

Addressing the impact of large-scale oil palm plantations on orangutan conservation in Borneo

A spatial, legal and political economy analysis

Holly Jonas, Nicola K. Abram and Marc Ancrenaz



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Cover: Unflanged male orangutan in the forest canopy of the Lower Kinabatangan Wildlife Sanctuary. (Photo credit: HUTAN – Kinabatangan Orang-utan Conservation Programme)

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Acronyms and abbreviations

AMDAL	<i>Analisis Mengenai Dampak Lingkungan</i> (Environmental Impact Assessment)
ASEAN	Association of South East Asian Nations
BIT	Bilateral Investment Treaty
BRG	<i>Badan Restorasi Gambut</i> (Peat Restoration Agency)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EIA	Environmental Impact Assessment
ERC	Ecosystem Restoration Concession
FDI	Foreign Direct Investment
ha	Hectares
HCS	High Carbon Stock
HCV	High Conservation Value
IUCN	International Union for Conservation of Nature
Masl	Metres above sea level
REDD	Reducing Emissions from Deforestation and Forest Degradation
RSPO	Roundtable on Sustainable Palm Oil
SIA	Social Impact Assessment
UKL	<i>Upaya Pengelolaan Lingkungan Hidup</i> (Environmental Management Efforts)
UPL	<i>Upaya Pemantauan Lingkungan Hidup</i> (Environmental Monitoring Efforts)
USD	US Dollars

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About this report

This report synthesises key findings from a case study that aimed to assess and address the impact of large-scale oil palm plantations on orangutan conservation in Borneo. Along with another case study from Cameroon, it forms part of a project on *Assessing and addressing the impact of large-scale land acquisitions on ape conservation*, funded by the Arcus Foundation.

According to the terms of reference, the objectives of the two case studies were to:

- Build an evidence base on the geographic overlap between areas currently targeted for agribusiness investments and areas of importance for ape conservation;
- Identify the scale, trends and drivers of agribusiness investments;
- Identify the impact that agribusiness investments are having on ape conservation and build in-country engagement and awareness on this issue;
- Assess opportunities and constraints in legal frameworks and political economy; and
- Identify key issues generated by the interface between agribusiness investments and ape conservation in order to highlight lessons learned and help the Arcus Foundation develop a global strategy on ape conservation in the context of large-scale land acquisitions.

The Borneo case study produced the following research outputs, upon which this synthesis report is based:

- An analysis of the geographical overlap between Bornean orangutan habitat and areas demarcated for large-scale oil palm developments, as well as the extent to which orangutan habitat lies within existing protected areas in Kalimantan, Sarawak and Sabah (Abram *et al.*, 2017);
- An analysis of how legal frameworks and political economies interact with the oil palm industry and orangutan conservation in Malaysian and Indonesian Borneo (Jonas, 2017); and
- A fine-scale analysis of these issues in the Lower Kinabatangan region in eastern Sabah (Abram and Ancrenaz, 2017), which is globally renowned for its orangutan population, but has undergone significant forest loss to small- and large-scale oil palm plantations.

Executive summary

Palm oil is one of the most controversial yet ubiquitous agricultural commodities in the world, used in everyday products ranging from cooking oil and chocolate to toothpaste and soap. Over the past few decades, the palm oil industry has contributed significantly to the economic development of Indonesia and Malaysia, which together produce an estimated 85 to 90 per cent of global supply. However, the industry has also caused widespread deforestation of tropical ecosystems renowned for their extraordinary biodiversity, as well as numerous conflicts with indigenous peoples and local communities.

One of the most iconic species in Indonesia and Malaysia has inadvertently become a 'poster child' for tropical deforestation. Only found in the wild on the tri-national island of Borneo, the Bornean orangutan is now critically endangered. Its population has declined drastically since the 1960s due to habitat loss and fragmentation (primarily from logging and oil palm plantations), illegal hunting and fires. One of the main reasons is that the Bornean orangutan's preferred habitat – tropical lowland and peatland rainforests – is largely the same habitat targeted for agricultural development. The rapid expansion of the oil palm industry – particularly large-scale plantations but also government-mandated smallholder schemes – is thus one of the main causes of the loss and degradation of orangutan habitat in Borneo.

This report synthesises key findings from a case study that aimed to assess and address the impact of large-scale oil palm plantations on orangutan conservation in Borneo. The case study included: (a) an analysis of the geographical overlap between Bornean orangutan habitat, areas demarcated for large-scale oil palm developments, and existing protected areas in Indonesian and Malaysian Borneo; (b) an analysis of how legal frameworks and political economies interact with the oil palm industry and orangutan conservation; and (c) a fine-scale analysis of these issues in the Lower Kinabatangan region in eastern Sabah (Malaysian Borneo).

As a species, orangutans are fully protected under Indonesian and Malaysian law, but enforcement has proved grossly inadequate. In addition, state-protected areas cover just 25 per cent of remaining orangutan habitat in Borneo. Both species and area-based legal protections are thus insufficient for the long-term survival of orangutans. Furthermore, as of 2010, at least 18 per cent of remaining orangutan habitat in Borneo was located within large-scale oil palm estates that have not yet been fully 'developed'. It is extremely urgent to identify ways to secure the survival of orangutans in such areas; if nothing is done, most will be gone in the next ten years.

The rapid expansion of large-scale oil palm plantations in Indonesian and Malaysian Borneo is the result of a range of broader trends, drivers and enabling factors. At the international, regional and domestic levels, 'upstream' policies and investments

set the stage for large-scale oil palm, long before ground is broken. For example, mainstream narratives of 'development' and 'sustained economic growth' underpin a continued emphasis on large-scale plantations. The production-oriented approach to forests and land aims to maximise economic gain without considering most environmental costs. Investors, stock exchanges and financial institutions in Malaysia, Indonesia and Singapore are lagging behind global efforts to address the investment risks of forest-based commodities such as palm oil. Such policies fail to acknowledge the ecological limits to economic growth and inherent contradictions with sustainable development and environmental policies.

Once investments in large-scale oil palm are set in motion, the political economies and legal machinery in both Indonesia and Malaysia are ripe for illegalities and the exploitation of legal loopholes – at the expense of orangutan conservation. Productive use requirements in land laws mandate the conversion of most if not all of oil palm estates within certain time periods; if they fail to do so, companies risk losing their licences. Lack of enforcement of existing environmental impact assessment (EIA) regimes enables the continued expansion of oil palm in orangutan habitat and opportunities to further strengthen EIA regimes – such as by considering cumulative impacts – have not yet been taken. Provisions for penalties and environmental rehabilitation are insufficiently used in practice. This system allows, and even incentivises, a 'race to the bottom'.

If this 'business as usual' approach continues unabated, the window of opportunity to protect several key orangutan populations and their natural habitat in Borneo will close in the near future. However, a number of ambitious private sector commitments and regulatory improvements offer glimmers of hope. If these are strengthened, scaled up and embedded within broader legal and institutional frameworks, they could shift the trajectory of the palm oil industry in Borneo towards more responsible forms of production – including by protecting the significant areas of orangutan habitat within undeveloped oil palm estates.

This report focuses specifically on policy and legal levers to address the impact of large-scale oil palm on orangutans in Borneo. It identifies five overarching recommendations.

1. Protect and conserve orangutan habitat within existing oil palm estates and in areas likely to be allocated to oil palm

There is an urgent need for government officials and estate owners to work together with civil society organisations to protect and conserve key orangutan habitat within large-scale oil palm estates before it is further cleared and to ensure connectivity between fragmented populations. Strategies include: (a) governments using existing provisions for compulsory acquisition of land (key orangutan habitat) for public purpose and gazetting such habitat as protected areas; (b) developing new legal designations and financing mechanisms for protecting and conserving orangutan habitat that is likely to be converted to oil palm, both within oil palm

estates and in state land outside of protected areas; and (c) ensuring all existing protected areas that contain orangutan habitat are effectively protected in practice.

2. Strengthen, scale up and institutionalise ambitious sustainability and ‘zero deforestation’ commitments

Positive developments occurring in both Indonesia and Malaysian Borneo need to be strengthened, scaled up and institutionalised in order to transform the system that currently aids and abets the ‘business as usual’ approach to large-scale oil palm. This includes: (a) supporting jurisdictional approaches to palm oil certification in the state of Sabah (Malaysian Borneo) and the district of Seruyan (Indonesian Borneo); and (b) strengthening existing and adopting new moratoriums on new plantations in primary forests and peatlands.

3. Mainstream environmental considerations in oil palm investment and related economic and fiscal policies and laws

For companies, investors and financial institutions, a shift in mindset is required from a ‘race to the bottom’ to a ‘race to the top’. They should take multiple measures to build a critical mass of private sector actors ready and willing to institutionalise the business benefits of conservation and environmental protection. These include: (a) reframing palm oil as a ‘forest-risk’ commodity and adopting environmental due diligence and environmental risk management procedures; and (b) investing in jurisdictions and companies with progressive sustainability commitments. In addition, policy-makers and legislators in both countries should eliminate perverse incentives for large-scale oil palm plantations (including for the biofuel industry) in domestic investment and fiscal laws and economic policies.

4. Mainstream environmental considerations in land use planning and allocation, licensing and impact assessments for new oil palm developments

Policymakers and legislators in Indonesia and Malaysia should address a number of bottlenecks and constraints in laws that regulate land use planning and allocation, licensing and impact assessments for large-scale oil palm in Borneo. These include: (a) reforming productive use requirements and Land Capability Classification systems for agricultural land allocation; (b) addressing loopholes and lacunae in company, plantation and licensing laws to ensure coherence with environmental laws; and (c) addressing loopholes in EIA regimes such as the ‘splitting’ of large areas under subsidiaries or individual titles to avoid triggering a mandatory EIA.

5. Strengthen and expand mechanisms for enforcement and environmental mitigation in new and existing oil palm estates

No matter how strong legal protections may be on paper, some degree of non-compliance is almost inevitable. It is therefore important to implement strong measures to support enforcement and mitigate environmental damage, particularly

the clearance of orangutan habitat, including: (a) implementing existing measures for environmental protection, restoration and rehabilitation; and (b) investigating and prosecuting criminal activity and illegalities in the oil palm industry, including in financing and licensing procedures.

1. Introduction

1.1 Context

Indonesia and Malaysia are two of the world's most mega-diverse countries. They are also the only two countries with populations of wild orangutan (*Pongo spp.*), an arboreal forest-dwelling great ape found only on the islands of Sumatra and Borneo (Wich *et al.*, 2008; Wich *et al.*, 2012). The island of Borneo – which has the largest population of wild orangutans – is politically divided into several national and sub-national jurisdictions, including the five Indonesian provinces of West, Central, South, East and North Kalimantan (collectively referred to as 'Kalimantan'), the Malaysian states of Sabah and Sarawak and the Sultanate (nation) of Brunei.

In 2016, the International Union for Conservation of Nature (IUCN) reclassified the Bornean orangutan as '*Critically Endangered*' (it had previously been classed as '*Endangered*') due to the fact its population had fallen by more than 75 per cent over three generations (Ancrenaz *et al.*, 2016a). The decline was caused by a combination of harassment, poaching and killing – including in retaliation for perceived crop damage, for the pet and wildlife trade and for consumption – and the widespread destruction, degradation and fragmentation of orangutan habitat (Ancrenaz *et al.*, 2016a; Ancrenaz *et al.*, 2016b).

Past and current legal protections designed to mitigate these threats have proved grossly inadequate, as is evident from the rapid pace of habitat loss. Borneo's forest cover fell from 75 per cent in the 1970s to about 54 per cent in 2010 (Gaveau *et al.*, 2014). This clearance was driven primarily by agricultural development associated with timber exploitation and more recently monoculture plantations – particularly oil palm (Ancrenaz *et al.*, 2016a; Ancrenaz *et al.*, 2016b).

The political and economic drivers of deforestation in Borneo have evolved over time, with commodity booms being influenced by, and in turn influencing, policies and laws at different levels in Malaysia and Indonesia (Ross, 2012). In more recent years, oil palm has assumed an increasingly central role. Native to West Africa, the oil palm tree (*Elaeis guineensis*) was introduced to Southeast Asia in the 1800s to supply European markets with palm oil, which is currently used in thousands of food, household and industrial products, including many processed snacks, soap and cosmetics. Over the past few decades, the palm oil industry has become one of the most important economic sectors in the region. Indonesia and Malaysia are by far the world's leading producers, collectively holding 78 per cent of all planted oil palm (FAO, 2012).

The expansion of oil palm has had a significant impact on orangutan habitat – primarily tropical lowland and peatland rainforests below 500 metres above sea level (masl) (Wich *et al.*, 2012). These forests are also prime planting areas for oil palm due to their fertile soils and flat topography, which support prolific yields

and high economic returns (Abram *et al.*, 2014). In Malaysian Borneo (Sabah and Sarawak) and Indonesian Borneo (Kalimantan), around 6.5 million hectares (ha) of lowland forest had been converted to oil palm by 2010 (Gaveau *et al.*, 2014).

The conversion of forests is likely to continue in line with national and regional economic growth agendas, with the area under oil palm in Indonesia forecast to double, and Malaysia likely to acquire an additional one million ha. Scientists predict that if the current trends of habitat loss and orangutan harassment, poaching and killing continue unabated, then only 14 per cent of the Bornean orangutan's 1973 population will remain by the year 2025 and many populations will be lost entirely (Meijaard *et al.*, 2012). These projections could be exacerbated by extreme and unpredictable events like the devastating fires in 2014–2015, which were caused in part by forest clearing for oil palm plantations and were estimated to have threatened at least one-third of the remaining wild orangutan population (Vidal, 2015).

A range of strategies have emerged to attempt to mitigate the impact of large-scale oil palm, from consumer awareness campaigns and legislation, to regulatory frameworks and private sector commitments. These actions – among many others – provide some hope for the future of the Bornean orangutan in the context of large-scale oil palm. However, there is an urgent need to further strengthen, scale up and embed such initiatives within broader legal and institutional frameworks in order to shift the current trajectory of the oil palm industry away from 'business as usual' and toward more responsible forms of production.

1.2 Objectives and scope of the report

This synthesis report is directed towards policymakers, industry experts and conservation practitioners in Indonesian and Malaysian Borneo. Using the latest rigorous scientific and policy analysis, it aims to strengthen the evidence base and increase decision-makers' understanding and awareness of the complex factors operating at the nexus of oil palm and orangutan conservation. It is intended to contribute to ongoing efforts to improve policies, laws and programmes that can help prevent and mitigate the impacts of large-scale oil palm developments on orangutan conservation in Borneo.

The specific objectives of the synthesis report are to:

- Assess the current status of the Bornean orangutan (including population, distribution and coverage under protected areas), using the best available information;
- Assess the geographic overlap with and impacts of existing and planned large-scale oil palm plantations on orangutan habitat in Borneo;
- Identify the broader trends, underlying drivers and enabling factors for investments in large-scale oil palm in Borneo; and

- Identify constraints and opportunities in the legal frameworks and political economies of Indonesian and Malaysian Borneo to address the impacts of large-scale oil palm developments on the Bornean orangutan.

At least four considerations limited the scope of the Borneo case study research and this synthesis report.

First, the research focused specifically on orangutans. Borneo is also home to several species of gibbons, which are generally considered 'lesser apes' (in contrast with orangutans and other species of great apes). However, at the time of research, the data available on gibbon populations and distribution in Borneo was not sufficient for the level of detail sought for this analysis. Orangutans were chosen due to the extent and reliability of existing data and the potential for updating it in light of the most recent research.

Second, the research focused geographically on orangutans in Indonesian Borneo (Kalimantan) and Malaysian Borneo (Sabah and Sarawak). The Sultanate (nation) of Brunei was not included since it does not house any wild orangutan populations.

Third, the research focused specifically on the oil palm industry since it has contributed significantly to the decline in orangutan habitat and populations in the past few decades. It should be underscored that oil palm is not the only industry responsible; other major contributors include logging (particularly before the oil palm boom), pulp and paper (which could become a major agro-industrial driver of deforestation in years to come), mining (see Arcus Foundation, 2014) and infrastructure (see Arcus Foundation, in press). Additional pressures on orangutans include forest conversion by smallholders, which represents at least 40 per cent of the total forest conversion and which is not considered in this report. Hunting and poaching for bushmeat and the illegal pet trade is also a major threat, at least as important as industrial development. However, given the existing multi-faceted nature and complexity of the research – which was always intended to focus on agribusiness – the scope was restricted to oil palm. Some of these other industries are briefly mentioned in certain sections of this report to provide broader context and to reiterate the point that oil palm is just one of many industrial and other causes of the decline of the Bornean orangutan.

Finally, the research was always intended to focus on large-scale plantations as a major factor behind the decline in orangutan habitat and populations. However, it should be emphasised that oil palm smallholdings – particularly those encouraged by extensive government-mandated schemes in both Indonesian and Malaysian Borneo – have also made a significant collective contribution to these declines. Accordingly, the 'zoomed in' case study on the Lower Kinabatangan in eastern Sabah (Malaysian Borneo) included an analysis of oil palm smallholdings as well as large-scale plantations. Elsewhere, the research focuses on large-scale plantations. A more complete analysis of the impacts of all oil palm developments in Borneo would necessarily include both large-scale plantations and smallholdings, among other arrangements.

1.3 Research methods

This section briefly presents the research methodologies used to produce the three main outputs (see “About this report”), which provided the basis for this synthesis report.

1.3.1 Mapping and inventory procedures across Borneo

Orangutan population estimates and distribution in Borneo

For Kalimantan and Sarawak, the analysis used orangutan distribution data developed by Wich *et al.* (2012). For Sabah, a separate distribution layer was developed for the subspecies *Pongo pygmaeus morio* (see Abram *et al.*, 2017). Orangutan habitat in protected areas was measured by overlaying this species distribution with protected area data. The protected area data for Kalimantan and Sarawak were derived from Wich *et al.* (2012) and for Sabah, from the Sabah Forestry Department (dated July 2013). The types of protected areas in Borneo included national parks, nature reserves, wildlife sanctuaries and game reserves, recreational parks, virgin jungle reserves and Protection Forests.¹

Agribusiness concessions in orangutan habitat

Up-to-date government data on land titles or concessions were publicly unavailable at the time of this analysis. This was largely due to the sensitivities surrounding land-use allocation for agriculture, especially when it involves forests being converted to oil palm, or disputes between communities and oil palm estates. For Kalimantan and Sarawak, existing data from Wich *et al.* (2012) was used. For Sabah, we further developed some digitised estate information that was already available by using cadastral maps to work out the boundaries of oil palm estates, then geo-referenced and digitised them. Although these maps provided only partial coverage (about 50 to 60 per cent of Sabah), much of their area fell within Sabah’s oil palm belt. Finally, orangutan distributions were overlaid with all this oil palm estate data to identify those oil palm ‘estates’ (referred to as ‘concessions’ in Indonesia and ‘land titles’ in Malaysia) that contained orangutan habitat.

Inventory procedures

A number of oil palm estates were selected in each region to feature in the inventory section of this study, which was included to provide a more granular picture of these concessions. The inventory documents oil palm estates in terms of their

¹ In Indonesia, Protection Forests are one of the three categories of forests under the *Forestry Law* (No. 41/1999). They cannot be opened for oil palm plantation development but use of forest products and environmental services is allowed. In Sabah, Protection Forests are the first of six classes of Forest Reserves that can be gazetted under the *Forest Enactment 1968*. In Sarawak, Protected Forests are the second of three types of forests that can be gazetted under the *Forests Ordinance 2015*. In both states, very few activities – including industrial – are allowed in these designations.

size, location and the date their land was acquired; investor details (name, country of origin, public or private and so on); stage of agricultural investment (timeline); proposed agricultural activity; land ownership; status of impact assessments; and their total investment. Google searches were used to obtain company annual reports and other relevant documentation.

For Kalimantan, 32 estates were selected, including some in the Kapuas Hulu region (West Kalimantan and near the Sarawak border), which is an important transboundary area for orangutan. The remaining estates were chosen on the basis of the size of the known orangutan habitat within their boundaries. For Sarawak, 15 estates were selected, representing a nearly comprehensive list of all known estates with orangutan habitat. For Sabah, 119 estates were included in the inventory, 55 of which had known orangutan habitat. For more details on the methods and resources used for the inventory procedure, see Abram *et al.* (2017).

In 2015, fires ravaged two million ha of forest in Indonesia (Meijaard, 2015b). Fire occurrence data for Borneo (from the Global Forest Watch “Southeast Asia NOAA-18 active fires”) was used and overlaid with orangutan distributions in protected areas and oil palm estates to assess the impact of the fires on the remaining orangutan habitat.

1.3.2 Case study of the Lower Kinabatangan, Sabah (Malaysian Borneo)

The orangutan population living in the Lower Kinabatangan floodplain is the best-documented population in Borneo (Bruford *et al.*, 2010). Estimates of the population size were derived from aerial and ground surveys undertaken in 2001 (Ancrenaz *et al.*, 2004), 2006/2007 and 2014. We were able to estimate forest loss using forest extent data for the years 1995/96, 2005/06 and 2014; see Abram and Ancrenaz (2017).

