations; restore degraded areas for conservation management or, if appropriate, transition them to agroforestry; and protect and conserve intact natural forests for the value of their ecosystem services. In addition, livelihood and community areas must be included with attention to customary land use and following FPIC procedures.

In addition, it is important for forestry plantation areas to fit within the broader landscape in which they exist. This means that while an emphasis on production can be applied within plantation operations, the plantation area is also a component of a larger landscape, which will also include multiple land uses and stakeholders. Therefore, the activities of the plantation forestry operation should also contribute to regional social, environmental, and development needs and objectives.

### Costs and resource requirements

A landscape approach requires an understanding of the social and environmental contexts of the management area. Broadly speaking, the implementation of the landscape approach will incur four main types of costs above and beyond core forestry operations costs:



To achieve compliance with legal or regulatory requirements, contractual agreements and industry best practice operating standards, the majority of businesses should already anticipate most of the costs noted above. However, in practice, social and environmental assessment and management activities frequently suffer from poor implementation and a lack of resourcing. The proper execution of a landscape approach will require additional attention to these areas from investors, operators, and supporting stakeholders. These requirements may face financial and technical capacity constraints, which can hinder successful implementation of the landscape approach. However, the costs of poor implementation or lack of follow through on stakeholder agreements can be much higher and can jeopardize business objectives and investment returns.

### Overcoming barriers to landscape approaches

Even with a commitment by investors to stakeholder engagement and landscape level planning, there are broader governance and institutional constraints that can hinder implementation of the landscape approach.

Throughout Southeast Asia, agriculture, forestry, mining, and other sectors have traditionally been viewed and managed in separate silos, each subject to different regulations and under the purview of different government ministries and agencies. This has resulted in a complex and frequently overlapping array of land use licenses, mining permits, and regulations that can create risks to investors. For an investor acquiring an existing forestry plantation or developing a greenfield plantation this can be an important part of due diligence. There is a need to understand overlapping land use rights such as mining rights, community use rights, traditional indigenous community rights, road or transportation easements, and other competing claims that may affect the capacity to effectively deliver on the land use plan and agreements negotiated with stakeholders.

Another principal barrier is the lack of commercial motivation for restoration and conservation activities. To make restoration and conservation commercially attractive, there must be a value attributed to these land uses. This can come either from financial benefits, such as grants, income, or government tax incentives, or from non-financial benefits such as risk reduction, social license to operate, or better resource management that supports local communities, such as protecting water quality and quantity. Non-financial benefits of conservation and restoration can help justify the cost of managing these areas, however, where the net result is an investment that fails to reach a commercial, risk-adjusted return, the investment may prove unviable. This is where ultimately we need price signals for ecosystem services such as carbon storage, biodiversity conservation, and watershed management so that a landscape management approach becomes economically more attractive than further conversion of natural forests.

Carbon markets are the primary current commercial opportunity for restoration and conservation of tropical forests, but policy settings have been somewhat unstable and demand has been limited to voluntary markets. This has significantly restricted private sector investment in Reducing Emissions from Deforestation and Degradation (REDD+). Some pioneering and perseverant project developers have pushed ahead with REDD+ in the meanwhile and demonstrated through the voluntary markets that REDD+ can achieve emissions reductions and deliver verifiable, reliable offsets. One option may be for investors in forestry plantations to embrace voluntary carbon market opportunities to offset the costs of restoration and

conservation in a landscape management plan. However, the lack of a clear government mediated price signal for climate smart land use means that the quantum of demand is far less than the financial needs for comprehensive conservation outcomes.

### **Can you invest with a landscape approach in Southeast Asia?**

Since 2012 New Forests has been investing the Tropical Asia Forest Fund (TAFF), a USD 170 million fund aiming to establish a portfolio of timber plantations in Southeast Asia. Through our project origination and operational activities we have encountered several challenges to investment. Some of these challenges related to past environmental impacts, social, and governance issues that would not be barriers for other operators seeking a business as usual forestry approach. Ultimately we believe that some of the challenges set out below will become opportunities if we reach a point where ecosystem services like carbon storage are priced, or where certified sustainable producers gain a market price advantage.

- Purchase price is below vendor expectation or market rate. A landscape approach may reduce the overall area of land that can be used for commercial activities, which can reduce the amount that a buyer can offer to pay for a business or the value of a concession or other area of land. This can mean that a vendor will seek out a higher price from another buyer.
- Partners do not understand the landscape approach or are unwilling to set aside potential commercial area. If engaging in business partnerships, the counterparty may perceive that they would be accepting a lower profit by agreeing to a landscape approach. This may need to be mitigated by the use of compensation payments to the counterparty or by using shareholders agreements to clearly identify the investment mandate and operating standards such as maintenance of High Carbon Stocks, High Conservation Values, or committing to seek third-party certification.
- Restoration and conservation activities incur costs without clear return. If restoration or compensation activities are required to address ecological functions or to meet the requirements of a third-party standard, this can introduce an added cost that would lower profitability or returns compared to following the status quo. The value of natural capital contributions - such as pest control, resilience, and site productivity - are not factored in to traditional valuations of businesses or considered in the trade offs of opportunity costs.

In the case of TAFF, New Forests has found that while there may be a commercial cost of restoration and conservation, there are potential value adds that can at least partially offset these costs. These include lowered environmental risk, such as fire and pests; the possibility of obtaining price premiums or better market access for sustainably certified products; and engendering trust and good will with other stakeholders, which provides a more stable business environment and supports social license to operate. Furthermore, New Forests' clients are institutional investors and development banks with stringent sustainability requirements and concern for reputational risk. For many of these clients, to engage in destruction of high conservation values or failing to implement high standards of social and environmental management would be a nonstarter.

There are also new market incentives emerging from commodity certification schemes, which could provide an economic benefit for businesses that are willing to engage in restoration and conservation. For example, the Roundtable on Sustainable Palm Oil (RSPO) has developed Remediation and Compensation Procedures (RACP), which are required when companies account for areas cleared without prior High Conservation Value (HCV) assessment.<sup>53</sup> The RACP allows RSPO member companies to use restoration and conservation activities to address prior impacts by either managing areas for biodiversity conservation or by providing funding to third-party conservation projects, based on per hectare liabilities. Similarly, the Forest Stewardship Council (FSC) has undertaken to review its plantation rules such that it may promote the restoration of degraded lands and address limitations on companies responsible for conversion of forest after 1994.<sup>54</sup> An FSC working group has considered the opportunities for restoration with the intention to develop a framework that clarifies how converted lands may be certified if additional mitigation measures are employed. The working group has proposed mitigation efforts that provide “environmental and social net gains” with priority given to conservation and restoration within the forest area to be certified. While both the RSPO and FSC mitigation mechanisms are still under development, these are both examples of opportunities that could provide commercial returns to businesses that undertake restoration activities within larger management units or even to provide restoration as a service to other forest and land managers.

