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FISCAL INCENTIVES FOR INDONESIAN PALM OIL PRODUCTION

PATHWAYS FOR ALIGNMENT
WITH GREEN GROWTH

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Top: Christoforus Terry, FAO, Indonesia 2006

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TABLE OF CONTENTS

1. Introduction	9
1.1 Key definitions	9
1.2 Methodology	10
2. Context	12
2.1 Indonesia: the world's largest producer of palm oil	12
2.1.1 International demand	13
2.1.2 Growing domestic demand	13
2.2 Recent environmental and social risks from palm oil production	14
2.3 Indonesia's green economy and livelihood goals	15
2.3.1 Green economy roadmap	15
2.3.2 Climate change commitments	15
2.3.3 Green planning and budgeting strategy	17
2.3.4 National development and palm oil	17
2.4 Other factors influencing forest and peatland decision-making	18
2.4.1 Decentralization and intergovernmental fiscal transfers	18
2.4.2 Resolving land title disputes	20
2.4.3 Historic impacts of palm oil on deforestation and forest degradation	20
2.4.4 Indonesia's forest moratorium and restriction on licensing peat	21
2.4.5 Demand-side sustainability commitments	22
2.4.6 Land swaps	23
2.4.7 Role of smallholders	24
3. Fiscal incentives and palm oil	26
3.1 Overview of fiscal incentives by type	26
3.2 Fiscal incentives at each stage in the palm oil value chain	26
3.2.1 Land access and palm oil production	27
3.2.2 Financing investment in production	28
3.2.3 Downstream sector development	29
3.3 Fossil fuel, demand-side and trade subsidies in the Central Government budget	31
4. Public benefits and risks	34
4.1 Public benefits and risks with current fiscal incentives	34
4.2 Public risks through corruption and illegality	36
5. Prioritizing which fiscal incentives to reform for compatibility	37
6. Pathways forward	39
7. Conclusions	45
8. References	46

LIST OF TABLES AND FIGURES

Figure 1: Analytical framework: Bringing fiscal incentives for palm oil into compatibility with sustainable forest and peatland use

Figure 2: Palm Oil Area in Indonesia (1970 to 2014)

Figure 3: Profit margins of palm oil value chain

Table 1: Types of fiscal incentives

Table 2: Summary of fiscal incentives and palm oil

Table 3: Prioritizing fiscal incentives for oil palm for compatibility with green growth

ACRONYMS

AMDAL	Environmental Impact Assessment	KBNK	Cultivation areas for non-forestry/Kawasan Budidaya Non Kehutanan
APL	Areal Penggunaan Lain – Forest land outside the forest estate	KPK	Anti-Corruption Commission/Komisi Pemberantasan Korupsi
BAPPENAS	Office of State Minister of National Development Planning	MFF	Indonesia's Mitigation Fiscal Framework
BIG	Geospatial Information Agency/Badan Informasi Geospasial	MOA	Ministry of Agriculture/Kementerian Pertanian
BKPM	Indonesia Investment Coordinating Board	MOEF	Ministry of Environment and Forests
BKPRN	National Spatial Planning Coordinating Board	MOF	Ministry of Finance/Kementerian Keuangan
BP REDD+	Badan Pengelola REDD+	MT	Metric tonnes
CGF	Consumer Goods Forum	MRV	Monitoring, reporting and verification
CPO	Crude Palm Oil	SIP	One Licensing Information/Satu Informasi Perizinan
ESDM	Ministry of Energy and Mineral Resources/Kementarian Energi Dan Sumber Daya Mineral	SME	Small and medium enterprise
EU	European Union	RAD-GRK	Indonesia regional action plans to reduce GHG emissions
EU RED	European Union Renewable Energy Directive	RAN-API	National Action Plan on Climate Change Adaptation/Rencana Aksi Nasional Adaptasi Perubahan Iklim
FAO	Food and Agriculture Organization of the United Nations	RAN GRK	Indonesia's National Action Plan on Greenhouse Gas Emissions Reduction
FFB	Palm oil fresh fruit bunch	REDD+	Reducing emissions from deforestation and forest degradation
FREDDI	Indonesia REDD+ Investment Fund	RPJMN	2015-2019 National Mid-Term Development Plan/Rencana Pembangunan Jangka Menengah Nasional
GDP	Gross Domestic Product	RSPO	Roundtable on Sustainable Palm Oil
GHG	Greenhouse gas emissions	tCO₂e	Tonnes of carbon dioxide equivalent
HCS	High carbon stock	TFA	Tropical Forest Alliance 2020
HCV	High conservation value	USDA	United States Department of Agriculture
ICCTF	Indonesia Climate Change Trust Fund	WTO	World Trade Organization
IFC	International Finance Corporation		
INDC	Intended National Determined Contribution		
IRR	Internal rate of return		
ISPO	Indonesian Sustainable Palm Oil		
HPK	Production forest for conversion/Hutan Produksi Konversi		