As oil palm is intolerant to waterlogging and seasonal or tidal inundations, floodplains vary in their suitability for oil palm cultivation. We used available data to reclassify various types of lowland forest (mangrove, seasonally flooded or limestone) according to the suitability of those areas for oil palm. We then overlaid these findings with land title data to show that some estates had been located in areas entirely unsuitable for palm oil production; for more detail, see Abram and Ancrenaz (2017).

1.3.3 Methodology of the legal and political economy analysis

Our legal and political economy research included analyses of relevant policies and legislation, peer-reviewed journal articles, online news coverage of recent developments, and reports produced by civil society, the private sector and intergovernmental organisations, as well as semi-structured interviews. The analytical framework was based on the emerging theory of ‘ecology of law’ (Capra and Mattei, 2015). Rather than assessing the weight or effectiveness

of any individual law, this framework conceptualises a 'legal ecosystem' with multiple areas of law (including environmental, economic and investment) operating within and across multiple levels of law (including sub-national, national, regional and international). This legal ecosystem is shaped by complex and multi-faceted interactions between political, legal, institutional, economic, social and environmental factors. Overall, the research identified a range of opportunities and constraints – including new and innovative approaches – for the conservation of orangutans and their habitats in the context of oil palm throughout this legal ecosystem.

1.3.4 Methodological challenges

In addition to the sheer volume and complexity of the information to be obtained and analysed, each of the three main areas of the research (namely mapping, inventory and legal and political economy analysis) posed distinct methodological challenges.

In terms of mapping, it was difficult to access information on land titles, particularly in Malaysia. For the inventory research, finding reliable information presented the biggest of the many challenges in data collection. It was particularly difficult to obtain online annual company reports and reports on important procedures such as impact assessments (for more detail, see Abram *et al.*, 2017). Furthermore, our task was complicated by the many inconsistencies between the information provided by companies and sources in the public domain. For the legal analysis, it was difficult to obtain information on certain laws and policies since some were not available online and others were only available in hard copy upon payment. In Indonesia, there is no central repository of legislation across ministries and levels of government. These kinds of practical difficulties in obtaining information about legal developments add to the uncertainties surrounding the current state of the law and sharpen concerns over the level of transparency and accountability in land use planning and administration.

1.4 Structure of the report

Following on from this introduction, Section 2 assesses the current status of orangutans and the impact of large-scale oil palm on orangutan conservation in Borneo. This was done by using a spatial and inventory analysis of orangutan populations to identify overlaps with large-scale oil palm estates and protected areas, and to assess the impact of the 2014–2015 fires. Section 3 assesses the underlying drivers, enabling factors and broader investment trends fuelling the expansion of large-scale oil palm in Borneo, including poor land use allocation policies, productive use requirements in land laws, and the insufficient implementation of impact assessment regimes.

Section 4 identifies policy and legal mechanisms to address the impact of large-scale oil palm on orangutan conservation in Borneo, including in 'upstream'

investment, land use planning and allocation, environmental regulations and innovative approaches to habitat restoration and private sector accountability. Finally, Section 5 summarises the conclusions and recommends policy and legal levers to mitigate the impact of large-scale oil palm developments on orangutans in Borneo.

2. Oil palm's impact on orangutans in Borneo

The numbers are clear: the population and distribution of the Bornean orangutan is shrinking because of harassment, poaching and killing and forest loss (Ancrenaz *et al.*, 2016a; Ancrenaz *et al.*, 2016b). Across Borneo, the main cause of orangutan habitat loss and degradation is legal and illegal deforestation for industrial and small-scale activities, particularly logging, oil palm, pulp and paper and mining. Focusing on oil palm, although significant areas of orangutan habitat remain standing in large-scale estates that have yet to be fully 'developed', time is running out (Meijaard and Ancranaz, 2017). Fires started to clear peatland and forests for oil palm – for both small- and large-scale developments – pose an increasing threat. In the face of such widespread pressures, the current protected area system – which covers only a portion of orangutan habitat and populations in Borneo – will not be enough to secure the orangutan's long-term survival across most of its range.

2.1 Bornean orangutan numbers are declining

Since the 1960s and 70s, the Bornean orangutan population has declined by between 56 and 71 per cent, with the population estimated to be around 45,000–69,000 individuals in 2008 (Table 1). The severity of the situation was underscored in 2016 when the IUCN Red List reclassified the species from 'endangered' to 'critically endangered,' citing habitat loss and fragmentation, illegal hunting and fires as the primary causes of the population declines (Ancrenaz *et al.*, 2016a).

Temporal direct population estimates are only available for Sabah and show that orangutan numbers have declined from 25,000 individuals in 1987 to around 10,000 in 2011 in this state alone. The Lower Kinabatangan in eastern Sabah is one of the only regions where orangutan populations have been systematically monitored over the past 50 years or so. In the early 1960s, the population was estimated to number more than 4,000 individuals (Yoshida, 1964). Surveys conducted by the NGO Hutan estimated the orangutan population to be around 1,125 individuals in the Lower Kinabatangan in 2001 (Ancrenaz *et al.*, 2004), declining to 785 individuals in repeated 2015 surveys. This 30 per cent decline since 2001 has largely been due to habitat loss.

Although the orangutan is a well-studied species, its known distribution was not accurately assessed until 2010 (Wich *et al.*, 2012). Prior to this, distribution estimates were based on non-georeferenced data from the 1990s and assumptions that areas of lowland forests (below 500 masl) were suitable; see Wich *et al.* (2008). Although it is not known exactly how much orangutan habitat has been lost, we know that lowland forest clearance has been extensive in Borneo over the past few decades; see Figure 1 (Gaveau *et al.*, 2014).

Table 1. Orangutan population estimates and distribution estimates (for 2010) within the main political boundaries, and within protected areas (PAs), oil palm estates and other land use types.

Species/sub-species	Orangutan population estimate	Estimate year	Orangutan distribution in 2010 (ha)	Orangutan distribution in PAs (ha)	Orangutan distribution in known oil palm estates (ha)	Orangutan distribution outside of oil palm estates and PAs (ha)
Sabah <i>P. p. morio</i>	10,000 ^a (11,000 ^b ; 25,000 ^c)	2011 (2005; 1987)	2,772,939	1,023,681 (37%)	19,474 (1%)	1,729,784 (62%)
Sarawak <i>P. p. pygmaeus</i>	1,143–1,761 ^d	2002	763,538	217,847 (29%)	47,253 (6%)	498,438 (65%)
Kalimantan <i>P. p. pygmaeus</i> / <i>P. p. wurmbi</i> / <i>P. p. morio</i>	38,330–40,000 ^e	2013	12,804,830	2,793,663 (22%)	2,948,329 (23%)	7,062,838 (55%)
Borneo	45,000–69,000 ^d (156,000 ^e)	2008 (1960/1970)	16,341,307	4,035,191 (25%)	3,015,056 (18%)	9,291,060 (57%)

^a Acrenaz et al. (2010)

^b Acrenaz et al. (2005)

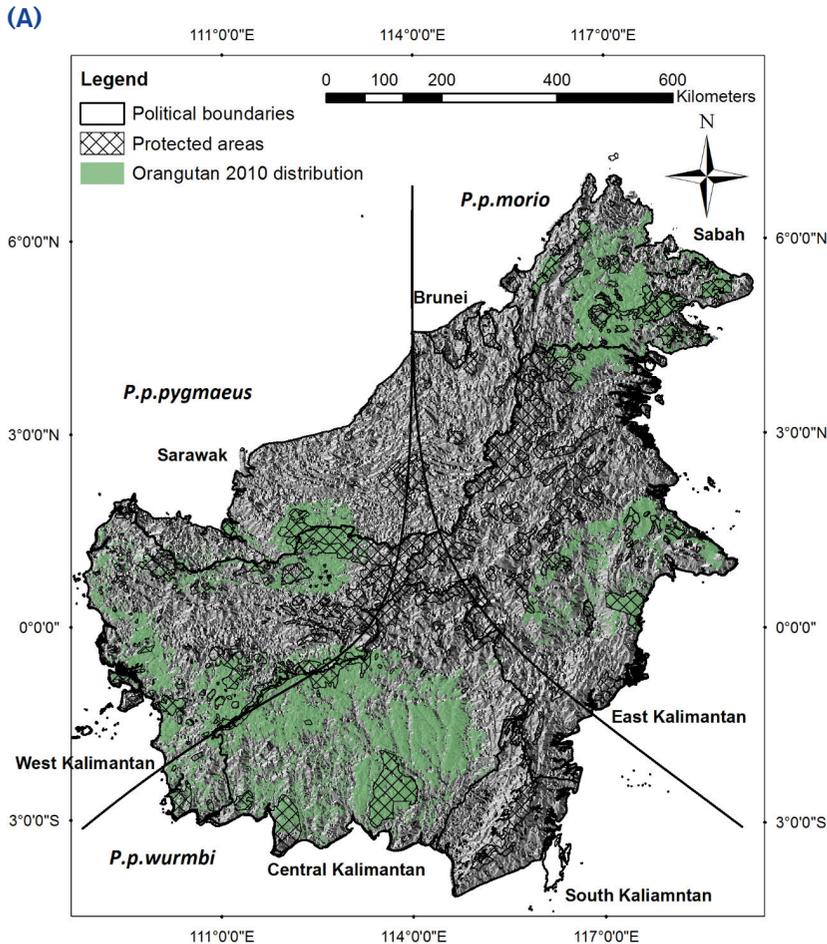
^c Payne (1987)

^d Wich et al. (2008)

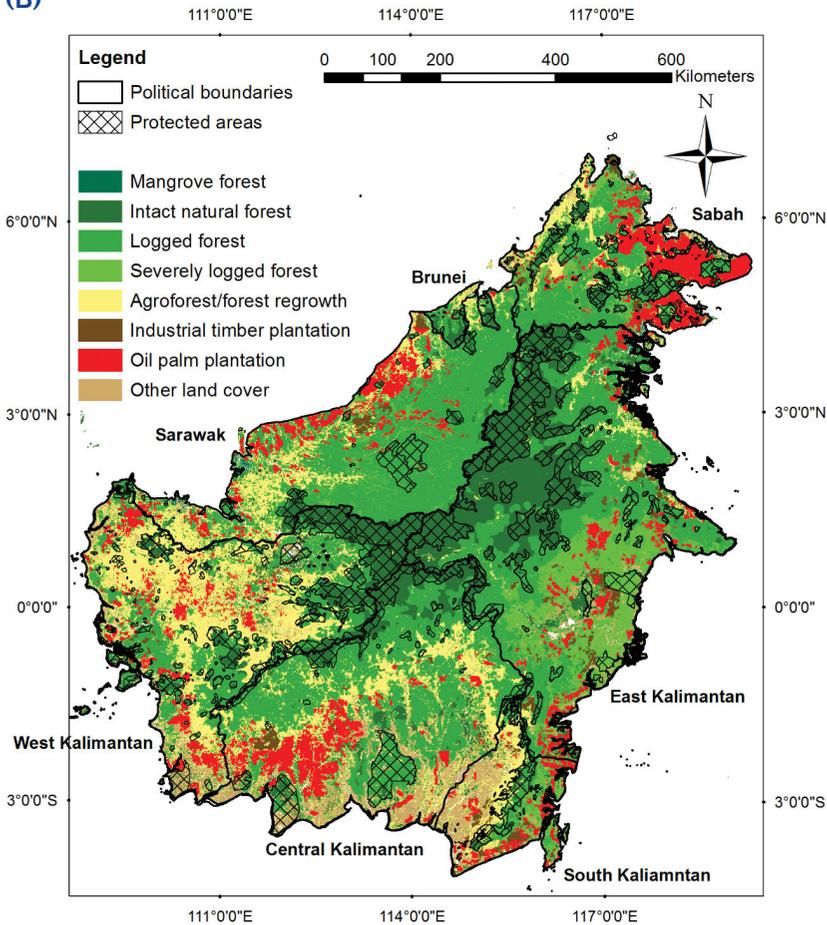
^e Singleton et al. (2004)

In 2010, it was estimated that orangutan distribution extended across 22 per cent of Borneo’s land mass (16.3 million ha), spanning 78 per cent (12.8 million ha) of orangutan distribution in Kalimantan, 17 per cent in Sabah, and five per cent in Sarawak (Figure 1A). Orangutan habitat is known to have decreased throughout all orangutan range areas in Borneo, especially over the past couple of decades (Figure 1B). A previous study estimated that 29 per cent of Borneo’s orangutan habitat was within natural forests exploited for timber, 25 per cent was in undeveloped oil palm and industrial tree plantations, and 24 per cent in areas of uncertain land use (Wich *et al.*, 2012).

Figure 1. Bornean orangutan distribution (2010) (green) dissected into the three sub-species overlaid on elevation data (A); and land use and land cover for 2010 throughout Borneo, overlaid with the protected area network and political boundaries (B) (Gaveau *et al.*, 2014).



(B)



As more orangutan habitat is degraded, fragmented and deforested, these great apes come into closer contact with people and are thus more susceptible to poaching, killing and new health risks such as emerging diseases. For example, in a social survey undertaken in orangutan range areas in Borneo in more than 500 villages (about eight per cent of all villages on the island), 750–1,800 orangutans were reported to have been killed in the year prior to these interviews (Davis *et al.*, 2013). In the same social survey, results showed that communities believed that orangutan populations had declined and will continue to do so or even become locally extinct across much of their range in Kalimantan over the next decade, with few regions predicted to support stable populations (Abram *et al.*, 2015). As a consequence of habitat loss and hunting, the overall number of orangutans is expected to decline by 86 per cent between 1973 and 2025, with many populations being lost if current threats are not abated (Meijaard *et al.*, 2012).

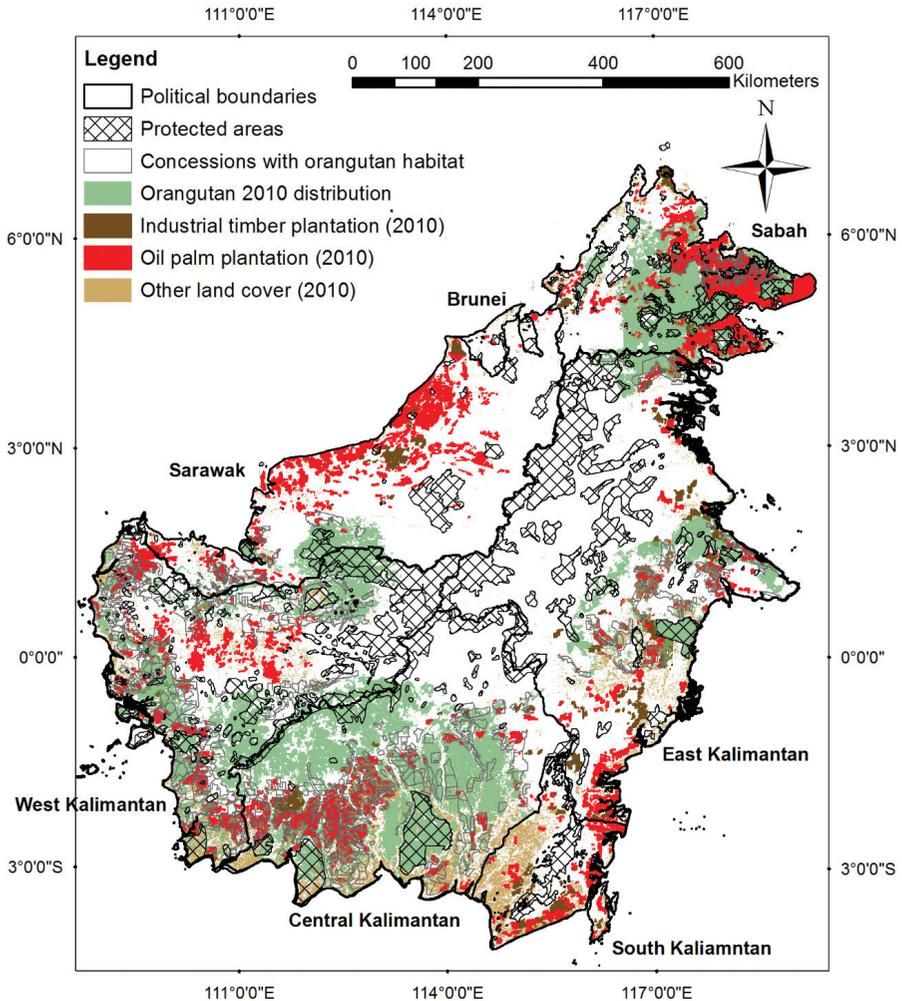
2.2 Oil palm is one of the main causes of deforestation – and large areas of orangutan habitat overlap ‘undeveloped’ estates

Although nearly half of Borneo is still covered with forests, the island has already experienced much forest loss from large-scale industrial activities – particularly logging, oil palm and monoculture tree plantations, and mining – as well as smallholder agriculture. This is especially the case for lowland regions (less than 500 masl) that favour human settlement and are suited for agriculture. In 1973, 76 per cent of Borneo’s land surface was under forest, but from 1973 to 2010, forests declined by 30 per cent (Gaveau *et al.*, 2014).

The rapid expansion of the oil palm industry in the past few decades – particularly large-scale plantations and government-mandated smallholder schemes – is one of the main causes of the loss and degradation of orangutan habitat in Borneo. This expansion has largely occurred in lowland areas (less than 500 masl) that used to be prime orangutan habitat. According to land use and land cover data for 2010, Borneo had a total area of 6.5 million ha of planted oil palm (Gaveau *et al.*, 2014); see Figure 2. Much of this area would have been orangutan habitat before conversion. Herein lies a major land use issue: lowland forested areas are prime habitats for both orangutan and large-scale oil palm plantations due to their lower and flatter topography and typically more fertile soils (Curran, 2004; Gaveau *et al.*, 2009).

As of 2010, a total of at least three million ha (or 18 per cent) of the remaining orangutan habitat in Borneo occurred in known oil palm estates. This figure is certainly an underestimate since estate data were out-of-date for all three regions (Kalimantan, Sabah and Sarawak). Of these three million ha, nearly 98 per cent (circa 2.94 million ha) was located in 620 estates in Kalimantan. These licenced estates were very large, with over half (357) being greater than 10,000 ha, and one reaching over 121,000 (Figure 2). The vast majority were not certified by the Roundtable on Sustainable Palm Oil (RSPO) (see Box 1). A recent report showed that about 10,000 orangutans were still living in undeveloped estates, the vast majority of which were not RSPO-certified (Meijaard *et al.*, 2017b). It is therefore extremely urgent to identify ways to secure their survival in areas allocated to oil palm development. If nothing is done, most of them will be gone in the next ten years.

Figure 2. Orangutan distribution (2010) in Borneo overlaid with protected area information (hatched) and oil palm estates with orangutan habitat within them, shown on a base map of 2010 land cover classes and protected areas (cross hatch).



Box 1. A brief introduction to the Roundtable on Sustainable Palm Oil (RSPO)

The Roundtable on Sustainable Palm Oil (RSPO) is a not-for-profit association with more than 3,000 members from seven sectors of the palm oil industry, including producers, banks and investors, retailers and civil society organisations. It has developed a voluntary standard with eight principles and related criteria with which companies must comply in order to have their palm oil certified as 'sustainable'. Among other things, the standard requires independent environmental impact assessments (EIAs), social impact assessments (SIAs) and assessments of high conservation value (HCV) areas to be conducted prior to establishing new plantings or expanding existing ones. Although there are many sound critiques of RSPO and of commodity certification schemes more broadly, when properly implemented, the RSPO standard can help minimise negative environmental and social impacts of palm oil production. Approximately 21 per cent of current global palm oil supply is RSPO-certified.