### Benefits and opportunities of a landscape approach

The strength of landscape approaches is that they recognise that multiple land uses and rights to land use must be accommodated for effective forest and land management. This allows for a combination of commercial investment in commodity production, community land use, conservation, and restoration activities to operate together in a consensus-driven land use plan, rather than viewing such activities as opposed. With international momentum building in support of landscape approaches, the private sector faces an imperative to contribute positively to these planning and land use allocation processes. As landscape approaches become increasingly prevalent, there will be fewer excuses for not implementing this framework. In fact risk will rise for businesses with poor stakeholder engagement. These risks will come from greater enforcement of existing regulations as well as new regulations, the inability to access new land or capital for further expansion, and the potential loss of market share as supply chain transparency increases.

Commercial landscape management also aligns with the zero-deforestation commitments made by hundreds of prominent multi-national companies and consumer brands. In reality, the steps required to implement a zero-deforestation approach in the field are included within the design and implementation of a landscape approach. The key difference is that a landscape approach is based on a process of stakeholder and local community engagement that can provide a process to make zero-deforestation outcomes part of a wider socioeconomic plan. This is more likely to create a sustainable outcome than just focusing on preventing further deforestation.

---

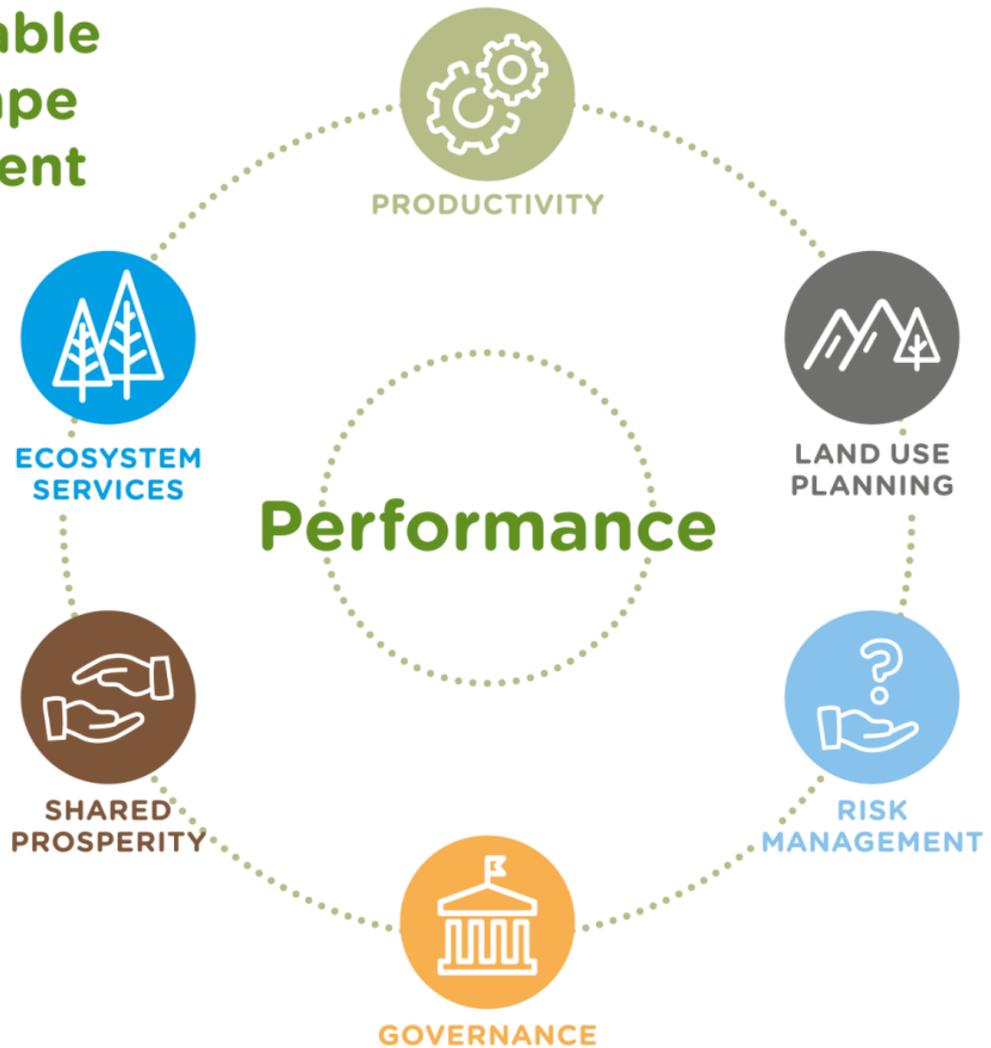
<sup>53</sup> Update on the Endorsement of the RSPO Remediation and Compensation Procedures, <http://www.rspo.org/news-and-events/announcements/update-on-the-endorsement-of-the-rspo-remediation-and-compensation-procedures-racp>.

<sup>54</sup> FSC Re-examines the 1994 Rule for Plantations, <https://ic.fsc.org/en/certification/processes-and-reviews/current-processes/fsc-re-examines-the-1994-rule-for-plantations>.

New Forests has developed its Sustainable Landscape Investment framework in recognition that a combined emphasis on social, environmental, and business issues will drive better investment performance, and align the interests of investment clients with positive outcomes for society and the environment. This framework will continue to be developed, including for the elaboration of dedicated metrics in support of monitoring impacts and the efficacy of this approach. New Forests welcomes input and ideas from partners and other stakeholders as the company continues to develop and implement its Sustainable Landscape Investment framework.

The landscape approach also presents opportunities that can support better business outcomes across productivity, stakeholder relations, risk management, and business development and marketing.

## Sustainable Landscape Investment



## Productivity

- Intensified production can improve productivity and profitability on a per-hectare rate
- Land use analysis can help direct production to the most suitable areas, resulting in greater productivity rates as compared to broad scale planting without regard to site conditions
- Focus on R&D and desirable traits can produce more valuable wood products, creating a higher value per area of management

## Stakeholder Relations

- Stable stakeholder relations and effective community relations minimizes reputational risk and conflict
- Clear and respected land use classifications support enhanced plantation security and more confidence in local communities
- Potential to develop out-grower or profit share schemes for inclusive growth opportunities while helping businesses access more plantable area

## Risk Management

- Best management practices lower environmental risk and provide fire-risk reduction
- Diversified spatial planning provides risk mitigation against fire and pests
- Surpassing regulatory compliance will safeguard against fines and legal risk

## Business Development and Markets

- Exposure to emerging markets for ecosystem services - conservation set asides can be managed commercially in voluntary carbon markets today or in future regulated markets
- Ability to meet high levels of disclosure and transparency and align with leading international standards, e.g. FSC and PEFC, providing timber market access and potential price premiums in certain markets
- Readiness for future regulation that may require integration with broader landscape approaches