EXECUTIVE SUMMARY

Fiscal policies and incentives are often key underlying drivers of forest and land use change, though documentation of their impacts on land use is often lacking. This exploration of fiscal incentives promoting oil palm production in Indonesia sought to better understand what current fiscal policies and instruments exist that influence oil palm production in Indonesia, the impacts of these incentives on forests and peatlands and what the Indonesian government could do to create better compatibility between oil palm production, green economy and livelihood objectives. The methods of inquiry included a desk-based literature survey and expert interviews. This report is intended as a scoping of this topic, providing an initial set of options for pathways forward.

Indonesia now accounts for 53% of global production of palm oil. The National Medium Term Development Plan (RPJMN) of 2015 to 2019 seeks national economic growth acceleration through increased production of value-added products and competitiveness of agricultural commodities, including palm oil. The RPJMN also identifies five key sectors to meeting Indonesia's greenhouse gas (GHG) emission reduction target of 26% by 2020, including forestry and peatlands, agriculture, energy and transportation, industry and waste. As the majority of Indonesia's overall GHG emissions come from the forestry and peatland sectors, these sectors are crucial to Indonesia meeting its GHG reduction targets. Doing so, while maintaining the country's 7% yearly economic growth requires careful consideration of how to direct incentives for low-carbon economic growth while supporting equitable growth that raises the standards and performance of smallholder palm oil producers and helps small to medium-sized enterprises grow while sustainably managing forests and conserving peatlands. Meanwhile, domestic demand for palm oil for biofuel is expected to increase considerably, due to the recent decision to direct some of the savings from rescinded fossil fuel subsidies towards biofuels.

The context for evaluating options for government to better align fiscal incentives for oil palm production and green economy objectives is complex. Indonesia's decentralized governance system defers considerable authority to local regents, though regulations enacted in 2014 are changing some of these arrangements. Still, intergovernmental fiscal transfer and revenue-sharing systems, tenure and land title dispute issues, spatial complexity (including aligning spatial information systems, now happening under the One Map Initiative), management complexity between ministries and crucially increasing palm oil yields on existing lands, particularly among smallholders, creates a context for redesign that demands thoughtful balancing between incentives and desired outcomes. Further, interventions must reinforce the ongoing efforts towards sustainability within the palm oil sector such as certification and demand-side commitments.

This research identified fiscal incentives in all stages of the palm oil supply chain, including:

- *Land access:* fiscal incentives include grants, direct payments or in-kind subsidies to producers allowing for access rights, relaxed permitting, reclassification of lands to enable palm oil development. Land access incentives also include decentralisation policies and intergovernmental fiscal transfers.
- *Financing investment in production:* these most often take the form of credit subsidies, government guarantees and tax concessions and include the following: debt restructuring, tax breaks, preferential lending rates, 'production forest for conversion' timber sales and investments in biofuel production.
- *Crude palm oil production:* incentives are mostly grants, direct payments, credit subsidies and government guarantees, comprised of the fertilizer subsidy, interest rate subsidies for developing palm oil seeds and a range of incentives available to Nucleus Estate Schemes.

- *Incentives specific to biofuels*: come in the form of market price support, regulatory and tax concessions, grants and direct support. The following incentives were identified: a biofuel import tariff, Special Biofuel Zones, investment income tax deductions, VAT exemption for domestic biofuel production, Pertamina losses, biodiesel production subsidies, biofuel investment incentives, subsidized fuel policy and biofuel blending mandate.
- *Downstream sector development*: largely takes the form of tax concessions, including differential export taxes on crude and refined palm oil products, cooking oil subsidies, subsidized infrastructure for processing, storage and market access and a tax holiday facility.
- *Demand-side measures*: are briefly mentioned, including the EU fuel-blending mandate for biofuels, EU restrictions on palm oil imports for food and biodiesel and India's import duties on refined palm oil.