Inventory of selected oil palm estates

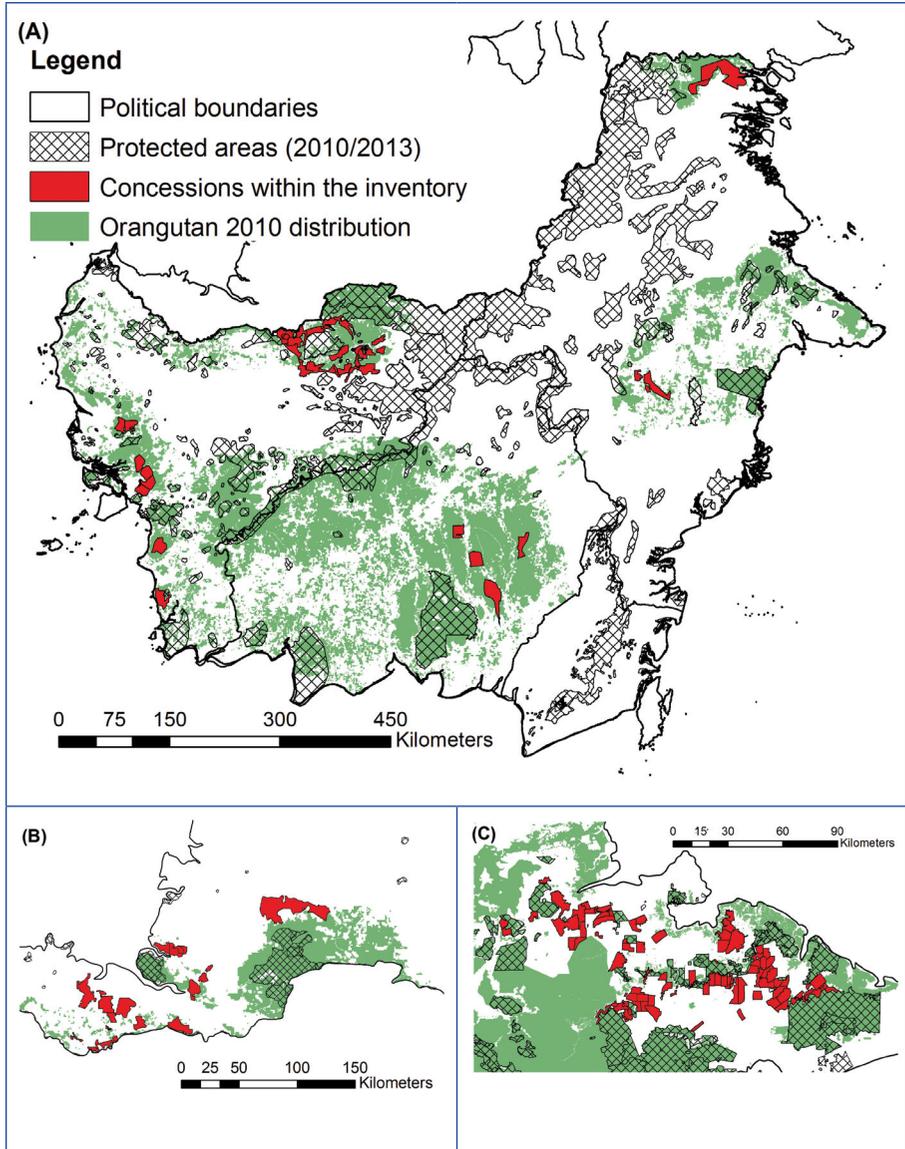
As explained in the introduction, the Borneo case study included an inventory of a number of oil palm estates in each region in order to assess the overlap between orangutan habitat and existing and planned large-scale oil palm developments, and the development status of those estates. The inventory analysis considered details such as: estate size; date and location of land acquisition; investor details; stage of agricultural investment; proposed agricultural activity; land ownership; status of impact assessments and investment value. The inventory included a sample of oil palm estates in Kalimantan (32 estates), Sabah (119 estates), and Sarawak (15 estates, encompassing all those with known orangutan habitat); see Figure 3. Key findings are summarised in the following three sub-sections.

Intensive oil palm concessions in Sabah



(Photo credit: HUTAN – KOCP)

Figure 3. Location of concessions in the inventory (red), along with orangutan distribution in 2010 (green) and protected areas (cross hatch) within Kalimantan ($n=32$) (A); Sarawak ($n=15$) (B); and Sabah (total $n=119$; of those with known orangutan habitat $n=55$) (C).



Inventory of selected oil palm estates: licensing years and proportion of orangutan habitat

The inventory data for Kalimantan and in Sarawak showed that licensing was typically much more recent (after the year 2000) than in Sabah, where land titles were largely granted before 1999. The more recent licensing of titles in Kalimantan, and the large extent of average estate sizes, means that significant numbers of orangutan still inhabit many of Kalimantan's oil palm estates (Meijaard *et al.*, 2017b).

For example, 56 per cent of estates sampled in Kalimantan had from 76 to 100 per cent of their concessions classified as orangutan habitat (Table 2). In Sabah and Sarawak, most estates had less than 25 per cent orangutan habitat within their boundaries (Table 2), likely as a result of estates being licenced long before those in Kalimantan. Despite the lower proportion of orangutan habitat in estates in Sabah and Sarawak (relative to Kalimantan), these estates likely retain a critical value as wildlife corridors between protected areas and refuge sites for orangutan.

Table 2. Estimated proportion (% classes) of orangutan habitat in 2010 within estates considered in the inventory in Kalimantan, Sarawak and Sabah.

Proportion of estates with orangutan habitat	Kalimantan (n=32)	Sarawak (n=15)	Sabah (n=55)
0.1%–25%	4 (13%)	12 (80%)	54 (98%)
26%–50%	9 (28%)	1 (7%)	1 (2%)
51%–75%	1 (3%)	2 (13%)	0
76%–100%	18 (56%)	0	0

Inventory of select oil palm estates: identified HCV areas in company documentation

Despite all inventory estates in Kalimantan having orangutan habitat (identified from the spatial analyses), only 18 of the 32 estates had identified HCV areas – which orangutan habitat constitutes – within their publically available company documentation. The other 14 either did not declare HCV areas or this level of information was publically unavailable. In Sarawak, no HCVs were identified within the documents for any of the 15 estates reviewed. In Sabah, information on HCVs was easier to find for estates that were RSPO members (100 of the 119). As a result, of the 119 estates reviewed in Sabah, 61 had identified at least one type of HCV in their company documents (for example, annual reports) and stated whether these HCV areas were clearly marked or not. For example, five of 26 estates had identified patches of forest, swamps, mangroves and river buffer zones, and acknowledged their proximity to Class VI Virgin Jungle Reserves (on the latter, see Sections 2.3 and 4.5 on protected areas).

In Sabah, HCVs identified in companies' annual reports included buffer zones, isolated patches of forest, swamps, slopes greater than 25 degrees, water catchment areas, and rehabilitation areas for wildlife, peatland and mangroves. In Kalimantan, HCVs only included peatland or peat swamp forest, watersheds, customary land, and primary, secondary or protected forest.

Although the information on HCV identification in estates was from a sample number only, it is clear that there is a woeful lack of documentation of HCVs prevalent within estate boundaries, especially for non-RSPO members. Such inadequate accounting means it is very difficult to establish accountability for the removal and destruction of HCVs, including orangutan habitat – a common criticism of the oil palm industry.

Inventory of select oil palm estates: status of impact assessments

In addition to the above findings, the inventory also reviewed the status of oil palm estates' EIAs. Typically, estates that had had their EIAs approved had also had SIAs approved. However, EIA consultants were generally appointed by the estates themselves, raising questions over the degree of impartiality in this important regulatory process. For many other estates, no information on EIAs or SIAs was publicly available. This kind of lack of information facilitates corruption, and a company's level of transparency should be considered when assessing its credibility and investment risk.

For Kalimantan, only 20 estates out of 32 had received approvals for both their EIAs and SIAs, while three had not received approvals for either. No information was available for the remaining nine estates.

For Sarawak, information on EIA reports was mostly unavailable despite EIAs being a legal requirement for estates above a certain size (see Section 3.6). The research identified only one case of an EIA being approved. For SIAs, no official documents were found to show that any had been approved. Reports of disputed cases on local news sites and blogs implied that companies, even if they might have conducted SIAs, were not fully assessing or publicly disclosing social impacts. This lack of transparency and accountability is often a feature of joint venture schemes or partnerships that lack stringent disclosure requirements and take advantage of land under Native Title or are claimed under Native Customary Rights (Jonas, 2017).

In Sabah, of the 119 land titles analysed, 77 received EIA approval and 81 had approved SIAs. The high proportion of RSPO members among the estates in Sabah is likely to be the reason why information on EIAs and SIAs was more readily available. In addition, some annual reports acknowledged several complaints from nearby customary landowners about plantation operations overlapping with their land, although disputes were simply noted and not described in detail.

The legal frameworks for impact assessments in all three regions are considered in more detail in Section 3.6.

2.3 Limits of the current protected area system for the long-term survival of the Bornean orangutan

Protected areas remain a cornerstone of biodiversity conservation. Although no study has quantified the effectiveness of protected areas for orangutans, it seems safe to assume that they serve to discourage illegal activities such as deforestation, logging and hunting. This should reduce the risks of human-orangutan conflict – at least more so than if these areas had no protected status at all. Additionally, protected areas are less prone than other types of state land to being de-gazetted for oil palm and may therefore provide a more stable long-term habitat. As a result, protected areas form important strongholds for orangutan and countless other species (Wich *et al.*, 2012).

However, forests gazetted for protection are largely found in remote and steep ranges that have limited economic value and are unsuitable for industrial agriculture due to their high elevations, steep terrain and inaccessibility. These rugged regions are also often uninhabited by orangutans, which are lowland forest specialists (see Figure 1 in Section 2.1).

It is important to note that only 25 per cent (16.3 million ha) of Bornean orangutan distribution in 2010 was within some type of protected area (see Figure 1 left-hand side). This proportion is grossly inadequate for the long-term survival of this species, especially given the high proportion of orangutan habitat found within forests intended to be converted to other types of land uses (as discussed in Section 2.2) and the insufficient connectivity between remaining natural forests. Overall, the current protection of orangutan habitat has proven inadequate to curb population loss in the face of oil palm development. With growing pressures on land from both smallholders and large-scale estates, less state land is available for governments to establish new or expand existing protected areas.

However, this situation could change very quickly with sufficient political will. In Sabah, for example, only 37 per cent of the total number of orangutans lived in protected forests as of early 2010 (see Table 1 in Section 2.1). As of early 2017, it was likely that more than 70 per cent of the state's orangutan population was to be found within its protected area network as a result of the recent gazettement of protected areas that were prime orangutan habitat (see Section 4.5).

Data on orangutan distribution and protected area coverage of protected areas in Kalimantan, Sarawak and Sabah are considered in turn below. The legal and political economy analysis of protected areas in the three regions is included in Section 4.5.

Indonesian Borneo: Kalimantan

In Kalimantan, all forest areas with protection and/or conservation status are on state-owned land. The *Act Concerning Conservation of Living Resources and Their Ecosystems (No. 5/1990)* and the *Forestry Law (No. 41/1999)* provide the main legal frameworks governing these protected areas (see Section 4.5).

Of the estimated 12.8 million ha of orangutan habitat in Kalimantan, only 22 per cent (around 2,793,500 ha) was located within Kalimantan's 2010 protected area network (see Figure 1 in Section 2.1 and Figure 4). The largest populations living in protected areas include Sebangau National Park and Tanjung Puting National Park, with populations of around 6,900 and 6,000 orangutans, respectively (Wich *et al.*, 2008) and Betung Kerihun and Kutai National Parks (Table 3). Because of its size and fragmentation, the current network of protected orangutan habitat in Kalimantan is insufficient to secure the long-term viability of this species. Indeed, these protected forests are widely dispersed within Kalimantan with significant unprotected orangutan habitat between them, fragmenting protected populations and preventing adequate genetic exchange (Bruford *et al.*, 2010).

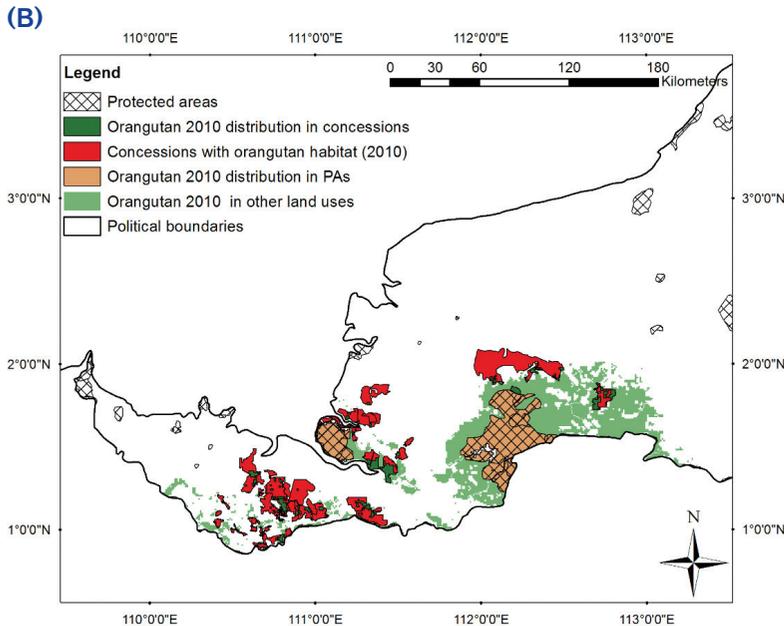
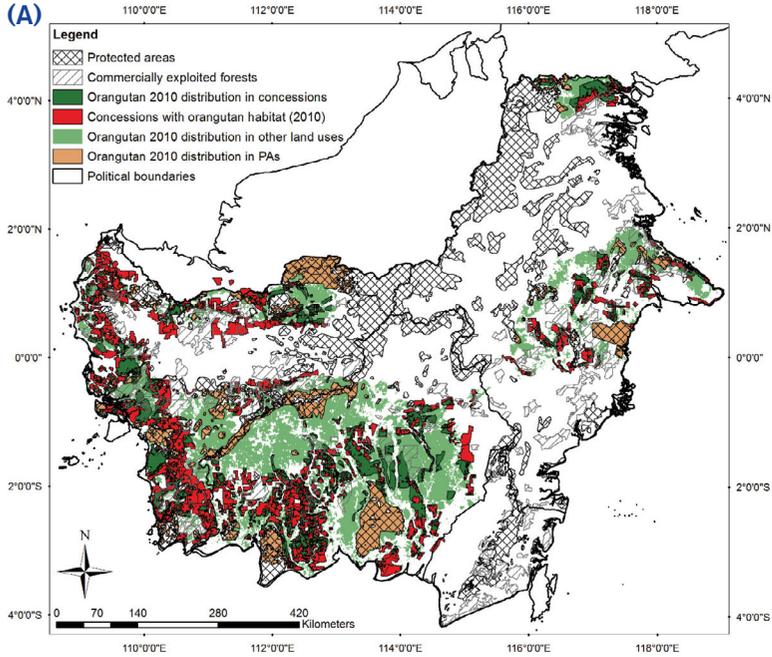
Malaysian Borneo

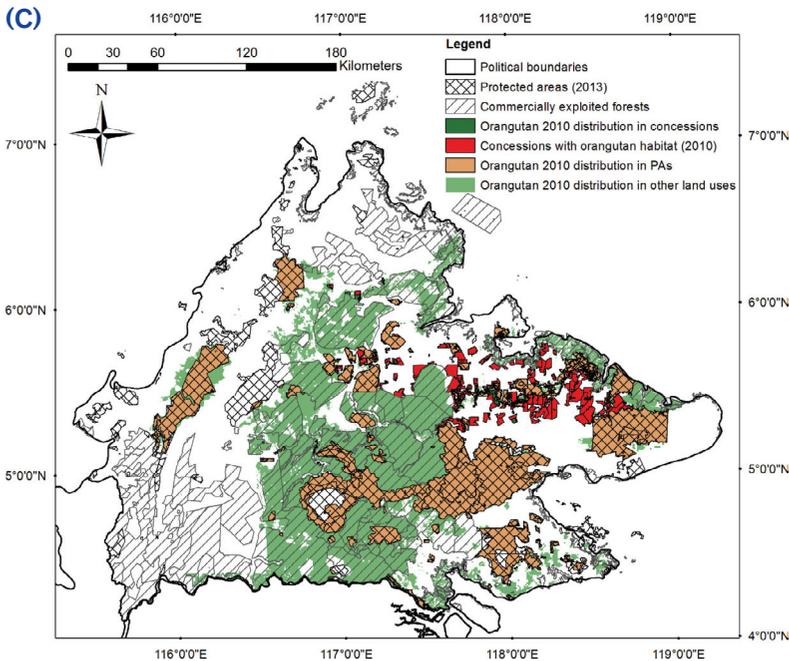
In Malaysian Borneo, Sarawak and Sabah have jurisdiction over at least 14 protected area designations under their respective state laws on parks and nature reserves, wildlife, forests, environmental protection and water resources (see Section 4.5).

Malaysian Borneo: Sarawak

In 2010, Sarawak had 29 per cent (217,800 ha) of its known orangutan range within four protected areas (Table 4; Figure 4), though population estimates are only available for two of them. Although the orangutan range in Sarawak is small compared to Kalimantan and Sabah, it holds significant populations of the rarest subspecies, *P.p.pygmaeus*. In areas bordering Kalimantan (namely, around Sarawak's Batang Ai National Park and Lanjak-Entimau Wildlife Sanctuary, which border West Kalimantan's Betung Kerihun National Park), intergovernmental and multi-stakeholder collaboration will be fundamental to ensuring the effective management of transboundary populations where oil palm continues to expand.

Figure 4. Orangutan 2010 distribution in Kalimantan (A), Sarawak (B), and Sabah (C) within protected areas (orange), in concessions (dark green) and in other land use types such as commercial forest (medium green), overlaid with protected area locations (cross hatch) and commercially exploited forests (diagonal lines).





Malaysian Borneo: Sabah

Sabah is Malaysia's orangutan stronghold, since approximately 1 million ha of its orangutan habitat is fully protected (Figure 4). These protected forests fall under different state laws (see Section 4.5), all of which prohibit any form of industrial activity (including oil palm) within their boundaries.

According to 2010 orangutan data and 2013 protected area data, more than 67 protected areas (across five types) in Sabah overlap with orangutan habitat (Table 5). Areas with more than 5,000 ha of orangutan distribution are outlined in Table 6. More than 90 per cent of several protected areas (including the Lower Kinabatangan Wildlife Sanctuary, Tabin Wildlife Reserve and Ulu Segama, Danum Valley and Malua Forest Reserves) are prime habitat and strongholds for the largest orangutan populations in Malaysia (Sabah Wildlife Department, 2012). These figures underscore the critical importance of maintaining the strict protection status of protected areas in Sabah that contain large extents of orangutan habitat and populations, and of preventing encroachment by nearby oil palm plantations and related activities. Any excisions or de-gazetting of such areas – including for oil palm – will inevitably result in corresponding losses in orangutan habitat and populations.

Table 3. Protected areas with orangutan distribution in Kalimantan.

Names	Region	Sub-species	Sum of orangutan habitat (ha)	Sum of protected area (ha)	% of habitat	Population estimate
Sebangau National Park	Kalimantan	<i>P. p. wurmbii</i>	1,053,799	1,137,390	93	6,900 ^a
Betung Kerihun National Park	West Kalimantan	<i>P.p. pygmaeus</i>	275,394	769,848	36	1,330–2,000 ^b
Bukit Baka-Bukit Raya National Park	Kalimantan	<i>P. p. wurmbii</i>	210,706	272,256	77	175 ^a
Kutai National Park	East Kalimantan	<i>P. p. morio</i>	205,819	206,916	99	600 ^a
Tanjung Puting National Park	Central Kalimantan	<i>P. p. wurmbii</i>	177,922	369,370	48	6,000 ^a
Hulu Kerian	Kalimantan		115,250	227,429	51	
Gunung Palung National Park	West Kalimantan	<i>P. p. wurmbii</i>	80,324	99,771	81	2,500 ^a
Sei Pinoh	Kalimantan		64,941	106,783	61	
Muara Kendawangan Nature Reserve	Kalimantan		53,030	140,547	38	
Sapathawung Nature Reserve	Kalimantan		52,578	331,582	16	
Unknown	Kalimantan		42,984	70,884	61	
Danau Sentarum National Park	Kalimantan	<i>P.p. pygmaeus</i>	42,796	127,478	34	500–1,000 ^b
Medang	Kalimantan		38,195	40,004	95	
Rubai Pasilan Tabah	Kalimantan		35,422	197,321	18	
Gunung Niut Nature Reserve	Kalimantan		33,670	101,046	33	
Gunung Ketungan Timur	Kalimantan		29,250	59,968	49	
Kayan Mentarang National Park	Kalimantan		13,538	1,314,437	1	
Melawai	Kalimantan		12,158	668,617	2	
Batang Batu Putih	Kalimantan		11,849	107,767	11	
Muara Kaman Sedulung Nature Reserve	Kalimantan		11,171	64,927	17	
Gunung Tarak Protection Forest	Kalimantan		10,351	22,225	47	
Gunung Kenebah	Kalimantan		6,871	22,448	31	
Gunung Nyut Parensen	Kalimantan		4,197	36,307	12	

^a Wich et al. (2008)

^b Singleton et al. (2004)

Table 4. Protected areas with orangutan distribution of *P. p. pygmaeus* in Sarawak.