## Policy Recommendations

The private sector is acting now and has the opportunity to demonstrate successful commercial landscape management approaches. Successful implementation can support policymakers in setting frameworks for larger scale landscape approaches that combine commodity production with restoration and conservation of natural resources. Continued support from policymakers and other stakeholders is needed to bring scale to the commercial landscape approach and encourage more private sector participants to engage in processes to reach land use agreements with communities, stakeholders, and local business operators. From an economic policy and

regional development perspective it is important to create an environment that can encourage investment in a way that will be sustainable. Based on the current barriers, costs, and potential opportunities of the commercial landscape management approach, policymakers and other stakeholders should consider the following recommendations:

- Promote effective management of ecosystem services through market-based mechanisms, including carbon markets, biodiversity compensation, and water quality and quantity markets.
- Develop and promote the understanding of the contributions of natural capital across landscapes, so that relative values of production, conservation, and restoration can be managed for long-term beneficial outcomes.
- Enhance dialogue across government agencies and sectors so that institutional governance “silos” do not inhibit integrated land use models.
- Include restoration and conservation activities within leading industry standards and sustainable commodity roundtables.
- Enable “land swapping” or processes to change land classifications such that multi-functional approaches are enabled by regulatory settings and regional landscape goals can be supported.<sup>55</sup>
- Require forestry plantation businesses - and other key land use sectors - to demonstrate consideration of environmental, social, and economic sustainability of their operations in all forest management plans.

**MaryKate Bullen**

Associate Director - Sustainability & Communications

[mbullen@newforests.com.au](mailto:mbullen@newforests.com.au)

**David Brand**

CEO

[davidbrand@newforests.com.au](mailto:davidbrand@newforests.com.au)

[www.newforests.com.au](http://www.newforests.com.au)

[info@newforests.com.au](mailto:info@newforests.com.au)

+61 2 9406 4100



---

<sup>55</sup> See for example, WRI, October 2013. How to Change Legal Land Use Classifications to Support Sustainable Palm Oil.

[http://www.wri.org/sites/default/files/how\\_to\\_change\\_legal\\_land\\_use\\_classifications\\_to\\_support\\_sustainable\\_palm\\_oil.pdf](http://www.wri.org/sites/default/files/how_to_change_legal_land_use_classifications_to_support_sustainable_palm_oil.pdf)

## 5. Monitoring, evaluation, reporting and verification

---

### KPMG

The Asia-Pacific Rainforest Partnership (the Partnership) is a regional platform to progress and demonstrate the practical implementation of the Paris climate change agreement (Paris Agreement<sup>56</sup>) in the region, with a specific focus on Intended Nationally Determined Contributions<sup>57</sup> (INDC) and support the implementation of the United Nation's Reducing Emissions from Deforestation and Forest Degradation (REDD).<sup>58</sup> Understanding the extent to which the private sector contributes to meeting these regional and national goals and commitments will require monitoring, evaluation, reporting and verification (MERV) that, if implemented well, can have a positive influence on the global progress towards meeting the Paris Agreement commitments.

This *Discussion Paper on Monitoring, Evaluation, Reporting and Verification (MERV) Frameworks* (discussion paper) provides the Private Sector Roundtable for the Partnership and relevant government decision makers with:

- An overview of MERV frameworks, for example, their purpose and common characteristics, and their relevance to the Partnership;
- Discussion points and key considerations that the private sector may consider when developing a MERV framework;
- Case studies of existing MERV frameworks within a global context that illustrate key lessons that may be applied to the development of private sector projects; and
- An overview of potential next steps that could be used by the private sector to develop and implement a MERV, or improve an existing MERV.

The discussion paper does not detail:

- The objectives and MERV options for the project concepts being put forward by Roundtable members;
- The identification of specific environmental and social impact indicators, criteria or standards associated with the objectives of the Private Sector Roundtable pilot projects; or

---

<sup>56</sup> Article 5 of the 2015 Paris Climate Change Agreement, for example, states that 'Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases ... including forests'.

<sup>57</sup> INDCs represent targets and actions for the post-2020 period.

<sup>58</sup> REDD: <http://www.un-redd.org/>

- Specific climate change-related MERV options, including those detailed through the Green Climate Fund, Intergovernmental Panel on Climate Change (IPCC) reporting or the Paris Agreement.

### Background to MERV frameworks

MERV provides opportunities to develop an understanding of the effectiveness of a partnership, plan, project, program, or policy (P5) and identify ways in which to improve it.<sup>59</sup> These outcomes, in turn, allow for the development of knowledge (based on evidence) that can be used in the design and implementation of future P5s. Furthermore, the process of monitoring, evaluating, reporting and verifying the inputs, activities, outputs, impacts and outcomes (both planned and unplanned) of a P5 assists its proponents (i.e. those who developed and/or implement and manage it) to demonstrate its value to the providers of the P5 capital (including governments, corporations and investment institutions). It also allows providers of capital to gain an understanding of the effectiveness of their funding in supporting the P5's objectives. MERV is thus a fundamental learning and accountability process.<sup>60</sup>

MERV frameworks differ depending on the context in and purpose for which they are developed and used. In addition, the definition of MERV (and its four separate aspects) can also differ and is context specific. The scope of the four aspects will thus vary between P5s. This discussion paper focuses on the design and implementation of MERV frameworks in the context of forest conservation and management P5s, taking into account the diversity of environmental and socio-economic objectives for which these P5s are designed and implemented. Definitions of MERV are provided in Box 1.

#### Box 1. Defining monitoring, evaluation, reporting and verification

**Monitoring:** Monitoring refers to the regular and consistent observation performed by those involved in the day-to-day activities of a P5 in order to assess its 'progress against achieving goals'<sup>61</sup> and/or P5 objectives, and make necessary changes to respond to poor progress or un/anticipated negative impacts. The development of key performance indicators that reflect the objectives of the P5 both supports the monitoring process and provides regular data that can be used in evaluation. Monitoring should be underpinned by a clear methodology and measurable KPIs that enables year-on-year comparison against a baseline.

Depending on the process taken, monitoring can involve the participation of a range of

<sup>59</sup> While this discussion paper is focused on the development and use of a MERV specific to the Partnership, MERVs can also be designed and applied to plans, projects, programs and policies, which is reflected in the case studies and references provided throughout the discussion paper and hence the use of the abbreviation, 'P5'.

<sup>60</sup> The World Conservation Union (IUCN) (2013) *The IUCN Monitoring and Evaluation Policy*. Version 2, November 2013. Available at [http://www.iucn.org/downloads/evaluation\\_policy\\_eng.pdf](http://www.iucn.org/downloads/evaluation_policy_eng.pdf) Accessed 24 June 2016.