The evaluation of current fiscal incentives must include an assessment of public benefits and risks and revisions to current incentives. Design of new incentives should seek to promote public benefits while minimizing risks. Based on an initial framing of public benefits and risks, this research has identified:

- a. Given the high profitability of palm oil production compared to other segments of the value chain, fiscal incentives promoting production are unjustified.
- b. Government has not appropriately captured economic rents from palm oil plantations and analysis is needed to understand how timber and palm oil revenues can be redirected to support the sector's production standards.
- c. New land allocations for palm oil expansion may not be necessary, and continuing fiscal incentives to promote extensive production does not serve the public interest.
- d. Fiscal incentives to promote yield improvements among smallholder palm oil producers can bring significant public benefits, but must be coupled with spatial constraints on expansion.
- e. The current state budget allocation priorities in the agriculture sector may not deliver on sector growth and food security. There also exist significant public risks through corruption and illegality.

The prioritization of which fiscal incentives to reform to create better compatibility between palm oil production and a green economy hinges upon a strategic assessment of points of leverage for the central government, how compliance and enforcement with existing and new laws can be enabled, how to base access to credit and tax incentives on improved palm oil production practices, improving budget efficiency, spatially targeting fiscal incentives and identifying which incentives have the greatest impacts on forests, but also those fiscal incentives that are easiest to reform.

Initial pathways forward are proposed, including:

- Create operational alignment between the 2015 to 2019 National Medium Term Development Plan (RPJMN) and green economy objectives. High-level political commitment is essential to achieve this.
- Given recent decentralization legislation (Law 23 of 2014), identify how incentives and disincentives can effectively function to promote sustainable management of forests, given shifts in responsibility from central government (MOEF) authority and district responsibilities shifting to provincial levels.
- Incorporate a forest and peatland criterion and weight to the intergovernmental transfer formula, for general purpose transfers (Dana Alokasi Umum, or DAU). This revenue-neutral solution would incentivize decisions to keep forests and peatlands intact at provincial and district/city scales.
- Refine tax structures to capture greater public value from oil palm production.
- Bring coherence to APL forest land management and HCV areas management, but consider using spatial and regulatory tools rather than new fiscal incentives for plantation estates.

- Raise smallholder yields and improve livelihoods by linking smallholder access to fiscal incentives and government-facilitated land tenure clarification, putting less emphasis on subsidized inputs and more support to smallholders to access global and domestic value chains. Consider concessional loans made available to certified producers. Identify options to better target independent smallholders.
- Improve land management performance in order to access government incentives by limiting access to credit subsidies and government guarantees through state banks and tax concessions on the basis of performance measures.
 - This can include transfer mechanisms to regional governments screening for compatibility with low-carbon growth objectives, jurisdictional approaches to REDD+ to bundle and spatially direct incentives, targeting incentives towards degraded lands and incorporating performance standards into bank lending (public and private).
 - This can also identify how performance against certification and standards (RSPO and ISPO) can be linked to fiscal incentives such as credit guarantees and tax concessions, as well as differentiated tariffs for certified exports in order to improve palm oil production practices across the sector.

More analysis is needed to evaluate the likelihood of or mechanics of implementing these measures, which should be a priority for the next phase of this assessment.

1. INTRODUCTION

In 2015, Indonesia experienced one of its most devastating peat fire seasons from unsustainable land use and oil palm production. There were considerable human health, livelihood, agriculture, forestry, biodiversity and financial costs. However this peatland management crisis is only one aspect of a much deeper transition in Indonesia's relationship to its forests and peatlands. Indonesia recently unveiled its Green Growth Roadmap to guide how development can support growth without compromising the country's human and natural capital assets.