Names	State	Sum of orangutan habitat (ha)	Sum of protected area (ha)	% of habitat	Population estimate
Lanjak-Entimau Wildlife Sanctuary	Sarawak	163,526	171,076	96	1024–1181 ^a
Maludam National Park	Sarawak	39,482	43,845	90	unknown
Medalam Protected Forest	Sarawak	32,469	33,698	96	unknown
Batang Ai National Park	Sarawak	24,124	25,169	96	119–580 ^a

^aWich *et al.* 2008**Table 5. Total extent and area of orangutan habitat (2010) within the various types of protected areas in Sabah (2013).**

Type of protected area	Sum of orangutan habitat (ha)	Sum of protected area (ha)	% of habitat
Class I Forest Reserve – Protection Forest Reserve	624,718	873,648	72
Class VI Forest Reserve – Virgin Jungle Reserve	69,498	102,904	68
Class VII Forest Reserve – Wildlife Reserve	137,460	140,360	98
Parks	167,442	250,398	67
Wildlife Sanctuary/ Conservation Area	24,563	73,720	33

Table 6. Protected areas in Sabah with >5,000 ha of orangutan habitat (*P. p. morio*) within their boundaries (FR = Forest Reserve).

Names	Protected area type	Sum of orangutan habitat (ha)	Sum of protected area (ha)	% of habitat	Population estimate
Ulu Segama FR	Class I – Protection Forest Reserve	101,983	128,851	79	2064–11064 ^a
Tabin Wildlife Reserve	Class VII – Wildlife Reserve	95,852	113,440	84	517–3796 ^a
Mount Magdalena FR	Class I – Protection Forest Reserve	61,379	66,998	92	
Danum Valley FR	Class I – Protection Forest Reserve	42,515	44,555	95	309–570 ^c
Malua FR	Class I – Protection Forest Reserve	33,997	34,389	99	
Mount Louisa FR	Class I – Protection Forest Reserve	31,085	63,479	49	
Taman Negara Banjaran Crocker	Park	30,261	141,619	21	a
Maliau Buffer Zone FR	Class I – Protection Forest Reserve	21,849	30,166	72	
Tawai FR	Class I – Protection Forest Reserve	20,304	22,934	89	
Sungai Tiagau FR	Class I – Protection Forest Reserve	18,487	19,767	94	
Tawau Hills	Parks	16,948	28,440	60	
Ulu Kalumpang FR	Class I – Protection Forest Reserve	16,315	51,854	31	
Maliau Basin FR	Class I – Protection Forest Reserve	14,296	59,115	24	
Kinabatangan Wildlife Sanctuary	Wildlife Conservation Area/Sanctuary	14,171	27,248	52	800 ^b
Kulamba Wildlife Reserve	Class VII – Wildlife Reserve	13,806	20,760	67	182–1369 ^a
Sg. Imbak FR	Class VI – Virgin Jungle Reserve	13,241	18,425	72	
Sungai Taliwas FR	Class I – Protection Forest Reserve	9,938	9,939	100	
Sg. Pinangah FR	Class I – Protection Forest Reserve	8,925	10,918	82	77–644 ^a
Mt. Hattion FR	Class I – Protection Forest Reserve	8,835	8,835	100	
Bukit Taviu FR	Class I – Protection Forest Reserve	7,964	8,700	92	
Mt. Wullersdorf FR	Class I – Protection Forest Reserve	5,242	8,343	63	

^a Ancrenaz et al. (2005)^b Ancrenaz et al. (2014)^c Sabah Wildlife Department (2012)

2.4 Fires pose an increasing threat to orangutan habitat

The 2015 fires that burned throughout Indonesia have been called “*the biggest environmental crime of the 21st century*” (Meijaard, 2015a). From October 2014 to December 2015, 2,886 fire events occurred within the Bornean orangutan’s distribution, with the vast majority (2,750) in Kalimantan (Figure 5). Of those in Kalimantan, 34 per cent of fire events broke out in unconverted orangutan habitat in oil palm estates and 13 per cent happened in orangutan habitat in protected areas. More generally, fires were estimated to have threatened at least one third of the remaining wild orangutan population (Vidal, 2015). Three hundred and fifty eight fire ‘hotspots’ were identified inside Kalimantan’s Sebangau Forest, Tanjung Puting National Park, Katigan Forest and Mawas Reserve, affecting almost 20,000 orangutans (Vidal, 2015). Haze covered an even greater area, and is likely to have had a similarly detrimental impact on orangutans as it did on humans, given the species’ anatomical similarity (Vidal, 2015).

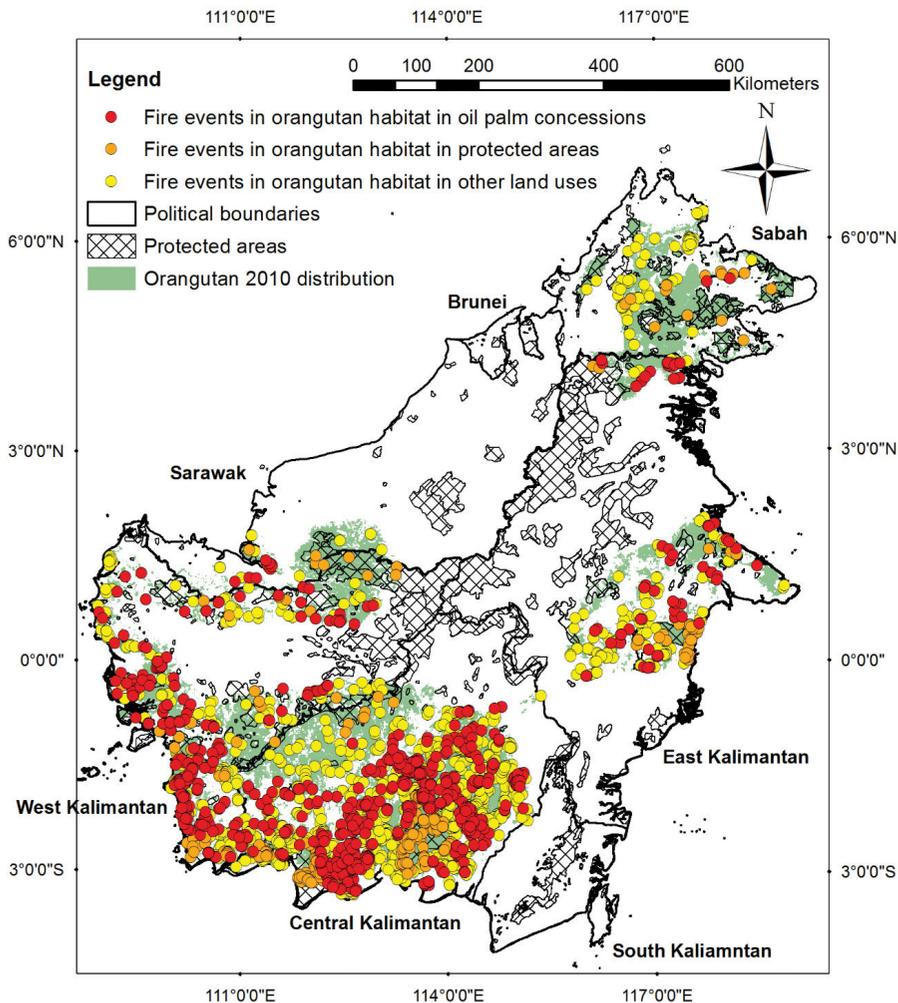
There were multiple causes and actors involved in the fires. Poor land management practices that have dried and degraded peat swamp forest (Lingga, 2015) made huge areas fire-prone, especially given the 2015 El Niño event (Drake, 2015). Some fires were started by large timber, pulp and paper and uncertified oil palm companies clearing land within their concessions, which apparently spread beyond their boundaries due to weather patterns and the difficulty of controlling fires on peat.

In addition, one study found that about 79 per cent of fire emissions in Kalimantan came from small- and mid-sized farmers and landowners who cleared their land for agriculture or oil palm development; illegal clearings for land acquisition were also a significant contributing factor for the fires (Meijaard, 2015c). However, more research is needed to distinguish between the scale and impacts of different ‘types’ of farmers and different reasons for using fire to clear land for oil palm and other crops. In particular, a distinction should be made between, on the one hand, indigenous peoples practising subsistence and small-scale agriculture and, on the other hand, government-mandated smallholder schemes and transmigration programmes that specifically aim to expand oil palm and are often closely tied to large-scale estates, see Jonas (2017).

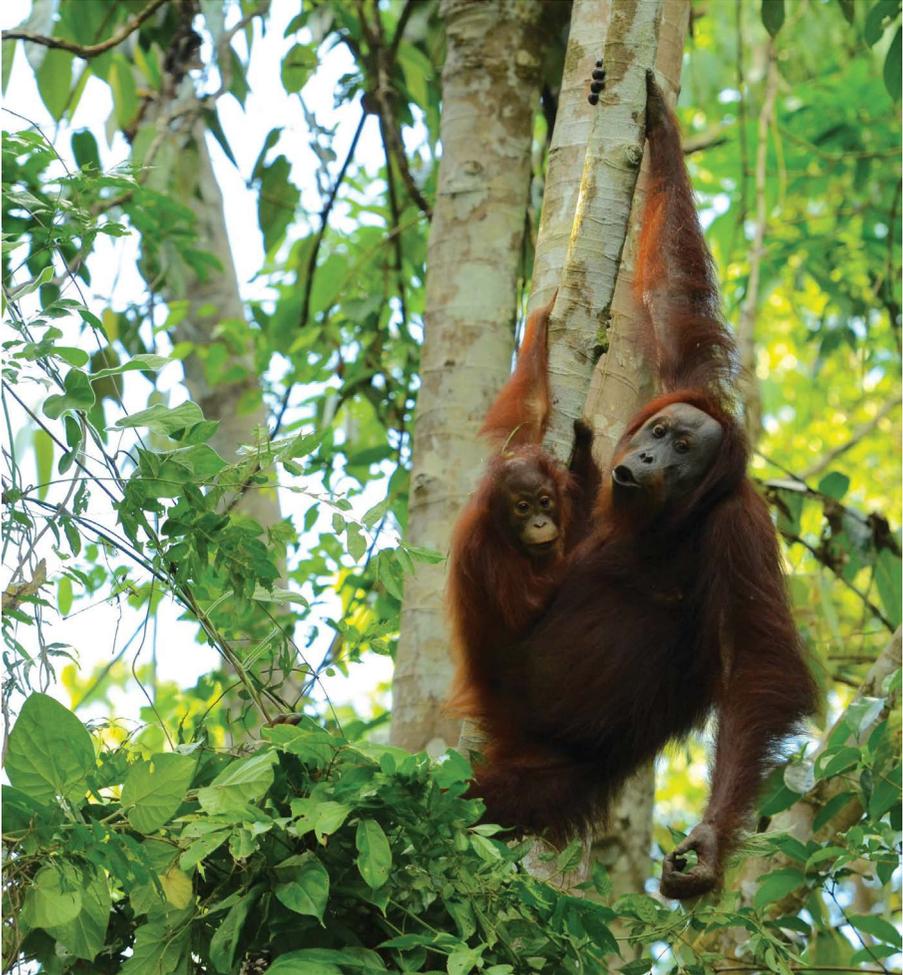
The forest laws in all three regions (including Indonesia’s *Forestry Law No. 41/1999*, *Regulation on Forest Protection No. 45/2004* and *Law on Plantations No. 39/2014*; Sabah’s *Forest Enactment 1968*; and Sarawak’s *Forests Ordinance 2015*) provide certain protections against fires. However, the respective forest departments have struggled to implement these measures for various reasons and to varying degrees, including insufficient coordination within and between governmental agencies; inadequate infrastructure and limited human and financial resources for firefighting or monitoring large swathes of forest and protected areas; and insufficient focus on transparency and accountability, which at times leads to corruption (Lim, 2014; Lopez and Laan, 2008).

That the 2014–2015 fires cannot be attributed to any single cause or ‘culprit’ underscores the complexity of understanding and addressing the role of fires in oil palm development and, by extension, orangutan conservation. Regardless, it is clear that fires caused by the oil palm industry – both large-scale estates and smallholders – pose an increasing threat to orangutans and their habitats. It is also likely that fires are exacerbated by broader environmental and climate change, and that they further reduce the functionality and connectivity of orangutan habitat.

Figure 5. Location of fire events between 22 October 2014 and 1 December 2015 within the total 2010 orangutan distribution extents, and those within protected areas and known oil palm estates.



Orangutans in the forest canopy of the Lower Kinabatangan Wildlife Sanctuary



(Photo credit: HUTAN – KOCP)

3. Assessing broader investment trends, underlying drivers and enabling factors for large-scale oil palm in Borneo

To understand the policy and legal drivers of the expansion of large-scale oil palm in Borneo, it helps to examine broader trends in agribusiness investment. These drivers and enabling factors include land use allocation and cost-benefit analyses, productive use requirements and impact assessment regimes. The close interplay between these and other factors forms an important part of the 'legal ecosystem' within which orangutan conservation must be considered. (It is beyond of the scope of this report to describe the factors driving the global demand for palm oil and associated market trends).

3.1 The growth of international, regional and domestic investment in large-scale oil palm and related industries

International and regional investment trends

Indonesia and Malaysia are the world's largest producers and exporters of palm oil, and together provide an estimated 85 to 90 per cent of global supply. The expansion of the industry and related sectors in both countries would not have been possible without significant foreign investment – particularly between Malaysia, Indonesia and Singapore. International and intraregional investment trends therefore have a direct impact on orangutans (Jonas, 2017), even when the links may not immediately be apparent. For example, investment in physical infrastructure such as roads and ports could be considered a direct driver of orangutan habitat fragmentation because it lowers logistical and transaction costs for the oil palm industry (Laurance *et al.*, 2015). The continued growth and interplay between investment in agribusiness and infrastructure are likely to pose a dual threat to orangutan conservation in the region (also see Arcus Foundation, in press).

Regional integration and connectivity along palm oil and related value chains are expected to continue to intensify in the foreseeable future (UNCTAD, 2015). An important factor encouraging these trends is the Association of South East Asian Nations' (ASEAN) broader embrace of policies and agreements designed to support sustained economic growth and market liberalisation, which are often at odds with the bloc's policies on sustainable development and the environment. In effect, policy and investment support for palm oil and other agribusiness industries far outstrips any comparable backing for environmental protection and conservation, including of endangered species such as orangutan. This constitutes a significant bottleneck at the regional level by entrenching a policy framework that encourages a 'business as usual' pursuit of continued economic growth with little regard for domestic environmental considerations. ASEAN policy in turn

influences and serves to justify national policies supporting continued oil palm expansion in both Indonesia and Malaysia. Environmental ministries and civil society organisations should arguably pay greater attention to the interplay between regional and domestic policies and inconsistencies between economic and environmental policies at these different levels.

Domestic investment trends: Indonesian Borneo

Indonesia attracts significant foreign direct investment (FDI) and is the third largest emerging economy in Asia, after China and India. As of 2011, foreign investors – mainly based in Singapore and Malaysia – controlled nearly 70 per cent of Indonesia's crude palm oil production (Rhein, 2014). Seeking to bolster domestically owned industry, Indonesia recently developed a new strategy for international investment policies, revealed a new model Bilateral Investment Treaty (BIT) and terminated nearly 30 per cent of its BITs, including with major palm oil investment and trading partners such as Malaysia, Singapore and the Netherlands.

According to the inventory analysis of select oil palm estates (see Sections 1.3.1 and 2.2; Abram *et al.*, 2017), Kalimantan has a fairly diverse mix of foreign and domestic investors in the sector. However, recent changes to Indonesia's national investment strategy and *Plantation Law* (No. 39/2014) indicate a conscious national choice to shift away from foreign investment and bolster domestic investment. This is expected to primarily affect Malaysian and Singaporean companies and to benefit domestic companies. Indonesia should take the opportunity to strengthen environmental and sustainability requirements in investment agreements with clauses pertaining to agriculture (if not oil palm specifically) and in laws regulating domestic investment in oil palm. For example, the Indonesian Sustainable Palm Oil standard – the legally binding, mandatory certification process for all oil palm growers except smallholders – should be improved to meet the international RSPO standard (currently it is weaker than RSPO). If Indonesia fails to do so, the scope for civil society leverage over both foreign and domestic oil palm investors in Indonesia is likely to decline.

Domestic investment trends: Malaysian Borneo

As a major contender in the regional and global economies, Malaysia is both a significant source and recipient of FDI. The country has very close investment relationships with Indonesia (the main recipient of its outward FDI) and Singapore (the main source of its inward FDI). Malaysia's legal framework is strongly oriented towards investment promotion and liberalisation, including for agriculture, which is one of its top five industries. Large-scale oil palm plantations are primarily financed and operated by large government-linked companies and multinational enterprises (including those based in Malaysia).

According to the inventory analysis of select oil palm estates in Malaysian Borneo (see Sections 1.3.1 and 2.2; Abram *et al.*, 2017), the vast majority of concessions

are financed fully or in part by private and/or public Malaysian investors. Compared to multinational companies, which tend to be more mindful of their public image, such investors may be less susceptible to pressure from international consumers or civil society.

Domestic economic development policies in Malaysia and Indonesia continue to entrench large-scale oil palm production as part of a broader orientation towards mainstream economic growth. Sub-national and sector-specific policies and programmes include aggressive goals for further expanding and developing the palm oil industry in both Malaysian and Indonesian Borneo. As with the ASEAN policies, domestic economic policies in both countries undermine and largely negate otherwise promising environmental and sustainable development policies. These policy inconsistencies epitomise the challenges of institutionalising environmental considerations in policy contexts that place ultimate priority on sustained economic growth.

In both Malaysia and Indonesia, the oil palm industry benefits from a wide range of domestic incentives and subsidies (McFarland *et al.*, 2015) such as tax-free zones, growth corridors and offshore banking and investment centres. However, subsidies create direct and indirect costs such as increasing national debt, entrenching monopolies, exacerbating deforestation and pollution, and absorbing money from national budgets that could be spent on public services (International Institute for Sustainable Development, 2013). Under the Convention on Biological Diversity (CBD) Strategic Plan for Biodiversity 2011–2020 – the overarching framework for biodiversity conservation across the UN system – Aichi Target 3 calls for the elimination, phasing out or reform of incentives such as subsidies that are harmful to biodiversity. Since Malaysia and Indonesia are both parties to the CBD, Aichi Target 3 provides a policy hook for addressing the role of perverse incentives in large-scale agribusiness and deforestation, including in orangutan habitats.

In addition, the Indonesian and Malaysian governments have both supported the development of biofuels for domestic and international markets, including through national policies and investment incentives and subsidies. Government proponents contend that palm oil is a leading source of 'sustainable' energy for biofuel (Suleiman, 2014; Basiron, 2007). Both countries count their national energy mix policies and biofuel industries as 'renewable energy' in their commitments under the Paris Agreement under the UN Framework Convention on Climate Change (UNFCCC). However, there are major concerns that the biofuel industry and its subsidies incentivise the conversion of natural forests (including orangutan habitat) to oil palm plantations and other commodities through direct and indirect land use change (Bertzky *et al.*, 2011; Jupestaa *et al.*, 2011). This runs counter to the purported environmental benefits of biofuel. Large-scale plantations are likely to continue to expand to meet demand for biofuel under the guise of 'renewable' energy – further contributing to, rather than mitigating, climate change and the deforestation of orangutan habitat.

3.2 Indonesia, Malaysia and Singapore are global hotspots for illicit capital and tax havens, and lag behind global efforts to address ‘forest-risk’ investments in palm oil

Public scrutiny of the relationship between financial transparency and accountability in the continued expansion of agribusiness, including oil palm, is intensifying. Asia is the main driver of illicit financial flows from developing countries and Indonesia and Malaysia are among the top ten countries globally with the largest outflows of illicit capital, including from crime, tax evasion and corruption (Kar and Freitas, 2014). Transnational organised crime plays a significant role in forest-related crimes, including by laundering illegal tropical timber through oil palm plantation front companies based in tax havens (Nellemann *et al.*, 2016), further underscoring the licit and illicit linkages between the logging and oil palm industries.

Well known for its secretive banking laws, Singapore has been identified as an offshore hub favoured by oil palm companies, including those operating in Sarawak (Global Witness, 2013). In tandem with incentives such as subsidies and tax breaks for the oil palm industry, the use of such offshore tax havens has significant implications for both Indonesia and Malaysia in terms of lost government revenue that could otherwise be used to promote public goods (see Cotula, 2016), including biodiversity conservation.

Some international banks, investors and sustainability initiatives have sought to address such environmental, social and governance issues, including in the context of forest-risk commodities such as palm oil. These could provide important leverage points for promoting orangutan conservation in the context of large-scale oil palm. However, domestic banks, investors and stock exchanges in Indonesia, Malaysia and Singapore appear to be lagging far behind (Stampe and McCarron, 2015). This is a particular concern since the stock exchanges in these three countries host 90 per cent of the total market capitalisation of oil palm plantation companies. The longer Indonesia, Malaysia and Singapore remain beyond the reach of financial sector sustainability schemes and benefit from exploiting an uneven playing field in the oil palm industry, the longer they will continue to ‘race to the bottom’ and contribute further to deforestation and the decline of orangutans.