<sup>61</sup> United Nations Development Programme (UNDP) (2009) *Handbook on Planning, Monitoring and Evaluating for Development Results*. Available at <http://web.undp.org/evaluation/evaluations/handbook/english/documents/pme-handbook.pdf> Accessed 24 June 2016, p8.

stakeholders, including members of the private and community sectors, landholders and managers, local leaders and others involved in land use, the community and governance (often referred to as participatory monitoring).<sup>62,63</sup>

**Evaluation:** Evaluation refers to the periodic assessment by a second or third party (i.e. an evaluator may be involved in funding or sponsoring the P5) to assess the ‘relevance, effectiveness, efficiency, impact and sustainability of an activity in the context of stated objectives’.<sup>64</sup> Evaluation findings should be shared with those involved in monitoring to provide opportunities to incorporate learnings into decision making processes to adapt the P5 as necessary.<sup>65</sup>

**Reporting:** Reporting refers to communicating the results of monitoring or evaluation to ensure that results are communicated, stored and (depending on the context) can be accessed by other interested parties. Reporting also forms the basis for verification. Reporting is important to ensure transparency of the P5, including its funding.

**Verification:** Verification is conducted by an independent party, who provides an analysis to test the ‘accuracy and reliability’ of results contained within monitoring and evaluation reports.<sup>66</sup> It is of particular importance where an independent view of the effectiveness of a P5 in meeting its objectives is included within the funding conditions.

An effective MERV framework, which is appropriately implemented by members of the Private Sector Roundtable and associated projects, will be crucial to the ability of the private sector, governments, and the community sector to work together to achieve the shared vision and goals of the Partnership. The goals of the Partnership recently changed to focus on the practical implementation of the Paris Agreement<sup>67</sup> in the region, with a specific focus on INDCs and to support the implementation of REDD. The list below outlines a number of factors relating to MERV that should be considered as the Partnership continues to be developed.

- A focus on MERV from the beginning of a P5 development process encourages the creation of a baseline from which to measure progress. Having a baseline is key to effective MERV

---

<sup>62</sup> See IUCN (2000) Planning, Monitoring and Evaluating Programmes and Projects: Introduction to Key Concepts, Approaches and Terms. Working Draft, Version 1 - March 2000. Available at [http://cmsdata.iucn.org/downloads/pme\\_concepts\\_terms\\_00.pdf](http://cmsdata.iucn.org/downloads/pme_concepts_terms_00.pdf) Accessed 23 June 2016.

<sup>63</sup> South African Department of Water Affairs and Forestry (2005) Project Monitoring and Evaluation. Available at <http://www.daff.gov.za/doaDev/sideMenu/ForestryWeb/dwaf/cmsdocs/Elsa/Docs/PFM/PFM%20Guideline7.pdf> Accessed 23 June 2016.

<sup>64</sup> IUCN (2013) p4-5.

<sup>65</sup> IUCN (2013) p5.

<sup>66</sup> UN-REDD Programme (2013) *National Forest Monitoring Systems: Monitoring and Measurement, Reporting and Verification (M&MRV) in the context of REDD+ Activities*. Accessed at <http://www.fao.org/3/a-bc395e.pdf> Accessed on 24 June 2016, p19.

<sup>67</sup> Article 5 of the 2015 Paris Climate Change Agreement, for example, states that ‘Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases ... including forests’.

as it provides an information base against which to monitor and assess progress and effectiveness during implementation and after the P5 is complete. It is necessary to consider the type of comparison that will be required to assess progress, for example, in some cases it is most relevant to compare the situation over time to the scenario prior to the intervention (i.e. a fixed time), while in other cases it will be more appropriate to compare the situation over time to the estimated scenario that would have occurred with no intervention. In any case, it is important that the process for MERV is defined upfront to provide transparency, although changes to the MERV may be required over time. This is particularly relevant to the current Partnership to ensure that projects are measured in respect to the overall goals of the Partnership and in respect of the regional INDCs. See Example 1, which provides some learnings from a program that used a clearly-defined baseline.

- The combination of the multiple aspects of MERV, i.e. monitoring, evaluating, reporting and verifying, provides various opportunities for stakeholder participation and learning. For example, monitoring by those involved in the implementation of activities undertaken as part of a P5 (and in the case of the Partnership, projects from members of the private sector) encourages the involvement of the private sector, landholders and other stakeholders and allows those managing the P5 or financing it to engage these stakeholders in a participatory manner,<sup>68</sup> working with them to make relevant changes to their activities to better support the P5's objectives. Following this with independent evaluation enables the generation of further, objective evidence with which to support evidence-based decision making on any changes required to ensure that the goals of the P5 are met.
- Both reporting and verification contribute to ensuring transparency and accountability. Reporting ensures that a record of progress is maintained and can be shared, which supports the building of knowledge to improve the design and implementation of future P5s. Verification provides an independent view of the process and results of a P5, which has positive implications for P5 governance and builds the credibility of those involved in implementing successful activities.

---

<sup>68</sup> The involvement of landholders and other stakeholders is a common practice in forest management. For example, the South African Department of Water Affairs and Forestry (2006), has referred to Participatory Forest Management (PFM) in the following way: 'PFM seeks to ensure that there is a shared responsibility of forest management between key stakeholders and the state, and that there is a sustainable flow of benefits to key stakeholders.'

### Example 1. Kalimantan, Indonesia: Katingan Peatland Restoration and Conservation Project<sup>69</sup>

#### Case study:

The Katingan Peatland Restoration and Conservation Project (the Project), a Roundtable featured project, aims to protect and restore 149,800 hectares of natural peatland forest ecosystem in the districts of Katingan and Kotawaringin Timur in Central Kalimantan Province, Indonesia.

The Project is managed by the Indonesian company PT. Rimba Makmur Utama and involves the collaboration of the 34 villages that surround the core peatland area. It is financed through payments received for reductions in and sequestration of greenhouse gas (GHG) emissions against a pre-calculated baseline.

The project is closely monitored, not only to assess performance in relation to peatland conservation and restoration and GHG emissions avoided and sequestered, but also to assess performance against social and biodiversity-based metrics, for example, the number of community members benefitting from aquaculture, agroforestry and ecotourism activities and number of village boundary agreements completed.<sup>70</sup> These metrics are placed within a broader context, to provide a rationale for their inclusion, so that the following information is provided for each metric:

- The associated criteria area;
- The expected baseline scenario (i.e. what could have been expected to have occurred without the Project);
- The scenario expected with the Project; and
- (In the case of the 2016 Monitoring and Implementation Report) 2010 and 2015 data.

Results of monitoring are made public and are verified through internationally-recognised verification standards, for example, the Verified Carbon Standard<sup>71</sup>.