The National Medium-Term Development Plan already contains the basis for internalizing sustainable development that is compatible with a healthy environment and ecosystems, while also increasing competitiveness of oil palm production and applying certification standards. In late 2015, Indonesia submitted its Intended Nationally Determined Contribution to the United Nations Framework Convention on Climate Change and was party to the historic Paris Agreements on global climate change. The Ministry of Finance is pursuing a Green Planning and Budgeting Strategy for Indonesia's Sustainable Development to improve the alignment of policy and fiscal instruments for smart government expenditure that achieves green objectives while maximizing leverage. All of these important initiatives must adapt to and redefine existing governance and finance frameworks, most of which were developed without sustainability in mind.

This report focuses on fiscal incentives promoting palm oil production in Indonesia and is guided by the following research questions:

What are the current fiscal policies (production related taxes, subsidies and other fiscal instruments) that influence the production of palm oil and complement or work against green economy objectives and sustainable land use management in Indonesia?

What options does the Indonesian government have to reverse this in a way that would minimize political and economic/financial risk? How can these risks be minimized? How can opportunities be maximized?

1.1 KEY DEFINITIONS

This research adopts the Food and Agriculture Organization of the United Nations (FAO), Global Subsidies Initiative and World Trade Organization¹ definitions of a subsidy. The WTO defines a subsidy as a financial contribution by a government or public body, which confers a benefit (WTO, 1994). A subsidy shall be deemed to exist if:

(a)(1) there is a financial contribution by a government or any public body within the territory of a member (referred to in this Agreement as "government"), i.e. where:

- i. (a government practice involves a direct transfer of funds (e.g. grants, loans and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees);
- ii. government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits);
- iii. (a government provides goods or services other than general infrastructure or purchases goods;

1. Article 1 of the Agreement on Subsidies and Countervailing Measures (ASCM)

- iv. a government makes payments to a funding mechanism or entrusts or directs a private body to carry out one or more of the type of functions illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments;

or

(a)(2) there is any form of income or price support in the sense of Article XVI of the General Agreement on Tariffs and Trade, 1994;

and

(b) a benefit is thereby conferred.

The FAO adopted a broader definition (in the fisheries context) than the WTO, defining subsidies as government actions or inactions outside of normal practices that modify - by increasing or decreasing - the potential profits by industry in the short, medium or long term (FAO, 2004). The FAO definition thus includes direct and indirect financial transfers and services, regulations and lack of intervention for purposes of affecting industry profit, which are outside of normal practices. Direct fiscal incentives are those meeting the WTO definition sub-point (i) related to direct or potential transfers of funds or liabilities. Indirect incentives are those that come through various transfer methods including those identified in the WTO definition, sub-points (ii), (iii) and (iv), such as government provisions of good or services other than general infrastructure and government payments to a funding mechanism. This includes the direct and indirect transfer of funds and liabilities, various forms of tax relief, the provision of access to capital, land, water and public infrastructure at below-market rates (which can also include in-kind support), as well as market and price support. This research interprets the FAO definition as including intergovernmental fiscal transfers to jurisdictions which is a significant source of revenue for sub-national jurisdictions in Indonesia. Intergovernmental fiscal transfers can function as a pass-through, giving district governments the means to distribute incentives to the private sector, rather than central government.

Consumption mandates are not included in the WTO definition, yet are a primary means through which government-led demand-side measures influence land conversion activity for commodities (Gerasimchuk *et al.* 2012; Lang, 2010). Therefore, it is highly relevant in the case of palm oil production as palm oil is the primary source of Indonesia's biodiesel. Mandates can have the effect of driving demand and prices, thus improving producer access to capital in financial markets to meet the demand. Thus the Global Subsidies Initiative considers the market price support enabled by consumption mandates to be a subsidy. Consumption mandates are included in this analysis and the focus is primarily on Indonesia's consumption mandates, as that is clearly within government's jurisdiction to address. Other consumption mandates are highly relevant, such as the EU fuel-blending mandates, however, this analysis only briefly touches on consumption mandates outside Indonesia.

This analysis refers to fiscal policies and incentives as all activities captured in the above definitions.