3.3 Legal and illegal practices underpin deforestation and orangutan habitat loss: from logging to oil palm

Borneo has experienced extensive forest loss due to a number of industrial activities, including (but not limited to) logging and large-scale oil palm (Section 2.2). Beyond the broader investment trends and economic policies that have supported the growth of these industries, both logging and oil palm are known to involve illegal practices and links with transnational organised crime (Section 3.2). This section briefly highlights how these industries continue to be linked through layers of legal and illegal practices that are embedded in political

economies in Indonesian and Malaysian Borneo. This provides important context for subsequent analysis and recommendations.

Indonesian Borneo

Under Indonesia's *Forestry Law*, forest estates have three functions: conservation, protection and production. Around 70 per cent of Indonesia's total land was classified as forest estate in 2011, but only around 11 per cent of this area was legally gazetted (Ministry of Forestry, 2012). This implementation gap has allowed much of the forested area to be subjected to competing demands, including for industrial logging and oil palm. As a consequence, forest estates have often become battlegrounds for competing assertions of jurisdiction, ownership and access, especially between local governments and the federal Ministry of Forestry (Wakker, 2014).

In addition, large volumes of timber have been siphoned from illegal, unlicensed land clearances for oil palm plantations. An estimated 80 per cent of all oil palm estates in Indonesia play host to some form of illegality, most commonly the clearing of forest outside estate boundaries (Lawson, 2014). Some companies harvest commercial timber in oil palm estates without obtaining the necessary Timber Utilisation Permits, or harvest such timber using illegally obtained Permits (Environmental Investigation Agency, 2014). Even if an oil palm estate technically has legal permits to the land, these may have been acquired after the land was logged illegally – perhaps even by the same company. These complexities pose challenges to the authorities and civil society alike, especially when an oil palm estate claims to be operating only in 'degraded' areas. Monitoring and enforcement thus require peeling back layers of potential illegalities when oil palm estates have been established in areas that may have been illegally logged orangutan habitat.

Malaysian Borneo

The East Malaysian states of Sabah and Sarawak have jurisdiction over their respective forests. Industrial logging was the mainstay of both Sabah's and Sarawak's economies from the 1970s until the mid-1990s, when the oil palm industry surpassed it in terms of relative economic importance. As in Indonesia, direct economic linkages and illegalities persist between these two industries. In Sarawak, for example, politicians and their families often have significant financial stakes in logging and oil palm companies and exert influence over legal and political frameworks intended to regulate forests and the oil palm industry (see Box 2).

Box 2. Alleged corruption underpinning the logging and oil palm industries in Sarawak (Global Witness, 2012, 2013).

Investigative reports identified deeply entrenched governance issues in Sarawak under former Chief Minister Abdul Taib Mahmud, who ruled the state for over 30 years until early 2014. Evidence pointed to systematic bribery and corruption in the issuance or transfer of timber and plantation licences and illegal logging in orangutan habitat. All of this was facilitated by the loans and financial services of a leading international bank with relatively progressive environmental and social policies. Further evidence suggested multi-million dollar kickbacks and 'unofficial payments' to Chief Minister Taib for the issuance of licences, speculative land deals, evasion of Malaysian tax law and a corrupt service economy of local lawyers and banks, often using Singapore as an offshore hub.

3.4 Poor land use allocation policies result in the conversion of orangutan habitat to oil palm, including in unproductive areas

In both Indonesia and Malaysia, land use allocation practices are characterised by laws and procedures that promote the conversion of forests to agriculture and other types of extractive land uses (Brockhaus *et al.*, 2012). This has had major ramifications for orangutan habitat and populations in Borneo.

In the past, a lack of knowledge about the precise orangutan range across Borneo has greatly hampered the identification of potential key conservation areas for the species. However, scientists have recently made significant progress on this front and the extent of most orangutan populations is currently known with enough precision (Utami-Atmoko *et al.*, 2017) to set aside key areas that must not be converted to agriculture (Ancrenaz *et al.*, 2016b).

Indonesian Borneo

In Indonesia, all land is legally classified as either forest estate or non-forest estate. Around 30 per cent of Indonesia's land area is classified as non-forest estate, which is generally under the jurisdiction of the district where it is located and designated for non-forestry uses such as agriculture (as governed by the *Basic Agrarian Law No. 5 of 1960*). Of the four main types of land rights, the leasehold (*Hak Guna Usaha*) is for 95 years and can be renewed for up to an additional 95 years. These long-term leases have underpinned the expansion of large-scale oil palm plantations for the past few decades.

Companies have exploited legal and bureaucratic loopholes in order to circumvent attempts to limit the size of large-scale plantations. For example, in 2013, the Minister of Agriculture set 100,000 ha as the maximum size for oil palm plantations in order to protect smallholders (*Regulation No. 98/2013*). However, this does not apply to companies owned by the state or regional governments, or companies listed on the Indonesian Stock Exchange that are majority owned by the public. Some companies have exploited this loophole by injecting plantation assets

into a listed company in order to expand the sizes of their plantations (Indonesia Investments, 2015). The limit was further reduced in 2015 by a new law that only allowed a location permit and business use permit to be granted to a company with a maximum concession of 20,000 ha in each province (*Agrarian Ministry Law No. 5/2015*). In practice, however, companies have managed to secure permits for cumulatively larger areas by 'splitting' them under several subsidiaries, each of which applies for the relevant permits for an area up to the maximum allowable (Lusiana, email to author, 2015). Such tactics are technically legal, but only because the current legal framework fails to safeguard against them; companies are able to exploit legal loopholes while remaining within the letter of the law. This is deeply problematic for orangutans, which require large areas of habitat with sufficient connectivity and forest function.

Malaysian Borneo

In Sabah, the land allocation framework for oil palm development is a relatively straightforward vestige of the British colonial administration. Published in 1976 and based solely on surveys of soil types, Sabah's Land Capability Classification identified five land types based on their profitability, namely: mining, permanent agriculture, other agriculture, forestry and 'other'; only the latter was considered 'suitable for conservation'. The Classification identified 30 per cent of Sabah as suitable for agriculture – including most of the areas identified years later as key habitats for wildlife – and the state government developed these areas accordingly (Institute for Development Studies, 2007). Sarawak also has a Land Capability Classification, which similarly provided the basis for land allocation in that state during the timber and oil palm booms. In both states, most available land has been alienated to either medium- or large-scale estates, or for smallholders under government-linked poverty alleviation schemes and under individual Native Titles, regardless of the land's value for orangutan conservation or other HCVs (see Box 3 for a summary of the case study from eastern Sabah).

Identifying ways to safeguard these forests is now paramount to the long-term survival of orangutans in Sabah. Examples could include implementing existing supportive legal provisions more effectively and developing new and innovative provisions for protection and conservation outside of the state-protected area network. Sabah's *Land Ordinance* poses a major obstacle to forest and orangutan conservation, as discussed below in Section 3.5. Such conflicting policies will have to be addressed under the recently endorsed jurisdictional approach to RSPO certification, under which the state of Sabah has committed to producing 100 per cent certified sustainable palm oil by 2025 (see Section 4.1).

Box 3. Poor land use allocation in the Lower Kinabatangan has led to significant loss of orangutan habitat.

Although the Lower Kinabatangan area of eastern Sabah has been heavily targeted for oil palm due to its flat and fertile lowlands, this region is still a stronghold for orangutans in Malaysian Borneo. However, significant forest loss in the region has occurred due to oil palm (Figure 6), resulting in a 30 per cent decline in orangutan numbers over the last 15 years (Abram and Ancrenaz, 2017). Furthermore, despite two decades of orangutan conservation work in this region and regardless of the region's international importance for biodiversity and ecotourism, land use allocation procedures for oil palm have not changed. As a result, what little forest remains outside of the highly fragmented protected areas (circa 23,000 ha in 2014) is found within oil palm estates (31 per cent) or on smallholdings (28 per cent) and is under imminent threat of conversion (Abram and Ancrenaz, 2017).

Furthermore, despite the Lower Kinabatangan having extensive land allocation for oil palm, an estimated half of the forest outside of protected areas is not suitable for oil palm development due to seasonal or daily (tidal) flooding (Figure 7). According to previous economic analyses, converting unsuitable forested areas to oil palm would be a net financial loss and would likely result in the destruction of about 15,000 ha of land without any benefit for people or for biodiversity (Abram *et al.*, 2014). If converted to oil palm, these forests would become commercially redundant areas: most palms would die and the overall net cost for converting forest to oil palm would significantly outweigh any revenue derived in these areas (estimated net present value over 25 years ranged from USD -65 to USD -300/ha per year). Thus, not only is orangutan habitat zoned for and converted to oil palm, but this also occurs in areas so unsuitable for oil palm cultivation that it creates a net economic loss. There is arguably no legitimate reason – even from a strictly economic perspective – for continuing to pursue oil palm development in such ecologically sensitive areas.

Figure 6. Map of the Lower Kinabatangan region showing the protected area network (grey) with the extent of the high conservation value forest in 1996, 2005 and 2014.

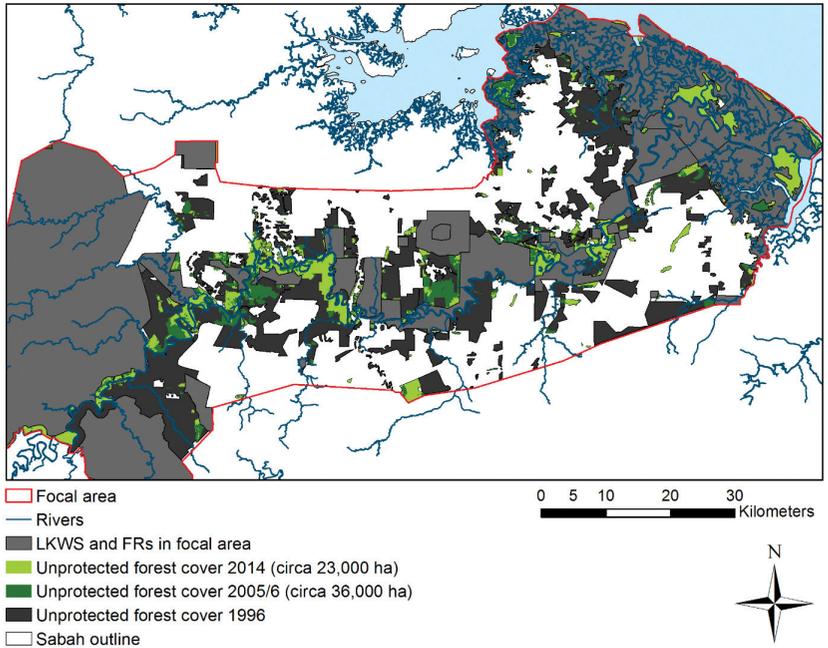
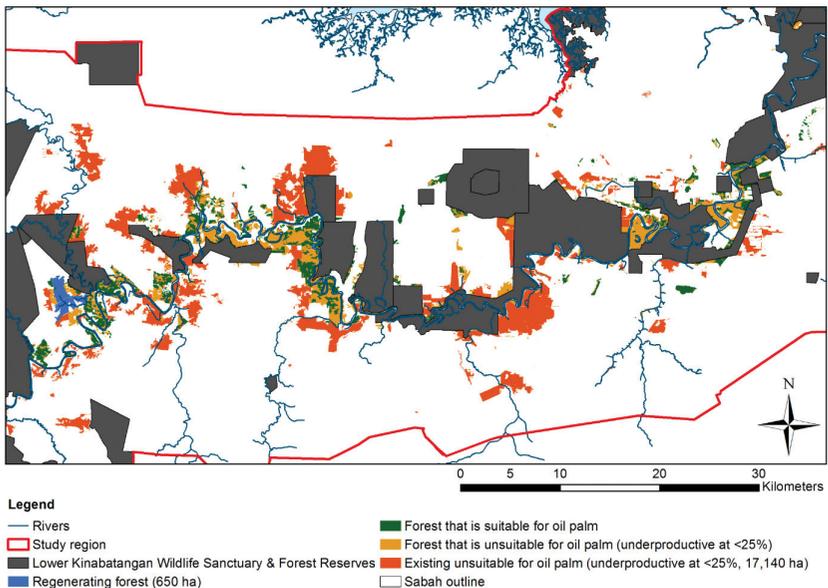


Figure 7. Extent of failed oil palm areas due to seasonal flooding (dark orange), areas of unprotected forest that would be suitable for oil palm (green) and areas of unprotected forest that would be unsuitable for oil palm (light orange).



3.5 Productive use requirements in land laws mandate the conversion of orangutan habitat, even where title- or lease-holders wish to protect it

Productive use requirements are a key feature of the legal frameworks for land and plantation development in both Indonesia and Malaysia. These are time-bound requirements for the 'development' of the land for its intended purpose, failing which a permit or lease may be revoked. In practice, these requirements have had negative implications for orangutan conservation and the environment more broadly. Legally requiring oil palm plantation owners (and smallholders) to develop the majority or full extent of their estates or smallholdings effectively prohibits them from protecting any significant areas within their boundaries, even if the lands include orangutan habitat or corridors. Thus, productive use requirements pose a direct legal threat to orangutan conservation and protection in oil palm estates (and smallholdings).

Indonesian Borneo

Indonesia's *Plantation Law* (No. 18/2004) allows for the revocation of a business use permit (leasehold) if the holder abandons the site for three years or fails to clear and/or develop a minimum area within a given period. The 2014 revision of the *Plantation Law* (No. 39/2014) requires the utilisation of at least 30 per cent of the licensed land for its intended purpose within three years and use of the entire area within six years. The state may seize and turn over uncultivated land to an entity that will convert it, and companies that fail to adhere may face fines and revocation of their business licences. There does not appear to be any cross-references to these requirements in relevant environmental legislation, highlighting a gap between laws for plantations and laws intended to regulate their environmental impacts.

Similarly, foreign or domestic companies may be granted what are known as location permits for land needed for their investments (*Minister of Agrarian Affairs Decree No. 2/1999*). In the same way that business use permits (leaseholds) can be revoked under the *Plantation Law*, the location permit is also subject to productive use requirements under the *1999 Decree*. If the land acquisition is not completed within the permit period (which depends on the size of the land), the permit period may be extended. If the acquisition is still not complete by the end of the extension, either the size is adjusted in the investment plan or the land already acquired will be released to other eligible companies or parties. In practice, these requirements have posed obstacles to companies attempting to protect areas with HCVs, as local government officials have reallocated 'unused' land to other parties (Andiko, 2010).

The dominant production-oriented view also underpins the legal frameworks for forestry and has implications for orangutans in the context of oil palm. For example, Indonesia's *Forestry Law* (No. 41/1999) does not provide an adequate definition of

'degraded' forest. Such forests may still contain HCVs but may be legally excised from the forest estate – a direct result of this production-oriented view of forest condition and function. In such cases, forests with HCVs (including those with orangutan populations) may still be logged and converted to oil palm plantations or other 'productive' uses simply because of an outdated definition of a 'degraded' forest. Legal definitions of 'degraded' forest and 'productive' uses should be updated to incorporate current practice on HCV identification and management.

Malaysian Borneo

Sabah and Sarawak have jurisdiction over land in their respective states and both view land as an economic asset. For example, the Sarawak State Government's main policy thrust for land is to transform land into productive assets – particularly through plantation development – to ensure optimum utilisation and generate economic benefits (Osman and Kueh, 2010). These policies underpin the states' respective land laws and systematically undermine efforts to conserve the environment and natural resources.

As in Indonesia, there are particular concerns around productive use requirements that return titled land to the government unless it is converted to agricultural purposes within certain timeframes. Titleholders who wish to set aside significant areas of their land – for example, for environmental protection or conservation – are prevented by law from doing so. However, at least eight provisions under Sabah's *Land Ordinance 1930* and other land laws could technically be used to support conservation – for example, compulsory acquisition of alienated land for public purpose (see Box 4) – but these have been used very rarely (if ever) in practice.

Box 4. Select legal options for acquiring land for public purpose in Sabah and Sarawak

In Sarawak, alienated land may be acquired for 'public purpose' under the *Land Code 1958* for inclusion in: (a) a national park or nature reserve (under the *National Parks and Nature Reserves Ordinance 1998*); (b) a wildlife sanctuary (under the *Wild Life Protection Ordinance 1998*); or (c) a forest reserve or protected forest (under the *Forests Ordinance 2015*). Similarly, in Sabah, alienated land may be acquired for 'public purpose' under the *Land Acquisition Ordinance 1950* for inclusion in: (a) a park or nature reserve (under the *Parks Enactment 1984*); (b) a wildlife sanctuary (under the *Wildlife Conservation Enactment 1997*); or (c) a forest reserve (under the *Forest Enactment 1968*). These provide potential opportunities for the protection of orangutan habitat in oil palm estates, but do not appear to have ever been used in practice. The contours of 'public purpose' under Malaysian and Common law would need to be further investigated to assess the feasibility of using this as a legal basis for protecting the environment.

There are many issues with land administration in Sabah and Sarawak. In both states, the directors of the Lands and Surveys Departments are responsible to the respective Chief Ministers. The states have wide discretion over the use of non-native land and large swathes of land have been allocated to industrial oil palm plantations without regard to environmental conservation or connectivity. In addition, recent amendments to both states' land laws (including the 2014 amendment to Sarawak's *Land Code* which allows for Native Customary Rights land to be transferred to non-native *Bumiputeras*) have expedited the conversion of native customary land to oil palm and other industrial monoculture plantations through unfavourable joint venture arrangements, often without the free, prior and informed consent of the indigenous peoples concerned. Although detailed consideration of issues concerning indigenous peoples was beyond the scope of the case study research, this particular legal development illustrates the direct linkages between laws and policies that undermine native customary rights and the further conversion of forests to industrial plantations. Further research on these issues could help identify opportunities for conservation gains that would go hand-in-hand with securing indigenous peoples' collective rights.

3.6 Impact assessment regimes in Malaysia and Indonesia are insufficient to mitigate the environmental impacts of large-scale oil palm

EIAs are important processes for identifying, evaluating and mitigating the potential impacts of large-scale oil palm plantations on biodiversity (including orangutans) in Borneo. In principle, EIAs should be undertaken prior to oil palm development and should influence planning and decision making about plantation location, size and mitigation measures to protect habitats and orangutans. EIAs are the only type of impact assessment required by law in both Indonesia and Malaysia for new oil palm plantings. However, both countries' EIA regimes face several challenges with the implementation of existing supportive provisions, as well as technical (legal) issues – particularly the fact that EIAs are not mandatory for all oil palm developments.

Indonesian Borneo

In Indonesia, the EIA regime has suffered from conflicts or a lack of integration with other laws in the context of oil palm development, but it has improved in recent years – at least on paper. For example, the revised *Plantation Law* (No. 39/2014) requires every business plantation to preserve the environment and to conduct an analysis of environmental impacts in order to obtain a business permit. It also requires a company to conduct an EIA or undertake environmental management and monitoring efforts and an environmental risk analysis after such a permit is obtained. However, it is unclear how these new provisions interact with those under the *Company Law* (No. 40/2007) for establishing companies. More generally, concerns have been expressed over the lack of integration between the *Company Law* (No. 40/2007) and environmental legislation (Handayani, 2010).

Corruption, collusion between companies and regency officials, and a lack of government oversight of licensing are key obstacles to enforcement and have contributed to years of illegal burning of peatlands and forests. More broadly, as one of the unforeseen implications of Indonesia's decentralisation efforts, districts are effectively competing with each other for oil palm investment and local officials may be more likely to prioritise private sector interests over their own mandated duties as regulators (Paoli *et al.*, 2013). As a result, the EIA process is arguably a 'casualty' of politically motivated decision making in oil palm development (Environmental Investigation Agency, 2014).

Malaysian Borneo

Under both Sabah's and Sarawak's state laws, EIAs are only mandatory if the proposed area of agricultural development exceeds a certain size or includes the conversion of certain ecosystems. Sarawak's *Natural Resources and Environment (Prescribed Activities) (Amendment) Order 1997* and Sabah's *Environment Protection (Prescribed Activities) (Environment Impact Assessment) Order 2005* only require an EIA report if (*inter alia*) the development of agricultural estates or plantations exceeds 500 ha, or if more than 50 ha of mangrove swamps (Sarawak) or wetland forests (Sabah) are converted into agricultural estates. In practice, some oil palm developers have 'split' the full area for which they are seeking approval into small enough parcels – including through subsidiary companies – to avoid triggering a mandatory EIA report. This is of particular concern since the impact assessment regime in Malaysia does not yet consider 'cumulative' impacts, whether for a whole corporate group's activities in a specific geographical area or for all activities in such an area, regardless of the investors.