#### Key learnings:

- A strong baseline supports ongoing monitoring and provides a basis for transparent and consistent reporting that allows progress to be monitored over time.
- Clear metrics, based on clear goals, help to support activities that meet a range of environmental and socio-economic outcomes.
- Verification of monitoring results further increases transparency and supports financing by, for example, project partners and/or government and non-government organisations.

---

<sup>69</sup> For further information, see the Project website. Accessed at <http://katinganproject.com/>. See also the Project's Monitoring and Implementation Report using Verified Carbon Standards, published in 2016 for the period 1 Nov 2010 to 31 Oct 2015. Accessed at [http://www.v-c-s.org/wp-content/uploads/2016/06/CCB\\_IMP\\_REP\\_1477\\_13JUN2016.pdf](http://www.v-c-s.org/wp-content/uploads/2016/06/CCB_IMP_REP_1477_13JUN2016.pdf) Both accessed on 12 July 2016.

<sup>70</sup> Table 75 of the Project's Monitoring and Implementation Report (2016) Accessed at [http://www.v-c-s.org/wp-content/uploads/2016/06/CCB\\_IMP\\_REP\\_1477\\_13JUN2016.pdf](http://www.v-c-s.org/wp-content/uploads/2016/06/CCB_IMP_REP_1477_13JUN2016.pdf) Accessed on 12 July 2016.

<sup>71</sup> <http://www.v-c-s.org/>

## Discussion of MERV frameworks

This section outlines a number of considerations that may be taken into account to maximise the effectiveness of MERV, and a variety of challenges to designing and implementing MERV frameworks.

### Maximising the effectiveness of MERV

While MERV frameworks vary, there are a number of features that can ensure that these frameworks are highly effective in their design and implementation. This section outlines a range of features for consideration by the Private Sector Roundtable.

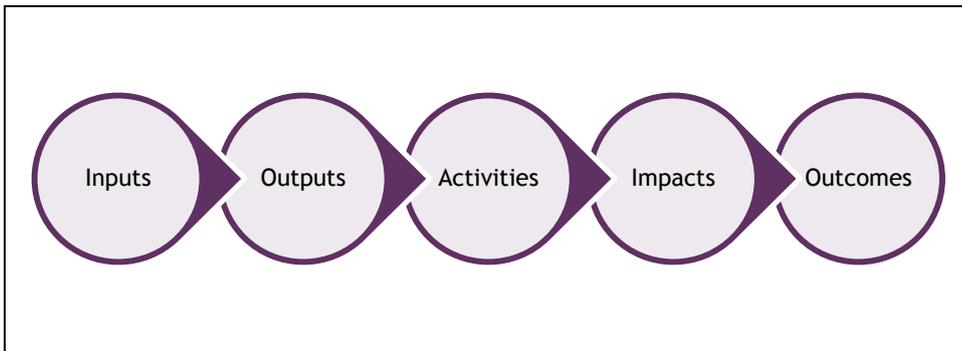
- MERV should be structured based on the objectives of the P5 to ensure that the questions asked and/or indicators used lead to the collection of relevant and usable data, which is important to maximise the value gained from investing the resources to gather the data. One way of doing this is through the use of ‘performance questions’, i.e. questions that are:
  - Linked to the objectives of the P5 and purpose of the monitoring or evaluation;
  - Used to determine whether a P5 is performing as expected;
  - Form the basis of indicators.<sup>72</sup>
- Indicators used in monitoring and evaluation will necessarily require quantitative data collection and, in the case of the Private Sector Roundtable’s projects, indicators could include environmental indicators, e.g. a quantification of the amount of natural rainforest loss within a given area. MERV can also, however, include qualitative and socio-economic indicators (as outlined in Example 1).<sup>73</sup> Using a mixture of indicators is important in the context of the projects because progress towards environmental or land use goals require changes in the management and use of associated natural resources. Those involved in implementing these changes (for example, through a change in the extent to, or manner in, which timber harvesting occurs) will likely experience a range of negative and positive socio-economic impacts, which in turn may encourage or discourage them from supporting the necessary changes. Using socio-economic indicators can help to track progress against objectives by identifying the extent to which stakeholders are supporting the P5’s goals through their activities, and the negative and positive impacts they experience as a result, which may be planned/unplanned.
- When designing indicators, it is important to consider the change pathway required to achieve the P5’s goals. An example, shown in Figure 1, illustrates one way of considering

---

<sup>72</sup> Department of Water Affairs and Forestry Republic of South Africa (2005)

<sup>73</sup> For example, see USAID (2000) *Best Practices Guide: Monitoring, Evaluation, Reporting, Verification, and Certification of Climate Change Mitigation Projects*. Accessed [http://pdf.usaid.gov/pdf\\_docs/Pnacq963.pdf](http://pdf.usaid.gov/pdf_docs/Pnacq963.pdf) Accessed on 22 June 2016. Refers to the use of socio-economic indicators.

this pathway. While it can be relatively easy to measure inputs and outputs, it is often more difficult to assess the impacts and outcomes that occur. Understanding all parts of the change pathway may begin as a theoretical pathway, i.e. a map of the expected progress required to achieve the desired objectives (or outcomes) or the activity in question, and these stages can then be observed to see whether the expected pathway is occurring.



**Figure 1. Change pathway**

- Similarly it is also of critical importance to ensure that there is a ‘means to verification’. Figure 2 provides an example, published by the United Nations Development Programme (UNDP), of how the different elements of the pathway can be monitored, evaluated and verified. The UNDP framework takes into account indicators, the baseline condition, the target condition and means of verification, with indicators to monitor and evaluate progress against goals regarding the impacts, outcomes and outputs of the program or project. It is feasible that such a framework could also include indicators against inputs and activities.

Indicator	Baseline	Target	Means of Verification
<b>IMPACT: Increased public participation in national and local elections, particularly by women, indigenous populations and other traditionally marginalized groups</b>			
Overall proportion of eligible voters who vote in the national (or local) elections	2006: 42% of eligible voters voted in national elections	2010: 70% of eligible voters vote in national elections	Office of Electoral Administration's final report on elections
<b>OUTCOME: Electoral administrative policies and systems reformed to ensure freer and fairer elections and to facilitate participation by marginalized groups</b>			
Percentage of public that believe that the electoral management process is free and fair	2006: 30% (based on last survey conducted)	2010: 80%	Special survey to be undertaken as part of the electoral assistance project in 2008 and 2010
Percentage increase in number of women registered to vote	2007: 0% of women registered to vote (women were not allowed to vote)	2010: 20% annual increase in percentage of eligible women registered to vote	Office of Electoral Administration's database
Ratio of voter registration centres per population in rural areas	2006: 1 centre to 11,000 people	2010: 1 centre to 4,000 people	To be computed based on number of centres (Electoral Office database) in relation to population in rural areas (National Planning Agency's 2010 demographic survey)
<b>OUTPUT 1: Draft new policy on electoral reform formulated and submitted to Cabinet</b>			
Progress made in drafting new policy	2008: Agreement reached between major political parties on need to redraft electoral legislation	2009: 5 major public consultations held and white paper prepared on new policy	Report from government agency organizing workshops  Record of Parliamentary proceedings (for submission of white paper) to be obtained from Office of Public Sector Information