Malaysia also faces issues with jurisdictional conflicts between federal and state regulation of EIAs. Sabah and Sarawak have jurisdiction over EIAs for most issues related to oil palm development in their respective states, but the federal *Environmental Quality Act 1974* and its derivatives cover the pollution of air, land and water from industrial activities, including production of crude palm oil. For example, the siting of palm oil mills in Sabah falls under the state law and agency, but the licensing and control of their discharge of wastes and emissions comes under federal jurisdiction. This creates implementation challenges due to a lack of understanding of these differences and resulting gaps or overlaps in jurisdictions between the agencies.

In Sabah and Sarawak, concerns with implementation include (*inter alia*): appointment of EIA consultants by project proponents, creating an inherent conflict of interest; low-quality EIA processes and reports and insufficient technical capacity among EIA consultants; relatively limited public participation in or scrutiny of EIA processes; insufficient enforcement of conditions, mitigation measures and penalties for offences; high levels of discretion exercised by officials mandated with examining and approving EIA reports; failure of the respective government departments to use fines collected through prescribed funds

for mitigation and protection activities; and insufficient coordination between relevant departments at the state level and between the state and federal levels. In some instances, developers have commenced proposed activities such as land clearance before EIA reports are even undertaken or approved; in other cases, recommendations of the EIA Review Panel have not been addressed before approval, leading to concerns that public participation and review are simply a 'rubber stamping' exercise.

4. Identifying policy and legal mechanisms to address the impact of large-scale oil palm on orangutan conservation in Borneo

So far, this report has assessed the current status of orangutans and the impact of oil palm (Section 2). It has also identified a range of constraints and bottlenecks embedded within broader investment trends, policy and legal drivers and enabling factors for the expansion of large-scale oil palm in Borneo (Section 3). Here, Section 4 identifies policy and legal opportunities to help address these issues within the following categories: the production of palm oil (from sustainability commitments and investment to land use allocation and impact assessments); the protection and conservation of orangutans; and restoration, liability and accountability when safeguards fail.

4.1 Supporting ambitious commitments to reform the production of palm oil

‘Zero deforestation’ commitments

As global consumer pressure mounts on the oil palm industry, more than 250 companies have made ‘zero deforestation’ commitments, covering an estimated 96 per cent of global oil palm production (Stolle and Payne, 2015). Companies that fail to make such commitments and change their practices accordingly risk being excluded from the supply chain. Accordingly, they have been applauded by some civil society organisations and embraced by most large companies seeking palm oil certification. However, they are not always backed by clear plans and mechanisms for practical implementation; some civil society organisations and consultants are working directly with companies to address these gaps.

Furthermore, ‘zero deforestation’ commitments can have perverse effects or ‘leakages’. Certified companies with the ability to manage estates at the landscape level now tend to avoid ‘greenfield’ or forested areas. Forested areas already designated by the governments of Indonesia and Malaysia for oil palm development are thus leased to smaller non-certified companies that are not implementing sustainable practices; these are the companies responsible for most of the environmental damage and orangutan destruction (Meijaard *et al.*, 2017b). Thus there is a need to ensure that ambitious commitments do not simply shift ‘business as usual’ forms of palm oil production to other areas.

'Jurisdictional approaches' to palm oil certification

Certification standards alone are not sufficient to achieve a sustainable oil palm industry (Winarni *et al.*, 2014). However, many civil society organisations in both Malaysia and Indonesia see certification standards as an imperfect but tangible way to improve practices in an industry that will continue to form a major part of their respective economies, regardless of pressure from outside.

Globally, at least 25 political geographies are exploring elements of 'jurisdictional approaches' to achieving 'zero deforestation' commitments and certifying related commodities. This signals an emerging trend in multi-stakeholder governance (Wolosin, 2016). In Borneo, the Malaysian state of Sabah and the Indonesian regency of Seruyan (in Central Kalimantan) recently committed to producing certified palm oil across their entire sub-national jurisdictions, up to RSPO standards. In parallel, several countries in Europe have committed to purchasing only RSPO-certified palm oil by 2020. This reflects a growing alignment between palm oil producers and consumers and helps create a business case for investing in companies and jurisdictions that have made such commitments.

Despite a range of challenges (see Earth Innovation Institute, 2017), the jurisdictional approaches in Sabah and Seruyan have the potential to mobilise relevant actors around a common vision, namely, transitioning from 'business as usual' to more progressive and responsible forms of palm oil production. If based on a minimum international standard such as RSPO and with strong enough leadership and active civil society involvement, jurisdictional approaches to certification could significantly improve orangutan conservation in oil palm production landscapes – particularly those that currently have significant areas under oil palm but few if any certified estates.

Under the current approach to RSPO certification, each individual estate is supposed to map and manage HCVs within their own boundaries; at best, this leads to the protection of small patches and isolated islands of HCV areas, including orangutan habitat, which are not likely to be viable in the long term. In contrast, the jurisdictional approach to certification could be a step change towards ecosystem-level approaches to conservation (sometimes called 'landscape approaches'). For example, a systematic and multi-stakeholder mapping process in Sabah will identify and develop management plans for HCV and high carbon stock (HCS) areas across the state as a whole. In principle, this should also address the perverse effects and 'leakages' noted above, at least within the sub-national jurisdiction concerned.

The driving force of private sector self-regulation

The private sector can develop self-regulatory standards and procedures much more rapidly than governments. When self-regulation outpaces state regulation, the former can help strengthen the latter (Braithwaite and Drahos, 2000). Jurisdictional approaches to palm oil certification could provide a better enabling environment

for achieving 'zero deforestation' commitments without perverse effects, and could also catalyse legal reform of longstanding bottlenecks to orangutan conservation in the context of oil palm (such as productive use requirements).

Given the high-profile nature of oil palm conflicts involving orangutans and related reputational risks, it is arguably in companies' and investors' best interest to be 'ahead of the curve' in efforts to protect orangutan habitats and populations and earn a reputation for doing so. For example, they should undertake participatory mapping and impact assessments before securing licences, voluntary set-asides of HCV areas within their estates, and voluntary alienation of orangutan habitat from their estates for inclusion in protected or conserved areas. It is strategic – and potentially quite effective – for civil society organisations, scientists and public authorities to critically engage with the private sector's self-regulatory efforts (Braithwaite and Drahos, 2000).

4.2 Influencing 'upstream' investment in large-scale oil palm

The palm oil industry is buttressed and enabled by a range of economic and investment policies and legal measures. These appear to create a feedback loop with regional and domestic investment trends that continue to support large-scale plantations (see Section 3.1), as well as the active use of tax havens and illegal practices (see Sections 3.2–3.3). This infrastructure is arguably rooted in the 'business as usual' approach to investment, which prioritises economic growth at all costs and fails to account for environmental externalities such as deforestation and biodiversity loss (Meijaard *et al.*, 2017b). If investment in oil palm continues to grow as projected, much could be gained by influencing 'upstream' investment chains. Multiple measures should be taken to build a critical mass of private sector actors who are ready and willing to institutionalise the business benefits of conservation and environmental protection.

Reframing the narrative around palm oil as a 'forest-risk' commodity

Companies, investors, lenders and financial regulators should reframe palm oil as a 'forest-risk' commodity, incorporate environmental, social and governance issues across their investment portfolios and join financial sustainability schemes. This new narrative around 'forest-risk' commodities highlights the risks of investing in palm oil companies in environmentally sensitive and high conservation value areas such as orangutan habitat, including direct and supply chain exposures. Conversely, orangutan conservation and environmental protection more broadly should be promoted as necessary elements of risk management for investments in oil palm. As underscored in a report written on behalf of 365 investors with USD 22 trillion in assets, addressing deforestation is 'critical to business success' (CDP, 2016).

Including environmental and sustainability requirements in investment agreements and targeting progressive investors

As Indonesia, in particular, modernises its investment strategy, it should incorporate environmental and sustainability requirements into international investment agreements such as BITs, specifically in clauses pertaining to oil palm or agriculture more broadly. Both Indonesia and Malaysia – and particularly sub-national jurisdictions such as Seruyan and Sabah – could target investment partners from progressive countries such as Norway and others who have adopted commitments to source 100 per cent of palm oil imports from certified sustainable sources. This approach supports a ‘race to the top’ and turns environmental and sustainability requirements from investment obstacles to investment advantages.

Eliminating perverse incentives for large-scale oil palm

In order to achieve Aichi Biodiversity Target 3 of the CBD’s Strategic Plan for Biodiversity 2011–2020, perverse incentives for large-scale oil palm plantations in domestic economic policies in both Malaysia and Indonesia should be eliminated and redirected to positive incentives for conservation. In the context of the biofuel industry, any investment should focus on downstream processing from existing plantations and should not be used as a basis for further expansion – especially not under the guise of ‘renewable energy’.

4.3 Improving spatial planning and land use allocation

It is expected that jurisdictional approaches to palm oil certification (see Section 4.1 above) will help usher in a step change in spatial planning and land use allocation. In Indonesia, the government has already enacted a number of ambitious commitments over the past 12 years, including a spatial planning law and ‘One Map’ policy, which together could potentially transform decision-making processes for oil palm development in ways that benefit orangutan conservation. Sabah and Sarawak could learn from the Indonesian experience in this regard and consider adopting similar policy and legal measures.

Indonesia’s Spatial Planning Law

As part of its broader decentralisation efforts, Indonesia has taken steps to reform its land use planning processes (including agricultural development) through a series of spatial planning laws, which provide for (*inter alia*) zoning, public participation and harmonisation of land use plans at different levels. The *Spatial Planning Law* (No. 26/2007) in particular is one of the most important recent developments in land governance in Indonesia. It mandates authorities at the district and provincial levels to complete and harmonise spatial plans outlining land uses and provides for new ways to enhance development control (including zoning, planning permits and implementation of incentives and disincentives). Spatial plans are valid for 20 years and may be reviewed every five years. Along with

the ambitious One Map Policy (below), the *Spatial Planning Law* has significant potential to help reform spatial planning for both conservation and development aims. However, implementation has been slow due to the highly political and technical nature of land use planning (Caroko *et al.*, 2011).

Indonesia's One Map Policy

First mandated by *Law No. 4/2011 on Geospatial Information*, the One Map Policy intends to produce a single, integrated nationwide map and database by 2019 that harmonises all maps from different state agencies. It aims to prevent concessions overlapping and would provide a basis for more coordinated and strategic spatial planning across agencies and industries, potentially minimising loopholes and conflicts with other policies (Jong, 2016). President Joko Widodo recently issued *Presidential Decree No. 9/2016* to hasten implementation of the policy. As of mid-2016, the Geospatial Information Agency had finished compiling maps from all government agencies. It aimed to complete the integrated map of Kalimantan – considered the most difficult region to map due to the many conflicting maps within and between agencies and land uses – by the end of 2016, but this had not yet been achieved at the time of publication. Civil society has called on the government to ensure the process also takes local level considerations into account, particularly conflicts involving communities (Jong, 2016).

4.4 Strengthening impact assessment regimes

As noted in Section 3.6 above, the impact assessment regimes in Indonesia and Malaysia have proved insufficient to mitigate the impacts of large-scale oil palm on orangutans and the environment more broadly. In some respects, this is due to ineffective implementation of otherwise sufficient provisions; in other cases, this is due to flaws in the laws themselves. However, there are some positive developments in both countries that should be tracked and enhanced further, as well as persistent inadequacies that should be targeted for reform.

Indonesian Borneo

Indonesia's impact assessment regime is relatively well developed and a series of recent amendments demonstrates the national government's willingness to continue to improve it. In addition to EIAs (*Analisis Mengenai Dampak Lingkungan*, or AMDALs, in Bahasa Indonesia) – which are required for oil palm development permits – Indonesia's *Environmental Protection and Management Law (No. 32/2009)* provides for (*inter alia*) environmental management and monitoring programmes (*Upaya Pengelolaan Lingkungan Hidup* and *Upaya Pemantauan Lingkungan Hidup*, or UKL-UPLs, in Bahasa Indonesia). It also provides for strategic environmental assessments, which are more systematic and policy- and planning-oriented than project-specific AMDALs and UKL-UPLs. Since the adoption of general guidelines on strategic environmental assessments (*Regulation*

of the State Minister for the Environment No. 09/2011), several ministries have developed subsidiary legislation, guidelines and pilot tests for such assessments.

However, due to Indonesia's decentralised approach to law making, these initiatives have led to difficulties in standardising and harmonising key concepts and approaches across different ministries and sectors. Furthermore, the AMDAL process does not yet require the assessment of HCVs (USAID, 2015), even though species protection obligations should arguably be addressed alongside habitat protection. The EIA regime therefore does not yet sufficiently address all stages of oil palm development that have an impact on the environment, including orangutan habitat and orangutans as a species.

More positively, the *Government Regulation on Environmental Licences* (No. 27/2012) represents another step forward in the development of Indonesia's environmental protection regime. Under this regulation, the outcome of an AMDAL and UKL-UPL is a prerequisite for obtaining an Environmental Licence, and continual compliance with this licence is a prerequisite for obtaining and maintaining a business licence. The regulation also authorises the Environment Ministry to establish a general environmental rehabilitation bond scheme, which could have a significant positive impact on private sector compliance and prevent the deforestation of critical habitats. In principle, the regulation should streamline the bureaucratic process for securing mandatory environmental documents and strengthen the existing environmental assessment procedure by creating a relatively clear enforcement mechanism (Assegaf Hamzah and Partners, 2012). Environmental organisations welcomed the issuance of the regulation, though it is not yet clear how effectively it will be implemented.

Malaysian Borneo

Malaysia's impact assessment regime is arguably weaker than that of Indonesia. In Malaysia, the federal government's *Ninth Malaysia Plan* (2006–2010) identified strategic environmental assessments as an environmental planning tool that "will be increasingly applied in evaluating and mitigating environmental impacts of development activities" (Economic Planning Unit, 2006: 453). However, neither the federal nor state-level impact assessment regimes yet provide for such assessments. At the state level, Sabah's Environment Protection Department has usefully issued a handbook on EIAs (2005b) as well as guidelines on EIAs specifically for oil palm development (2002b). Although these guidelines were developed many years ago, we could not find an assessment of the extent to which they had been implemented. This highlights a significant gap in the implementation of both federal and state policies that could otherwise strengthen the impact assessment regimes at these respective levels, with potential benefits for prevention and mitigation of the impacts of oil palm on orangutans.

4.5 Diversifying networks of protected and conserved areas

As noted in Section 2.3 above, the current system of state-centric protected areas in Borneo is insufficient to guarantee the orangutan's long-term survival. First, the network of protected forests is too fragmented to provide a sufficient area of appropriate habitat for such a wide-ranging species. Second, many protected areas are located in highland areas with steep slopes, not natural orangutan habitat. Third, many of the protected areas are in crisis and: are threatened by illegal activities (including those directly or indirectly related to the oil palm industry such as illegal logging and wildfires); lack the necessary support of local communities; are poorly managed and suffer from limited human resources and chronic underfunding. Fourth, the integrity of protected areas depends on preserving the complex ecological processes that extend well beyond the gazetted borders; thus their effectiveness is also dependent on activities occurring outside of their boundaries.

With ever-growing pressures on land, it is going to be increasingly difficult for governments to expand this network of strictly protected areas. Although legally possible under land law, government acquisition of land from private owners for conservation may not be politically, economically or socially feasible. Furthermore, this approach has rarely (if ever) been tested in Indonesian and Malaysian Borneo.

The limited financial returns (or even financial losses) that states and provinces can expect to make from protected areas can make them difficult to justify in economic terms, especially when authorities receive competing applications for the same land from oil palm, logging and other profitable sectors. This raises questions over the future viability of some protected areas unless alternative funding streams can be found or innovative governance and financial mechanisms introduced. At the same time, the challenges facing protected areas can encourage the further encroachment of oil palm and even calls from decision-makers and private sector actors to downgrade or degazette ineffectively managed protected areas in favour of more economically lucrative plantations – often in areas that should be protected or conserved for orangutans.

Overall, new legal, institutional and financial mechanisms need to be developed to enable and mandate non-state actors to protect and conserve orangutan habitat outside of state-protected areas. Priority should be given to orangutan habitats in areas slated for oil palm, or areas that provide connectivity between other HCV areas in oil palm landscapes.

Designing and gazetting new forms of protected and conserved areas requires clarification of legal claims and titles, negotiation of equitable governance and management arrangements with non-state actors (especially indigenous peoples who wish to retain control over their customary lands) and compensation for land acquired from or voluntarily set aside by private owners such as oil palm companies.

Despite these challenges, explicitly recognising and supporting conserved areas outside of the state-centric protected area network would be a significant step forward for orangutans in Borneo. It would acknowledge the existing and potential

contributions of non-state actors to conservation, especially in areas that are critical for orangutans where government acquisition of land may not be feasible. It would also help Malaysia and Indonesia achieve Aichi Target 11 of the CBD's Strategic Plan for Biodiversity, which aims to conserve at least 17 per cent of the terrestrial area through systems of protected and conserved areas.

Indonesian Borneo

The *Act Concerning Conservation of Living Resources and Their Ecosystems (No. 5/1990)* and the *Forestry Law (No. 41/1999)* provide the main legal frameworks for protected areas in Indonesia (see Table 7).

Table 7. Main types of protected areas and related national laws in Indonesia.

Legal type of protected area	National law under which the protected area is provided
Strict Nature Reserve Wildlife Sanctuary National Park Grand Forest Park Natural Recreation Park	<i>Act Concerning Conservation of Living Resources and their Ecosystems (No. 5/1990)</i>
Conservation Forest Protected Forest	<i>Forestry Law (No. 41/1999)</i>

A key lacuna in the 1990 *Act on Conservation* is its failure to explicitly regulate environmentally sensitive areas (such as wildlife corridors and HCV forests) outside of the state's official protected areas. An amendment to this effect could pave the way for safeguarding key areas of orangutan habitat outside of Kalimantan's strictly protected areas.

Politically, the forest estate has been one of the cornerstones of Indonesia's decentralisation efforts since the early 2000s. Successive government regulations have shifted managerial authority over certain types of protected areas to provincial, district and/or local governments (Ardiansyah *et al.*, 2015; Mardiasuti, 2011). However, this decentralisation of governance and management authority has not always favoured conservation, particularly when it has merely devolved opportunities for corruption to lower levels and failed to address inequalities associated with protected areas (Hollenbach, 2005). Key practical challenges for Indonesia's protected area system include insufficient political commitment and support from the national government; lack of sustainable financing and technical capacity; and insufficient support from and collaboration among local rights-holders and stakeholders, which has contributed to encroachment and conflicts of interest with other sectors (Mardiasuti, 2011).

Malaysian Borneo

Sarawak and Sabah exercise jurisdiction over at least 15 protected area designations under their respective state laws on parks and nature reserves, wildlife, forests, environmental protection and water resources (see Table 8). These laws are the most obvious mechanisms for protecting orangutan habitats in Sabah and Sarawak.

Table 8. Types of protected areas and related state laws in Sarawak and Sabah.

State	Legal type of protected area	State law under which the protected area is provided
Sarawak	National Park Nature Reserve	<i>National Parks and Nature Reserve Ordinance 1998</i>
	Wild Life Sanctuary	<i>Wild Life Protection Ordinance 1998</i>
	Protected Forest	<i>Forests Ordinance 2015</i>
Sabah	Park Nature Reserve	<i>Parks Enactment 1984</i>
	Wildlife Sanctuary Wildlife Conservation Area Provisional Wildlife Sanctuary	<i>Wildlife Conservation Enactment 1997</i>
	Protection Forest (Class I) Virgin Jungle Reserve (Class VI) Mangrove Forest Reserve (Class V) Wildlife Reserve (Class VII)	<i>Forest Enactment 1968</i>
	Environmental Protection Area	<i>Environment Protection Enactment 2002</i>
	Water Protection Area	<i>Water Resources Enactment 1998</i>

Malaysian Borneo: Sabah

In Sabah, orangutan habitat is protected under three main state laws on forests, parks and wildlife conservation. The vast majority of Sabah's protected areas with orangutan habitat within their boundaries are Class I (Protection) Forest Reserves under the *Forest Enactment 1968*.

In recent years, Sabah's state government has significantly expanded its protected area network, especially in lowland forests. The increase in the Permanent Forest

Reserve was primarily due to the re-classification of Class II (Commercial) Forest Reserves – many of which were previously logged over several cycles – to Class I (Protection) Forest Reserves (Reynolds *et al.*, 2011). In many cases, there are significant concerns over the general condition, functionality and connectivity of these severely degraded forests. However, it appears that orangutans can survive even in exploited forests (Ancrenaz *et al.*, 2010). In the absence of poaching, the species can and will benefit significantly from these new and reclassified protected forests.

The Sabah Forestry Department aims to increase the current protected area network – which covered 22 per cent (16,300 km²) of Sabah's land mass as of 2013 – to 30 per cent by 2020 (Othman *et al.*, 2013). It is unlikely that this ambitious target can be met in reality without also recognising conserved areas outside of state-protected areas – for example, HCV areas located within oil palm estates or conserved by indigenous peoples. Any additional protected or conserved areas should aim to provide functional links between currently protected forests to ensure the long-term viability of orangutan populations and their ability to cope with climate changes (Roever *et al.*, 2013).

Nevertheless, despite an overall net gain in protected forests in Sabah, the conversion of native forests to industrial plantations (oil palm and monoculture tree species) is still occurring within forest reserves, protected areas and orangutan range areas more broadly (Othman *et al.*, 2013). This further underscores the need for effective conservation arrangements in areas outside of state-protected areas.

Malaysian Borneo: existing provisions for protected areas remain under-utilised

In both Sabah and Sarawak, state laws provide for various protected area designations and conservation measures that have yet to be implemented.

In Sabah's *Wildlife Conservation Enactment 1998* (amended 2016), provisional wildlife sanctuaries can be declared for up to 120 days when there is an urgent need to save wildlife or wildlife habitat from imminent destruction or irreversible damage. Although this provision has yet to be utilised, it could be an important temporary measure for use in situations where oil palm projects have been started in critical orangutan habitat without proper impact assessments or other approvals. Two additional designations that could be used to help protect orangutan habitat on a longer-term basis – namely, Environmental Protection Areas under the *Environment Protection Enactment 2002* and Water Protection Areas under the *Water Resources Enactment 1998* – have also yet to be utilised.

Sarawak's *Wild Life Protection Ordinance 1998* also includes an important and arguably under-utilised provision concerning areas of 'special interest' for wildlife. Under this provision, the Minister of Resource Planning and Environment may order the owner or occupier of such areas to undertake certain measures to protect or conserve wildlife. This provision could potentially be used to order oil palm estate

managers to set aside or otherwise protect orangutan habitat or populations found within their estate boundaries.

4.6 Strengthening implementation and enforcement of existing species protection laws and action plans

There are close links between habitat loss and fragmentation, poaching and the illegal trade in live animals, which together constitute some of the most significant pressures on great apes (CITES, 2014). It is thus important to consider the extent to which orangutans are protected under species-specific laws and policies.

Both Indonesia and Malaysia are parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Under relevant species protection laws (at the national level in Indonesia and the state level in Sabah and Sarawak), orangutans are listed as a totally protected species, which legally prohibits them from being caught, injured, killed, owned or traded. The respective national- and state-protected area laws provide an additional layer of legal protection for orangutans as endangered species, albeit only within protected area boundaries. On paper, these legal protections are strong and should contribute to orangutan conservation if effectively enforced. Orangutan action plans have also been developed in Kalimantan, Sabah and Sarawak.

Enforcement challenges

Despite these positive steps, species protection laws and orangutan action plans have been undermined by inadequate enforcement, as well as insufficient monitoring of their impact on the protection and conservation of orangutans as a species (Jonas, 2017). Although wildlife agencies in Sabah, Sarawak and Indonesia have respectable mandates and scopes on paper, they often lack sufficient budgets, human resources and technical capacity, particularly to address orangutan killings and the increasingly sophisticated illegal wildlife trade (USAID, 2015). Much could be gained by implementing existing supportive provisions in species protection laws, particularly to combat the poaching and killing of orangutans in and around oil palm estates and smallholdings.

At least two technical legal issues raise further questions about the effectiveness of species protection laws for orangutans. In Indonesia, enforcement of wildlife-related sanctions in plantations that overlap orangutan populations may conflict with plantation laws that do not provide the same protections (Handayani, 2010). Secondly, penalties for wildlife offences are arguably insufficient to serve as effective deterrents. Sentencing provisions should be made more robust, and wildlife agencies should focus on consistent enforcement, with a particular emphasis on poaching and trade syndicates, including by prosecuting offenders in court. In mid-2016, the *Sabah Wildlife Conservation Enactment* was amended to increase penalties for offences, though it is too early to assess the impact on enforcement.

Overall, enforcement of species protection laws is woefully inadequate and convictions for the poaching and killing of orangutans for bushmeat or illegal trade are few and far between. Even if species-specific legal protections were stronger, they would still be inadequate to protect orangutans in practice unless they were combined with the comprehensive protection and conservation of orangutan habitat (as discussed above in Sections 2.3 and 4.5). Species protection laws are thus a necessary but not sufficient component of the legal ecosystem for orangutan conservation in the context of large-scale oil palm.

4.7 Policy and legal mechanisms for protecting primary forests and peatlands from oil palm development

In recent years, Indonesia has introduced – and extended – moratoriums on new location permits for concessions in primary forests and peatland forests. Meanwhile, the World Resources Institute has identified legal options for changing land use classifications to enable companies to pursue voluntary certification of palm oil. Against this backdrop, there are opportunities to strengthen the existing legal framework to restrict oil palm development on peatlands – a critical habitat for orangutans that remains under active threat from expansion.

Moratorium on new concessions in primary forests and peatlands

In May 2011, then Indonesian President Susilo Bambang Yudhoyono ordered a moratorium on new location permits in primary forests and peatlands (*Presidential Instruction No. 10/2011*). The moratorium was extended by two years in 2013 and again in 2015 by current President Joko Widodo. However, high rates of land clearing have continued throughout this period and civil society organisations were disappointed that the 2015 extension did not include more substantive changes to improve its implementation. Key technical loopholes include its lack of application to: existing concessions or concessions already approved ‘in principle’; national development projects; and the extension of existing permits (Lang, 2015). Stakeholders generally perceive the moratorium as an important step to improving forest management, but substantial governance reforms and monitoring and enforcement mechanisms are needed in order to realise its long-term potential (Austin *et al.*, 2012; Murdiyarso *et al.*, 2011). As of late 2016, President Widodo was expected to issue a five-year moratorium on new oil palm plantation concessions, with additional provisions to help address some of the earlier criticisms (Indonesia Investments, 2016). In late May 2017, President Widodo approved a two-year extension to the moratorium (Munthe and Nangoy, 2017) but it is unclear to what extent the necessary reforms were incorporated.

Legal restrictions for oil palm development on peatland in Indonesia

In Indonesia, three key laws regulate oil palm development on peatland and provide important legal levers as well as bottlenecks for the protection of this type of

orangutan habitat. First, peatlands could potentially be categorised as Protection Forest (*Ministry of Agriculture Decree No. 837 of 1980*), but the criteria are too stringent for many peatlands to meet. In the light of this implementation bottleneck, it would make sense to propose easing the criteria for Protection Forests (which cannot be opened for oil palm plantation development) in order to allow for the protection of more peatlands, which are important orangutan habitats and critical carbon sinks.

Second, peatlands with a depth of three metres or more in swamps, and located upstream of a river, must be defined as conservation areas (*Presidential Decree No. 32/1990*). However, the conservation areas had to be gazetted through a *Provincial Decree* within two years of the *Presidential Decree's* issuance. Many peat areas were not identified for conservation in this way, and this *Presidential Decree* was not widely implemented (Wakker, 2014). One possible improvement would be to issue a new decree or a revision of *Decree No. 32 of 1990* to remove all time constraints on the gazetting of such peatlands as conservation areas.

Third, *Ministry of Agriculture Regulation No. 14 of 2009* was designed to promote the further expansion of oil palm plantations within peatlands. It sets out criteria for eligible areas and guidance on conducting development – for example, at least 70 per cent of the area cultivated should comprise peat of less than three metres in depth. The general aim of this regulation gives sufficient cause for concern that it will have negative impacts on peatlands and their orangutan populations. Even if peatlands are technically or scientifically 'eligible' for plantations, this does not mean they should necessarily be developed as such.

Changing allowable land uses in Kalimantan

Picking up on the opportunities afforded by some government initiatives (as considered in Section 4.3 above), as well as private sector demand for voluntary certification, the World Resources Institute identified three key methods for legally changing allowable land uses in Indonesia in order to expand certified sustainable palm oil production and/or conserve forested areas designated for agriculture. They include: (1) methods that change the land use classification of a single area; (2) methods that change the land use classifications of multiple areas simultaneously, also known as a 'land swap'; and (3) methods that change allowable land uses in a special designated local area but do not change the actual land use classifications (Rosenbarger *et al.*, 2013).

However, a land swap pilot with a publicly listed oil palm company in Kapuas Hulu, West Kalimantan, identified a number of legal obstacles, including: lengthy and costly reclassification procedures; lack of legal clarity on classifications, permits and rights; and inconsistency with the twin objectives of maintaining HCVs and avoiding social conflicts (Rosenbarger *et al.*, 2013). This study has important implications for companies and developers that wish to conserve forested areas that are legally designated for agriculture, or to establish Ecosystem Restoration Concessions in forested areas.

4.8 Innovative approaches to the restoration of orangutan habitat

In recent years, Indonesia has established a new legal designation for ecosystem restoration areas and established a new government agency for peatland restoration.

Ecosystem Restoration Concessions

The concept of an Ecosystem Restoration Concession (ERC) first arose in 2002 when bird conservationists suggested applying a forest conservation model in production forests that were highly degraded from timber production.² The legal basis of ERCs was established with a *Minister of Forestry Decree (No. 159/2004)* on ecosystem restoration in production forests, and continued with at least seven further regulations elaborating certain criteria, requirements and procedures. ERCs are intended to restore and continue conserving the ecological functions of important ecosystem areas within production forests. Licences are for a maximum of 60 years (subject to five-yearly evaluations), with a possible extension of 35 years, and may be held by individuals, cooperatives, state-owned enterprises or private companies. As of 2015, four of the 14 ERC licences granted (for a total of 480,310 ha) were located in Kalimantan. At least two of these ERCs have an explicit focus on orangutan rescue and rehabilitation (PT Restorasi Habitat Orangutan Indonesia in East Kalimantan) or conservation (PT Rimba Raya Conservation near Tanjung Puting National Park in Central Kalimantan).

ERC licences provide a legal and economic basis for retaining HCV areas within production forests and plantations. Thus, they offer an innovative 'get-out clause' for companies attempting to fulfil HCV and high carbon stock requirements under voluntary standards such as RSPO, where the dominant land law would otherwise require conversion under productive use requirements (as discussed in Section 3.5). This is particularly important given that an estimated 56 per cent of Indonesia's high biodiversity and conservation value areas (including orangutan habitat) are located in production forests (Silalahi and Utomo, 2014). Through ERCs, the government and civil society organisations have been working to improve peatland management since early 2001, and various companies have made commitments related to peatland protection and restoration in their concessions. Despite a number of strengths, ERCs are also subject to many challenges, including bureaucratic licensing procedures; high start-up costs; a lack of fiscal incentives to develop alternative revenue streams; and overlapping land claims (for more information, see Jonas, 2017).

² Production forests are one of three categories of forests under the *Forestry Law* (No. 41/1999). Their primary function is to produce forest products.

Establishment of a peatland restoration agency

Indonesia recently established a peatland restoration agency (*Badan Restorasi Gambut*, BRG) through *Government Regulation No. 1/2016*, primarily in response to the devastating fires in 2015, which were largely attributed to forest clearance for agriculture, including oil palm (see Section 2.4). Answerable to the Indonesian President, the BRG is mandated to develop and implement restoration plans for approximately two million ha of burned peatland by 2020 in seven provinces, including West, Central and South Kalimantan. The establishment of the BRG is arguably an important institutional development that could place further pressure on the oil palm sector to prevent fires and halt expansion on peatland – a critical orangutan habitat – and also contribute to restoration when it does occur. However, the BRG is expected to face challenges in terms of balancing multiple stakeholders' interests, securing funding and the lengthy time required for restoration (for more information, see Jonas, 2017).

4.9 Innovative approaches to liability and accountability in the oil palm sector

Legislators, judges, lawyers and civil society organisations are taking increasingly novel approaches to try to improve the degree of liability and accountability of oil palm companies and investors; three examples are considered in brief below. Even when they are not explicitly aimed at benefitting orangutans, such innovations still have promising implications for orangutan conservation in the context of large-scale oil palm.

Combating tax evasion in Indonesia

In Indonesia, the government is estimated to be losing billions of dollars per year from tax evasion committed by logging, palm oil and other commodity syndicates (The Jakarta Post, 2014; Vidal, 2014; Suroyo and Danubrata, 2015). A 2012 Supreme Court judgment illustrates how the judiciary is taking steps to combat tax evasion in the oil palm industry in particular (see Box 5).

Box 5. The Supreme Court of Indonesia's efforts to combat tax evasion in the oil palm industry

In December 2012, the Supreme Court of Indonesia found the former tax manager of a major oil palm conglomerate guilty of tax evasion. Court documents showed that he used routine and systematic fraudulent accounting practices involving transfer pricing and a web of shell companies in tax havens such as the British Virgin Islands. He was sentenced to two years in prison and the company faced Rp 2.52 trillion (USD 261 million) in back taxes and fines. The company's former financial controller was separately convicted of embezzlement and sentenced to 11 years in prison in Indonesia.

In 2015, the head of Indonesia's tax office announced plans to crack down on corporate tax avoidance and attempt to recover more than USD 15 billion in lost state income, primarily in commodity sectors such as palm oil and coal. The finance minister also announced that Indonesia would review its bilateral tax treaties and may suspend any that are found to be abused for tax avoidance.

Imposing extra-territorial liability for haze pollution in Singapore

Transboundary haze pollution is a major regional environmental issue in Southeast Asia, largely caused by fires used to clear land for oil palm and other large-scale agribusiness plantations (see Section 2.4). ASEAN adopted a binding Agreement on Transboundary Haze Pollution in 2002 (ASEAN, 2002), but its implementation was hampered for many years by Indonesia's failure to ratify it until 2014. After years of bearing the brunt of haze pollution, Singapore – a key agribusiness investor home state – provided a rare example of legislative innovation with potential benefits for orangutan conservation. Its *Transboundary Haze Pollution Act 2014* imposes extra-territorial civil and criminal liability on entities causing haze pollution in Singapore. Its broad limitations on liability are designed to implicate parent companies in Singapore for the actions of their subsidiaries in Indonesia, though it also claims jurisdiction over non-Singaporean entities causing fires outside of Singapore, for example, Malaysian or Indonesian companies in Indonesia (Tan, 2015). Combined with nascent financial sector sustainability schemes, this could help ensure that investments in host states adhere to stronger and more effective environmental regulations.

Seeking redress through non-judicial and quasi-judicial mechanisms

Finally, civil society organisations are finding increasingly creative ways to use the non-judicial grievance mechanisms of companies, financial institutions and voluntary certification schemes (particularly the RSPO), as well as quasi-judicial mechanisms such as UN treaty bodies, to seek redress for alleged violations of environmental law, voluntary standards and institutional policies (Jonas, 2017). Although there are concerns over enforcement, progressive decisions made by these mechanisms – such as those that hold oil palm companies and investors to account for their impact on orangutans and their habitats – create public awareness and consumer pressure for improved practices. The active use of non- and quasi-judicial mechanisms is an important part of a wider drive to continually push for stronger governmental and private sector regulation of oil palm investors and producers.

5. Conclusions and recommendations: moving forward in policy and practice

5.1 Conclusions

Since the 1960s and 70s, the Bornean orangutan population has declined by between 56 and 71 per cent. In 2016, the IUCN Red List reclassified the species from 'endangered' to 'critically endangered', citing the primary causes of its population declines as habitat loss and fragmentation, illegal hunting and fires (Ancrenaz *et al.*, 2016b).

Large-scale oil palm plantations are one of the major industrial causes of deforestation and are responsible for the significant loss and degradation of orangutan habitat in Borneo. The same areas that comprise the primary habitats of orangutans – namely, tropical lowland and peatland rainforests below 500 masl – are also (technically) the most suitable for oil palm production. Most oil palm expansion – both large-scale and smallholdings – is thus in direct conflict with the protection and conservation of orangutan habitat.

The rapid expansion of large-scale oil palm plantations is the result of a range of broader trends, drivers and enabling factors. First, mainstream national narratives of 'development' and 'sustained economic growth' – which are embedded within national and regional economic policies – underpin a continued emphasis on large-scale plantations and undermine the pursuit of sustainable development. At the domestic level, the dominant production-oriented approach to forests and land aims to maximise economic gain without considering the vast majority of environmental costs. Such policies fail to acknowledge the ecological limits to economic growth and its inherent contradictions with sustainable development and environmental protection and conservation policies.

'Upstream' policies and investments at the international, regional and domestic levels set the stage for large-scale oil palm, long before ground is broken. Investors, stock exchanges and financial institutions in Malaysia, Indonesia and Singapore (the latter being a key offshore hub for oil palm companies) are lagging behind global efforts to address the investment risks of forest-based commodities such as palm oil. However, the nascent narrative around 'forest-risk' commodities highlights the risks of investing in palm oil companies in environmentally sensitive and HCV areas such as orangutan habitat. Palm oil should be reframed as a 'forest-risk' commodity and investors and financial institutions should incorporate environmental, social and governance issues across their investment portfolios and join financial sustainability schemes.

Once investments in large-scale oil palm are set in motion, the political economies and legal machinery in both Malaysia and Indonesia are ripe for illegalities and

the exploitation of legal loopholes – at the expense of orangutan conservation. Productive use requirements in land laws mandate the conversion of most if not all of oil palm estates within certain time periods; if they fail to do so, companies risk losing their licences. A lack of enforcement of existing EIA regimes enables the continued expansion of oil palm in orangutan habitat and opportunities to further strengthen EIA regimes – such as by considering cumulative impacts – have not yet been taken. Provisions for penalties or that support the rehabilitation of damaged areas are insufficiently used in practice. This system allows, and even incentivises, a ‘race to the bottom’.

Despite these challenges, there is still much to fight for. Significant proportions of large-scale oil palm estates overlap with current orangutan range. Much of this habitat has already been cleared but significant areas supporting orangutan populations remain standing in estates that have not yet been fully ‘developed’. If nothing is done to change the current system, it is possible if not likely that all remaining orangutan habitat within oil palm estates will be cleared or severely degraded in the coming years. Finding ways to protect and conserve this habitat before it is cleared is an urgent priority that will have significant implications for the survival of the Bornean orangutan.

Turning to the legal framework for protection and conservation, the current network of protected areas has proved insufficient to protect orangutan habitat against large-scale oil palm. It mostly covers higher altitude areas that do not correspond with orangutan habitat and that are generally unsuitable for oil palm development. As of 2010, only 25 per cent (16.3 million ha) of Bornean orangutan distribution was within some type of protected area. However, these protected areas are still important for orangutan conservation. Nevertheless, they face many challenges in terms of government financing and the enforcement of boundaries against encroachment, or downgrading and degazetting for oil palm. Species-specific protections are relatively strong on paper but enforcement has proved grossly inadequate. Current species and area-based protections are necessary but insufficient for the Bornean orangutan’s long-term survival. Given the significant overlaps between remaining orangutan habitat and large-scale oil palm estates, one priority should be to diversify networks of protected and conserved areas – especially for areas currently allocated for oil palm – and to test innovative designations and financing mechanisms for area-based conservation and restoration that go beyond state-centric protected areas.

Despite these sobering projections, there are some promising developments. Over the past 12 years, the Indonesian government has enacted a number of ambitious commitments, including a spatial planning law and ‘One Map’ policy; a moratorium on new concessions in primary forests and peatlands; a new type of concession specifically for ecosystem restoration; and the establishment of a new peatland restoration agency. Sub-national jurisdictions in Malaysian and Indonesian Borneo have made commitments to producing 100 per cent RSPO-certified sustainable palm oil. Indonesian courts are handing down progressive decisions on

tax evasion and the liability of oil palm company directors. Singapore's domestic *Transboundary Haze Pollution Act* takes an usually proactive step towards extra-territorial liability for oil palm plantations operating in the region. Although these initiatives are not without their limitations, they arguably show that strong political leadership can have a positive catalytic effect on setting ambitious environmental priorities and commitments both internationally and nationally. These efforts need further support to avoid becoming one-off events and to influence the broader system that otherwise enables the 'business as usual' approach to large-scale oil palm.

5.2 Recommendations

This report focuses specifically on policy and legal levers to address the impact of large-scale oil palm on orangutans in Borneo. The preceding analysis and discussion (Sections 2–4) brought to light a number of constraints and opportunities in the legal frameworks and political economies of Indonesian and Malaysian Borneo. Although a wide range of detailed recommendations were identified, only a select number of priorities could be included here. They are consolidated into the following five overarching recommendations:

1. Protect and conserve orangutan habitat within existing oil palm estates and in areas likely to be allocated to oil palm;
2. Strengthen, scale up and institutionalise ambitious sustainability and 'zero deforestation' commitments;
3. Mainstream environmental considerations in oil palm investment and related economic and fiscal policies and laws;
4. Mainstream environmental considerations in land use planning and allocation, licensing and impact assessments for new oil palm developments; and
5. Strengthen and expand mechanisms for enforcement and environmental mitigation in new and existing oil palm estates.