Figure 2. Subset of 'Sample results framework with means of verification'<sup>74</sup>

When considering the process by which a MERV framework will be developed and implemented, the following considerations apply:

- The content and implementation of the MERV should be taken into account as early as possible to ensure that the development of the P5 and its associated activities occurs in conjunction with the development of the process through which its success will be assessed. Taking into account MERV needs early provides an avenue through which to test elements of the P5, for example, by encouraging developers to assess whether the draft objectives of the P5 are measurable, and by encouraging the development of a baseline early. It also helps to ensure that stakeholders that will be involved in implementing the P5 know how their performance will be assessed from early on.
- The level of participation involved, particularly in monitoring should be considered. There are multiple opportunities to involve participants, which can be particularly beneficial in terms of building knowledge and capacity, for example through participatory monitoring, collective impact (see Example 4) and inclusive business. A fourth option involves the use of a self-assessment mechanism, whereby those involved in the P5 or associated activities conduct their own assessment which is used as the basis for verification.

<sup>74</sup> UNDP (2009) p72.

- MERV may expand over time as the capacity of those involved (particularly in monitoring) grows. While it is important to build towards understanding the effectiveness of a P5 in terms of inputs, outputs, activities, impacts, outcomes, it may be necessary to begin by collecting data on the inputs, outputs and activities, which are often more straightforward to measure (i.e. easily counted and recorded), and using this as a vehicle to build capacity and capability to increase MERV around the areas of impacts and outcomes, which may be less obvious or more difficult to illustrate but are critical because they reflect the broader objectives of the P5 (see Figure 1). A MERV framework should outline expectations around all these areas, to show the longer term aims of the MERV framework.
- The MERV can be treated as a learning and management tool in that both the MERV framework and the P5 and/or activities it is designed for can be altered in response to learnings developed through the MERV process. MERV can thus be used as part of a cycle of Plan-Do-Check-Act (Figure 3). Any changes made to the P5 and/or MERV should be communicated clearly to all of the stakeholders. At the same time, it is important to keep in mind the level of burden that the data collection and reporting places on stakeholders to ensure that the effort is sustainable and the process remains relevant (for example, the indicators continue to provide useful information).

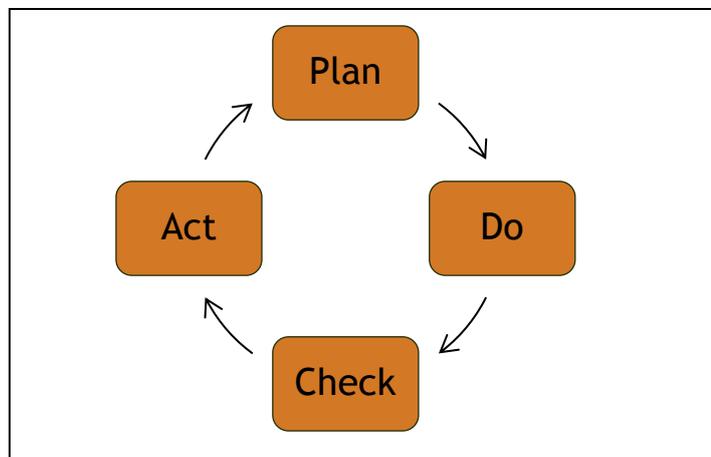


Figure 3. Plan-Do-Check-Act Framework

- Transparency is important throughout the process to ensure that stakeholders understand the purpose of the MERV, the processes required, and how the findings will be used. MERV should also be conducted by those with sufficient independence (with those involved in verification required to have the highest level of independence). A grievance mechanism should be included so that stakeholders and others can raise any concerns they may have in a manner that protects them and that ensures these concerns are investigated sensitively.<sup>75</sup> Transparency is associated with ethical conduct, which also requires that MERV is conducted in a manner that respects the stakeholders involved

<sup>75</sup> Pham TT et al (2013) publication refers to the need for grievance mechanism. For example, p8.

(their ‘welfare, beliefs and customs’),<sup>76</sup> that there is no conflict of interest, and that consideration is taken to ensure that the MERV framework is suitable to the scenario (for example, the appropriate stakeholders can participate without undue burden and the requirements do not go beyond what is practical and necessary to the purpose). Finally, transparency is also important to ensure that the capital owners understand how the MERV assists with validating the outcomes of the P5, as well as providing a mechanism from which to assess future transactions and funding associated with the P5 and its associated activities.

Examples 2, 3, 4 and 5 draw out lessons learned from a selection of P5s, to provide considerations that may be taken into account by those developing and implementing projects associated with the Private Sector Roundtable.

## Example 2. PALM (Prioritising Areas, Landscapes and Mills) Risk Tool

### Case study:

The increased use of palm oil in many everyday products has contributed to significant levels of deforestation for the development of palm oil plantations. In 2010, the Consumer Goods Forum committed to reducing the use of palm oil sourced from plantations developed following deforestation.<sup>77</sup>

Global Forest Watch, in partnership with Proforest and Daemeter, recently developed the PALM Risk Tool to support consumer goods companies in their efforts to purchase only ‘deforestation-free’ palm oil for use in their products.<sup>78</sup> The Tool allows companies to assess the level of risk associated with their suppliers, based on the landscape surrounding the suppliers’ mill. This assessment is made possible through the use of satellite imagery to assess fire activity and tree cover loss over time in the area around each known mill, together with the knowledge that there is a limited area in which fresh palm fruit can be transported.

In this example, constant monitoring through the use of satellite technology, provides companies with regular information on which to base decisions regarding their use of suppliers. This information helps them to meet the Consumer Goods Forum’s goal of reducing deforestation.

### Key learnings:

---

<sup>76</sup> IUCN (2013) p10.

<sup>77</sup> PR Newswire (2010) *Consumer Goods Industry Announces Initiatives on Climate Protection*. Published 1 Dec 2010. Accessed at <http://www.prnewswire.com/news-releases/consumer-goods-industry-announces-initiatives-on-climate-protection-111120189.html> Accessed on 12 July 2016.