Each targets a certain 'stage' of oil palm investment and briefly describes the context for a select number of specific recommendations. Where relevant, they address one or more key actors – primarily government officials and legislators, and oil palm companies and investors, and to a lesser degree civil society organisations and researchers. These recommendations are by no means exhaustive and none will by themselves address the myriad impacts of large-scale oil palm. In fact, most are closely interrelated and will only be effective if undertaken in concert, using a combination of public sector and private sector measures.

5.2.1 Protect and conserve orangutan habitat within existing oil palm estates and in areas likely to be allocated to oil palm

Not only do state-protected areas cover just 25 per cent of remaining orangutan habitat in Borneo, but a significant proportion of orangutan habitat is located within large-scale oil palm estates that have not yet been fully 'developed'. There is an urgent need for government officials and estate owners to work together with civil society organisations to protect and conserve key orangutan habitat before it is further cleared and to ensure connectivity between fragmented populations.

This will require different strategies depending on the local context in each area, particularly the extent to which the oil palm companies are willing to voluntarily set aside areas of orangutan habitat within their estates; three are considered below. In some cases, existing provisions that remain under- or unutilised to date should be employed. In other cases, new designations may need to be developed and tested as part of broader efforts to diversify governance and management arrangements for protected and conserved areas.

Compulsory acquisition of land for public purpose

Firstly, if the companies are unwilling to voluntarily set aside HCV areas such as orangutan habitat, they are likely to clear the land within their estate boundaries to the fullest extent possible. In such situations, government officials should take a more proactive and direct approach and exercise their existing rights to take the following actions:

- Acquire the orangutan habitat using 'public purpose' provisions in the respective land laws and gazette them as new (or extensions of existing) parks or nature reserves, wildlife sanctuaries and/or forest reserves. Additionally:
- In Indonesia, change the legal land use classifications through mechanisms for land swaps, forest estate gazetting and/or forest exchange (as detailed in Rosenbarger *et al.*, 2013).
- In Sabah, declare 'provisional wildlife sanctuaries' for areas under immediate threat of conversion and gazette such areas as new (or extensions of existing) protected areas, including underutilised designations such as Environment Protection Areas and Floodplain Management Areas.
- In Sarawak, order estate owners to undertake protection or conservation measures under the *Wild Life Protection Ordinance* provision for areas of 'special interest' to wildlife.

In some cases, progressive government officials with environmental agendas may pursue compulsory acquisition of their own volition; otherwise, civil society may need to place significant pressure on officials to take such actions due to potential political and economic risk.

Diversify legal designations and financing mechanisms for protected and conserved areas

Secondly, oil palm companies that are RSPO members and pursuing RSPO certification are required to assess and manage HCVs, including endangered species such as orangutans. In the state of Sabah and the district of Seruyan in Central Kalimantan – which have both committed to producing 100 per cent RSPO-certified palm oil – all oil palm estates within these jurisdictions will have to adhere to the RSPO standard. These commitments – both at an individual estate level and at the government-jurisdictional level – provide clear ‘hooks’ for collaboration between companies, government officials and civil society organisations to better monitor, manage and protect all HCVs. In reality, however, certain government agencies do not support companies that attempt to retain HCV areas; in such cases, civil society organisations need to pressure the government to adhere to their jurisdictional commitments to RSPO certification.

In particular, companies (both certified and non-certified), government officials and civil society organisations should work together to develop innovative legal designations and financing mechanisms for protecting and conserving orangutan habitat: (a) within oil palm estates and buffer areas, particularly habitat that would provide connectivity between other HCV areas in oil palm landscapes; and (b) in state land that currently lies outside of protected areas and will be (or is likely to be) allocated for oil palm in the near future.

These designations should be explicitly provided in the respective land, plantation and forestry laws in each region in Borneo. Leading examples of such designations include conservation covenants and easements and other forms of voluntary set-asides that could become legally recognised and enforceable through written agreements. Depending on local capacities, these could remain under the management of oil palm estates (if concerning orangutan habitat in an estate) or could be leased or contracted to other competent managers and stewards such as civil society organisations or indigenous peoples (particularly if concerning orangutan habitat in customary territories). They could be financed using mechanisms such as:

- Environmental bonds tied to companies’ licences (as in Indonesia’s 2012 *Government Regulation on Environmental Licences*);
- Conservation trust funds, which could be in part funded by fines collected from companies for legal offences and by tourism levies or taxes;
- Compensation funds collected from RSPO members for any instances of clearing land without prior assessment of HCVs (this is a requirement under RSPO’s private standard and will be a core element of Sabah’s and Seruyan’s jurisdictional approaches to palm oil certification); and

- International financing from multilateral sources or results-based payment and market-based mechanisms such as Reducing Emissions from Deforestation and Forest Degradation (REDD) (Abram *et al.*, 2016).

Explicitly recognising and supporting conserved areas outside of the state-centric protected area network would be a significant step forward for orangutans in Borneo. It would acknowledge the existing and potential contributions of non-state actors to conservation, especially in areas critical for orangutans where government acquisition of land may not be feasible and where local communities may be otherwise drawn to smallholder production due to limited income-generation opportunities. It would also help Indonesia and Malaysia achieve Aichi Target 11 of the CBD's Strategic Plan for Biodiversity, which aims to conserve at least 17 per cent of terrestrial area through systems of protected and conserved areas; Sabah has already exceeded this and committed to 30 per cent.

Protect existing protected areas

Finally, government officials should halt and prevent all future downgrading, downsizing and degazetting of protected and conserved areas that contain orangutan habitat. Even though the current protected area network only covers 25 per cent of orangutan habitat, it is still a crucial strategy for protecting current populations and the species' long-term viability. Notably, as species in Borneo are expected to move to higher elevations due to climate changes, orangutan ranges may shift up to existing protected areas that do not currently overlap with orangutan habitat. It is therefore important to ensure those protected areas are still there and have high functionality and connectivity with lowland orangutan habitats and populations.

5.2.2 Strengthen, scale up and institutionalise ambitious commitments to reform the production of palm oil

Positive developments occurring in both Indonesia and Malaysian Borneo need to be strengthened, scaled up and institutionalised in order to transform the system that currently aids and abets the 'business as usual' approach to large-scale oil palm.

Strengthen and adopt additional jurisdictional approaches to palm oil certification

One of the challenges with voluntary certification schemes such as RSPO is just that – they are voluntary. As long as the RSPO remains so, it will only cover a certain percentage of the global supply – currently around 21 per cent – with only certain companies (particularly multinationals) likely to join, and palm oil producers in Indonesia and Malaysia will run up against domestic legal restrictions (particularly productive use requirements) that undermine their attempts to meet the certification standard. Jurisdictional approaches have the potential to bring internationally

certified palm oil to scale by incorporating it into government policies, laws and institutions and mandating a multi-stakeholder governance process.

The state of Sabah and the district of Seruyan (Central Kalimantan) are among the first jurisdictions to attempt to certify palm oil (using the RSPO standard as a minimum) at their respective scales. The stakes are high, as is the potential to play a leading role globally in demonstrating how such processes can and should be undertaken in practice. These should include (at minimum):

- An adaptive process centred around a shared vision and objective;
- A strong multi-stakeholder governance structure and mechanisms for broad public participation and accountability;
- A capable convener and facilitator to keep track of the entire process;
- Champions in the different stakeholder groups (government, private sector, civil society and communities, research) to help drive and continue innovating the process;
- A system for monitoring, reporting and verification that stands up to international scrutiny, including mechanisms to prevent and mitigate 'leakages' from companies entering the certification process at a later stage; and
- A clear understanding of and strategy to address current bottlenecks and opportunities to create an enabling environment for jurisdictional certification, including perverse and positive incentives for investment, and fair and equitable sharing of costs and benefits.

Jurisdictions that have not yet made such commitments should do so and actively exchange with other jurisdictions undertaking similar journeys. If challenges, innovations and lessons learned are shared openly, it can create a positive feedback loop and 'race to the top'.

Extend and strengthen government moratoriums on new plantations in primary forests and peatlands

Indonesia should extend and strengthen its moratorium on new plantations in primary forests and peatlands (including through governance reforms and stronger monitoring and enforcement mechanisms). The governments of Sabah and Sarawak should adopt and implement similar moratoriums in their respective states. This would be particularly useful in Sabah as it pursues its jurisdictional commitment to palm oil certification; for example, a temporary moratorium would enable the multi-stakeholder process to assess the current status of HCV and HCS areas (including orangutan habitat) and identify areas that must not be further cleared without being subject to liability and compensation.

5.2.3 Mainstream environmental considerations in oil palm investment and related economic and fiscal policies and laws

The oil palm industry is more diverse than most people outside of Indonesia and Malaysia realise. Even among large-scale oil palm estates, there are multiple types and sizes of investors, with a mixture of domestic and international, public and private, and various company structures, including joint venture arrangements and multinational conglomerates. Only certain types of companies and investors are currently interested in sustainability commitments; most of the industry fails to address environmental (and social) externalities. For companies and investors, a shift in mindset is required from a 'race to the bottom' to a 'race to the top'. Multiple measures should be taken to build a critical mass of private sector actors ready and willing to institutionalise the business benefits of conservation and environmental protection.

Reframe palm oil as a 'forest-risk' commodity and adopt environmental due diligence and environmental risk management procedures

Investors in oil palm developments often have limited knowledge and understanding of the local context, including the suitability of land for oil palm and the presence of orangutan and other key biological and conservation values; this can lead to serious investment risks, including failed crops and financial penalties for clearing orangutan habitat.

Companies, investors, lenders and financial regulators should reframe palm oil as a 'forest-risk' commodity and incorporate environmental due diligence and environmental risk management procedures across their investment portfolios. Such procedures should include, among other things, undertaking independent EIA, SIA and HCV assessments and developing related management plans, making such assessments and estate maps publicly accessible, and regular non-financial disclosure of environmental, social and governance issues. Such procedures are an integral part of transparency and accountability and reducing investment risk.

Furthermore, companies should account for forests and natural ecosystems as economic assets rather than liabilities. More and more evidence shows the business value of retaining natural habitat within oil palm plantations to sustain production, yields and productivity within an estate (Meijaard *et al.*, 2017a). Civil society and researchers should actively disseminate such findings to industry and government alike in order to shift their mindsets and practices.

Invest in jurisdictions and companies with progressive sustainability commitments

Investors should invest in companies that have robust 'zero deforestation' policies and are pursuing RSPO certification in areas overlapping with orangutan habitat; this would provide an additional layer of protection for such habitat, as the RSPO standard requires assessment and management of HCVs, including endangered

species. Investors and financial institutions should also stop investing in companies that do not adhere to any sustainability policies or standards and that continue to clear orangutan habitat and other HCV areas. This will help reduce financial incentives for continuing with 'business as usual'.

In addition to halting perverse incentives, governments and legislators need to reconceptualise strong environmental frameworks as assets in their quest to attract investment. Until recently, such frameworks had been considered a disadvantage since businesses often incur lower costs in weak regulatory regimes. With attitudes changing among certain investors and investment home states, government officials in Indonesian and Malaysian Borneo could instead present strong environmental frameworks as location-specific advantages for investors. This approach turns environmental and sustainability requirements from obstacles into allies for investors, in effect changing the incentive structure from a 'race to the bottom' to a 'race to the top'.

Having made jurisdiction-wide commitments to producing RSPO-certified palm oil, the state of Sabah and district of Seruyan would be particularly well placed to attract investment from countries with more progressive investment strategies (such as Norway) and countries such as Germany, the Netherlands and the United Kingdom that have adopted their own commitments to importing 100 per cent of their palm oil from certified sustainable sources. Establishing direct investment and trade links between these investors, producers and consumers will enable them to pursue mutually beneficial commitments and objectives.

Eliminate perverse incentives for large-scale oil palm

In order to achieve Aichi Biodiversity Target 3 of the CBD's Strategic Plan for Biodiversity 2011–2020, perverse incentives for large-scale oil palm plantations in domestic investment and fiscal laws and economic policies in both countries should be eliminated. (For example, such incentives are found in Malaysia's *Promotion of Investments Act 1986*, *Customs Act 1967*, *Sales Tax Act 1972*, *Excise Act 1976* and *Free Zones Act 1990*). The subsidies saved should be redirected to public purposes and positive incentives for conservation, including those set out in Section 5.2.1 above.

The biofuel industry in particular should not be used as a basis for the further expansion of large-scale oil palm – especially not under the guise of 'renewable energy'. Civil society organisations and researchers should help nuance domestic narratives that uncritically describe biofuels as 'renewable energy'. Investors should halt all investments aimed at expanding or establishing new oil palm estates for the production of biofuel, and instead invest in downstream processing, including technology that enables the use of waste materials from existing estates.

5.2.4 Mainstream environmental considerations in land use planning and allocation, licensing and impact assessments for new oil palm developments

In addition to investment, economic and tax laws, a number of other types of legislation regulate new oil palm estates in terms of land use planning and allocation, licensing and impact assessments. The respective governments must address bottlenecks and constraints in these laws in order to create an enabling environment for the first three recommendations.

Reform land use planning and allocation practices, including productive use requirements

Time-bound productive use requirements pose a direct legal threat to orangutans and their habitats in oil palm estates (and smallholdings). These requirements are embedded in Sabah's *Land Ordinance 1930*, Sarawak's *Land Code 1958* and Indonesia's *Plantation Law (No. 18/2004)* and *Minister of Agrarian Affairs Decree No. 2/1999*. In particular, the notion of 'productive use' should be reformed to include protection, conservation and restoration of critical habitats and HCV areas. Leases and permits should specifically require the protection and conservation of any orangutan habitat within the proposed estates; this necessitates information sharing and coordination with the respective wildlife departments (as well as relevant civil society organisations and researchers) to identify the location of orangutan habitat and populations and develop management plans.

In Sabah and Sarawak, the respective state governments should review and reform the outdated Land Capability Classification systems for agricultural land allocation. At minimum, they should incorporate HCV assessments using the best available information (including the latest figures on orangutan population and range) and identify areas unsuitable for oil palm due to flooding. In addition, the respective agricultural departments should impose a ban on the planting of oil palm in ecologically sensitive and unproductive areas such as the Lower Kinabatangan in eastern Sabah.

In Indonesia, the government should amend three key laws regulating oil palm development on peatlands in particular:

- Ease the criteria for Protection Forests to allow for the protection of more peatlands pursuant to *Ministry of Agriculture Decree No. 837 of 1980*;
- Issue a new decree or revise *Presidential Decree No. 32 of 1990* to remove all time constraints on gazetting as conservation areas all peatlands with a depth of three metres or more in swamps and located upstream of a river; and
- Repeal *Ministry of Agriculture Regulation No. 14 of 2009*, which was intended to promote further expansion of oil palm plantations in peatlands, and replace it with a new regulation that explicitly prohibits plantations in peatlands.

Address environmental loopholes in company, plantation and licensing laws

A number of loopholes and lacunae should be addressed in company, plantation and licensing laws in both countries in order to ensure coherence with environmental laws.

In Indonesia, this includes:

- Amending the *Company Law* (No. 40/2007) to include explicit references to environmental legislation and other environmental requirements, including under the *Plantation Law* (No. 39/2014);
- Revising *Agrarian Ministry Law* (No. 5/2015) to prevent companies from securing permits for areas larger than the maximum concession area by 'splitting' them under several subsidiaries – for example, by mandating disclosure of parent-subsidiary ownership structures as part of the permit application; and
- Pursuant to the recent *Plantation Law* (No. 39/2014), issuing a Government Regulation for the prevention of environmental damage in land clearance and cultivation, mandating the protection and conservation of HCV and HCS areas in proposed plantations.

In Malaysia, this includes:

- Enacting regulations specifically on environmental matters under the *Malaysian Palm Oil Board Act*, including prevention of environmental damage and conservation of HCV and HCS areas; and
- Amending existing regulations on quality under the *Malaysian Palm Oil Board Act* to require compliance checks with environmental laws.

Address loopholes in EIA regimes

EIAs play an important role in the licensing of oil palm estates. In practice, however, EIA processes are often reduced to a rubber-stamping exercise – the final technical hurdle to clear before investments can proceed on the ground. Loopholes and lacunae in the laws themselves, as well as implementation gaps, must be addressed as necessary complements to the above recommendations on permits and licences.

Both countries' EIA regimes should explicitly require the consideration of HCVs (including protected species such as orangutan) in the assessment process, using the best available information. In addition, whereas Sabah and Sarawak already require EIA reports if more than 50 ha of mangrove swamps (Sarawak) or wetland forests (Sabah) are proposed for conversion into agricultural estates, this mandatory requirement should be adopted in Indonesia's EIA regime and also extended to other threatened ecosystems that include orangutan habitat, particularly lowland and peatland swamp forests.

Similarly to the permit system under Indonesia's *Agrarian Ministry Law* (No. 5/2015), the EIA regimes should be revised to prevent companies from 'splitting' large areas under subsidiaries or individual titles so they can avoid triggering a mandatory EIA. This could be done, for example, by mandating disclosure of parent-subsidiary ownership structures and sub-contracting arrangements. Furthermore, the EIA assessment procedures should require consideration not just of individual project sites, but also of the cumulative impact of all oil palm-related activities in a specific geographical area (such as critical orangutan habitat) and/or all activities of a specific corporate group in the area. Penalties for non-compliance should be raised to increase deterrence and all fines collected should be used for conservation and mitigation measures in the area where the offences were committed.

Finally, Indonesia's EIA regime is more developed than Malaysia's, but little is known about the implementation of the latest legal amendments. Researchers and civil society organisations should document any experiences with recent reforms, particularly the introduction of strategic environmental assessments and the environmental rehabilitation bond scheme. This should help inform the introduction of similar amendments to Malaysia's EIA regime. In particular, Malaysia should introduce the following amendments in order to 'catch up' with Indonesia:

- Enact the existing policy basis for strategic environmental assessments into federal and state-level EIA laws;
- Introduce an environmental rehabilitation bond scheme; and
- Require continual compliance with environmental licences and related conditions in order to obtain and maintain plantation licences.

5.2.5 Strengthen and expand mechanisms for enforcement and environmental mitigation in new and existing oil palm estates

Even if all of the above reforms were enacted, no matter how strong legal protections may be on paper, some degree of non-compliance is almost inevitable. It is therefore important to implement strong measures to support enforcement and mitigate environmental damage, particularly the clearance of orangutan habitat.

In Indonesia, existing mechanisms for environmental restoration and rehabilitation – particularly ERCs, the peatland restoration agency and the environmental rehabilitation bond scheme (under *Government Regulation on Environmental Licences No. 27 of 2012*) – should be further refined in practice. The rehabilitation bond, in particular, has yet to be tested, but it appears to be a promising legal development. These mechanisms should also be adapted to and tested in Sabah and Sarawak, where there are not yet any equivalents.

In Indonesia, the *Environmental Protection and Management Law* (No. 32/2009) should be amended to explicitly refer to environmental damage arising from

activities such as the establishment of plantations, which are permitted under other laws.

In Sabah and Sarawak, several state environmental laws provide for the imposition of fines for offences. The laws – or new regulations they include – should be amended to explicitly require such fines to be used for environmental protection and mitigation activities in the areas affected by the offences.

Investigate and prosecute criminal activity and illegalities in the oil palm industry, including in financing and licensing procedures

At a higher level, the governments' respective anti-corruption commissions should undertake investigations of alleged corruption in the oil palm industry. This should address the role of illicit financial flows (including with Singapore), tax evasion, illegalities in licensing procedures and plantation development, and any linkages with transnational organised crime. They should invite collaboration with the environmental courts and green benches in their respective countries, as well as with UN Environment on its Environmental Rule of Law Initiative and its joint work with INTERPOL on environmental crime. Indonesia and Malaysia could also report on such efforts as parties to the UN Convention Against Corruption. Such efforts would help elevate public perceptions of the scale and extent of these issues and may help to enlist international technical and logistical support in investigations.

As above, any fines and legal awards resulting from investigations should be directed towards environmental protection and mitigation activities in the areas affected by the offences.

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Knowledge
Products

Research Report

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**Land acquisition and rights,
Biodiversity**

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Palm oil is one of the most controversial yet ubiquitous agricultural commodities in the world, used in everyday products ranging from cooking oil and chocolate to toothpaste and soap. Over the past few decades, the palm oil industry has contributed significantly to the economic development of Indonesia and Malaysia, which together produce an estimated 85 to 90 per cent of global supply. However, the industry has also caused widespread deforestation of tropical ecosystems renowned for their extraordinary biodiversity, as well as numerous conflicts with indigenous peoples and local communities.

This report synthesises key findings from a case study that aimed to assess and address the impact of large-scale oil palm plantations on orangutan conservation in Borneo. The case study found that if the current approach to plantations continues, the window of opportunity to protect key orangutan populations and their natural habitat in will close in the near future. However, a number of ambitious private sector commitments and regulatory improvements offer glimmers of hope. If these are strengthened, scaled up and embedded within broader legal and institutional frameworks, they could shift the trajectory of the palm oil industry in Borneo towards more responsible forms of production – including by protecting the significant areas of orangutan habitat within undeveloped oil palm estates.

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