<sup>78</sup> S. Lake and O. Payne (2016) Companies can now spot deforestation in their palm oil supply chains before it happens. Published 8 June 2016 by Global Forest Watch Accessed at [http://blog.globalforestwatch.org/2016/06/companies-can-now-spot-deforestation-in-their-palm-oil-supply-chains-before-it-happens/?utm\\_campaign=palmrisktool&utm\\_source=graphic&utm\\_medium=caption](http://blog.globalforestwatch.org/2016/06/companies-can-now-spot-deforestation-in-their-palm-oil-supply-chains-before-it-happens/?utm_campaign=palmrisktool&utm_source=graphic&utm_medium=caption) Accessed on 12 July 2016.

- Consider the frequency with which monitoring should take place, based on the purpose of the monitoring and use of monitoring results; and
- Consider how individual companies can work together in their activities to contribute to sector-wide goals, and the technology, information and coordination to do so.

### Example 3. IUCN Monitoring and Evaluation

#### Case study:

The International Union for Conservation of Nature (IUCN) is a global environmental organisation, with more than 1300 member organisations, consisting of both government and non-government organisations. It supports thousands of projects and activities focused on ‘species survival, environmental law, protected areas, social and economic policy, ecosystem management, and education and communication.’<sup>79</sup>

The IUCN, in supporting a diversity of programmes, projects, initiatives and partnerships has a strong focus on monitoring and evaluation, underpinned by a Monitoring and Evaluation Policy. This Policy includes the following sections:

- IUCN’s definition of monitoring and evaluation;
- The purpose of monitoring and evaluation at IUCN;
- Criteria and guiding principles for both monitoring and evaluation;
- Minimum monitoring and evaluation requirements; and
- Roles and responsibilities.<sup>80</sup>

The aim of the Policy ‘is to establish common structures and standards across the IUCN Secretariat that govern the application of effective monitoring and evaluation systems’<sup>81</sup> so as to maximise the flow of benefits from IUCN’s programmes, projects, initiatives and partnerships.

The Policy outlines a number of different types of monitoring and evaluation that can place, depending on the activity being monitoring or evaluated, for example, Programme Monitoring uses result and impact indicators to measure the ‘contribution of an IUCN programme or region to the achievement of IUCN’s Global Programme’ on an annual basis, while Project Monitoring ‘measures and reports on the implementation progress of a project’ with timing

---

<sup>79</sup> IUCN (2016) Webpage, Accessed at <http://www.iucn.org/secretariat/about> website Accessed 24 June 2016.

<sup>80</sup> IUCN (2013).

<sup>81</sup> IUCN (2013) p4.

decided on a project-by-project basis using a ‘logical framework’ and indicators agreed at the beginning of the project.<sup>82</sup>

Monitoring, evaluation and planning form the basis for the IUCN’s management strategy: Results Based Management (RBM). RBM involves identifying the results expected (outputs, outcomes and impacts) and the necessary inputs and activities. A key aspect on RBM is that evaluation is designed around the user and use of the findings.

**Key learnings:**

- Consider the use of an overarching MERV that provides guidance for multi-level MERV, i.e. the MERV of the Private Sector Roundtable projects and activities;
- Begin by ensuring a common understanding of the definitions and purpose of MERV; and
- Maintain a strong connection between the requirements of MERV and the benefits gained from the process and outcomes of MERV.

#### Example 4. Collective impact

**Case study:**

Collective impact, defined as ‘the commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem’.<sup>83</sup> Like the theory of collective impact, which brings key actors together to address a social problem such as poor education outcomes, the Partnership brings multiple actors together to collaboratively address an environmental problem - the loss of rainforest.

Collective impact takes the concept of collaborative to a new level, involving a ‘centralised infrastructure, a dedicated staff, and a structured process that leads to a common agenda, shared measurement, continuous communication, and mutually reinforcing activities among all participants’.<sup>84</sup>

The concept of shared measurement, in particular, suggests key opportunities for members of the Private Sector Roundtable. It does not require all projects to use the set of indicators, but rather encourages all projects involving the same activities to use the same measures. By using the same measures and reporting these in a unified way, for example, through a web-based reporting framework, parties from different projects can learn from each other more readily.

‘Strive’, a program set in the United States of America, involves 300 community leaders and

---

<sup>82</sup> IUCN (2013) p6.

<sup>83</sup> Stanford University (2016) *Collective Impact*. Stanford Social Innovation Review. Accessed at [http://ssir.org/articles/entry/collective\\_impact](http://ssir.org/articles/entry/collective_impact) Accessed on 23 June 2016.

<sup>84</sup> Stanford University (2016)

‘focused the entire educational community on a single set of goals, measured in the same way’.<sup>85</sup> This allows participants involved in similar activities to see ‘patterns’ within the reporting data, leading to the development of solutions that can be enacted across the projects to solve a similar problem or enhance an opportunity.

**Key learnings:**

- The use of a common set of indicators across projects, with activities of a similar nature, could increase opportunities for collective knowledge building, through comparison of results and sharing of ideas, while encouraging participants to remain accountable to each other.

**Example 5: REDD+**

**Case study:**

Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+) is a program launched in 2008 to build on the role of and expertise of the Food and Agricultural Organisation (FAO), the UNDP and the United Nations Environment Programme (UNEP).<sup>86</sup> The REDD+ Programme’s current goal is guided by its 2016-2020 strategic framework to reduce forest emissions and enhance carbon stocks in forests while contributing to national sustainable development. Prior to this, the focus of REDD+ was to reduce GHG emissions through reducing deforestation and forest degradation.

Developing countries play an important role in reducing GHG emissions, and in previous years these countries looked for funding to support their REDD+ activities. Funding was generally contingent on being able to demonstrate positive results (i.e. ‘results-based’ funding), however, REDD+ was challenged in the prior years due to disagreements among the parties involved about an appropriate verification methodology. Issues were raised, for example, regarding how forest was to be defined, with this uncertainty linked to concerns that areas not included under the definition of forest would not be ‘accounted for’, regardless of any reforestation or deforestation that occurred to them.<sup>87</sup>

In 2013, UN-REDD+<sup>88</sup> produced a report in which they refer to verification as ‘the process of independently checking the accuracy and reliability of reported information or the procedures used to generate information’.<sup>89</sup> They suggest that:

---

<sup>85</sup> Stanford University (2016)

<sup>86</sup> UN-REDD Programme (2016) *About the UN-REDD Programme*. Accessed at <http://www.un-redd.org/> Accessed on 21 July 2016.

<sup>87</sup> Dutschke M (2013) *Key issues in REDD+ and Verification*. CIFOR. Access at [http://www.cifor.org/publications/pdf\\_files/OccPapers/OP-88.pdf](http://www.cifor.org/publications/pdf_files/OccPapers/OP-88.pdf), Accessed on 21 June 2016, p8.

<sup>88</sup> ‘The UN-REDD Programme supports nationally led REDD+ processes and promotes the informed and meaningful involvement of all stakeholders, including indigenous peoples and other forest-dependent communities, in national and international

‘The verification of public information can be done by several institutions including the civil society. All the data, including the satellite and national forest inventory data if made available can be suitable for verification. The different means of verification could be: through interviews with key government officials and national NGOs, reports, media reports, training materials, etc.’<sup>90</sup>

#### Key learnings:

- Both the monitoring and evaluation findings that are reported, and the procedures followed to reach those findings, may require verification;
- Agreeing on MERV methodologies can be a challenge, for example, due to difficulties in defining what is and is not included in the MERV;
- Any connection between results and funding may add an additional challenge, as those dependent on external funding to support their activities may be negatively implicated in negative results; and
- Verification may be done using a variety of methods, with the most appropriate methods depending on the project context.

## Challenges

There are a number of challenges to consider when developing and implementing MERVs, particularly in a forestry context. Issues can include:

- **Low literacy and numeracy:** Issues such as low literacy and numeracy, or the unavailability of the MERV in the local language, will hinder the ability for all stakeholders to understand and participate in MERV and understand grievance mechanisms. Interviews and other verification processes with local landholders will need to be conducted in the local language, and any reporting should also be done in multiple languages to ensure that there is wide access to the results.
- **Conflict:** Areas in which there is conflict, making it dangerous to enter an area will likely hinder aspects of MERV that require onsite engagement.
- **Insufficient access to technology:** MERV can benefit from the use of advanced technology, which may not be available to all stakeholders, for example, planes/drones to assess forest cover.

---

REDD+ implementation.’ See UN-REDD (2016) Accessed at [http://www.unredd.net/index.php?option=com\\_content&view=article&id=2082&Itemid=515](http://www.unredd.net/index.php?option=com_content&view=article&id=2082&Itemid=515) Accessed on 23 June 2016

<sup>89</sup> UN-REDD Programme (2013) *National Forest Monitoring Systems: Monitoring and Measurement, Reporting and Verification (M&MRV) in the context of REDD+ Activities*. Accessed at <http://www.fao.org/3/a-bc395e.pdf> Accessed on 24 June 2016, p19.

<sup>90</sup> UN-REDD Programme (2013) p19.

- **Misalignment of stakeholder views:** A misalignment in the views, values, objectives or understanding of different stakeholders may lead to misunderstandings regarding or insufficient engagement in MERV.
- **Insufficient funding:** A lack of funding to implement the framework and maintain MERV will hinder the process and thus costs need to be maintained at a level that can be sustained.

More specifically, in relation to the Partnership, there are currently a number of factors that may hinder the design and implementation of MERV, these include:

- The development of a baseline against the Partnership's new objectives that accounts for the various INDCs and new REDD+ goals. As highlighted in Example 5, there is ongoing debate about the definition of forests, and related concepts such as deforestation and forest degradation. While definitions are similar, the differences become important in situations such as where they influence measures of success, or where a project may be implemented in response to more than one purpose (for example to contribute to meeting both national and regional commitments) with each purpose requiring differing MERV procedures.<sup>91</sup>
- It is noted that the existing Private Sector Roundtable programs were designed prior to an agreement on the objectives of the Partnership. Understanding retrospectively how these programs contribute to the Partnership's new objectives is an important consideration for the private sector, governments and future potential partners of the Partnership and Private Sector Roundtable. As the current pilot projects vary dramatically, it may be unfair to monitor these projects using indicators defined after the projects have commenced. In light of complexities, it is possible that a MERV framework could only be developed against the Partnership's objectives, rather than the broader project objectives. Some aspects of projects can be difficult to monitor/evaluate/verify, for example, it may be difficult to demonstrate a causal relationship between ending natural forest loss and sustainable forest management.

Finally, it will be crucial to ensure that:

- There is a clear understanding, between all relevant parties, of who owns/is responsible for a project and thus who is responsible for monitoring its implementation.
- There is agreement re who will be involved in MERV, i.e. to what extent will participatory monitoring take place and who will be responsible for evaluation and verification.

---

<sup>91</sup> See, for example, E. Romijn, J.H. Ainembabazi, A. Wijaya, M. Herold, A. Angelsen, L. Verchot, and D. Murdiyarso (2013) 'Exploring different forest definitions and their impact on developing REDD+ reference emission levels: A case study for Indonesia'. *Environmental Science and Policy*. 33, pp. 246-259.

## Next Steps for Discussion

This section outlines the key elements that the private sector and policy makers may consider when developing a MERV framework for private sector projects and the next steps that should be considered when planning for and developing a MERV framework and process.

As discussed above, there are a number of considerations that need to be made. Some of these considerations are general in nature while others are specific to projects. The next steps involved in developing a MERV involve discussing and building a common and agreed understanding to the following questions.

General considerations/questions:

- Who will be involved in each step of MERV? To what extent will it involve participatory monitoring? Do these parties have the capacity, or what capacity building and support will be required?
- What processes will be used to ensure transparency? How will governance be implemented?
- What are the objectives of monitoring of programs (for the basis for evaluation, reporting and verification)?
- To what extent will MERV focus on projects to demonstrate that they assist with the Partnership's overall progress towards its objectives?

Once these questions have been considered and answered, next steps will include developing appropriate indicators for use in monitoring and evaluation, and determining how these will be reported. Key considerations will include the factor of timing and the capacity of stakeholders to take part (i.e. the level of burden of involvement, the number of indicators - link strongly to the objectives).

While these are key considerations and integral to the successful, practical and useful MERV, it is also important to remember that following a Plan-Do-Check-Act model (Figure 3) encourages the use of MERV as a learning and management tool, with both projects and the MERV framework able to be altered if the 'Check' process suggests that changes will increase the value and success of the private sector projects, their associated activities, project and/or the MERV Framework.

Contact us:

**Chi Woo**

**Partner**

**KPMG**

+ 61 (2) 9295 3916

[chiwoo@kpmg.com.au](mailto:chiwoo@kpmg.com.au)

**Mark Spicer**

**Associate Director**

**KPMG**

+ 61 (2) 9335 8020

[markspicer@kpmg.com.au](mailto:markspicer@kpmg.com.au)

**Kylie Porter**

**Manager**

**KPMG**

+61 (3) 9288 5968

[kporter1@kpmg.com.au](mailto:kporter1@kpmg.com.au)

**Edwina Loxton, PhD**

**Senior Consultant**

**KPMG**

+61 (2) 99346 6373

[eloxton@kpmg.com.au](mailto:eloxton@kpmg.com.au)

[www.kpmg.com.au](http://www.kpmg.com.au)



The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation. The views and opinions contained in the presentation / paper are those of the author and do not necessarily represent the views and opinions of KPMG, an Australian partnership, part of the KPMG International network. The author disclaims all liability to any person or entity in respect to any consequences of anything done, or omitted to be done.