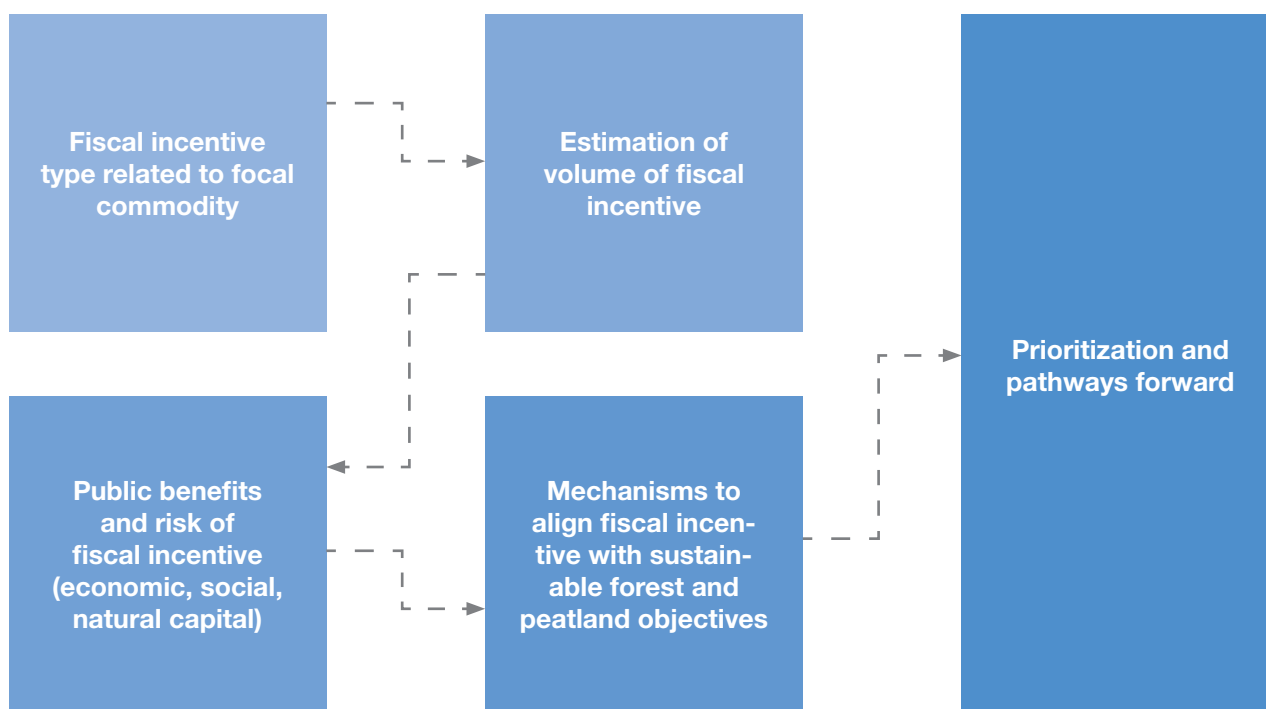
1.2 METHODOLOGY

This analysis relied on a desk-based literature survey and expert interviews, which formed the basis for assessment of prioritizing which fiscal incentives should be further reviewed for reform, pathways forward and conclusions. This assessment builds on research completed in partnership with the Overseas Development Institute, "*Subsidies to key commodities driving deforestation* (McFarland *et al.* 2015)." It is hoped that further research on fiscal incentives for palm oil production assesses the feasibility and mechanics of the recommendations contained in this report, particularly with regard to how the central government can best influence land use decisions through existing and new incentives.

This research followed the analytical framework defined in Figure 1, including, a) the range of fiscal incentive types that are associated with Indonesian palm oil production,

b) the estimation of volume of the fiscal incentive, c) an estimation of the public benefits and risks associated with the key incentives, including consideration of economic, social and natural capital values, as currently known, and d) an investigation of the mechanisms to align fiscal incentives with sustainable land use and green growth objectives. These steps inform the assessment pathways that could be taken by government to reverse or alter fiscal incentives.

Figure 1: Analytical framework: Bringing fiscal incentives for palm oil into compatibility with sustainable forest and peatland use



The remainder of this report is as follows:

- Section 2 summarizes the context, including relevant aspects of Indonesia's green growth and national development plans, economic development plans for palm oil and historic and future impacts of palm oil on deforestation and peatland degradation.
- Section 3 summarizes known fiscal incentives that are believed to be currently in practice.
- Section 4 explores public benefits and risks.
- Section 5 explores the prioritization of which fiscal incentives to reform for compatibility with green growth.
- Section 6 anticipates possible pathways forward to fine-tune fiscal policy for greater policy and fiscal management coherence.

2. CONTEXT

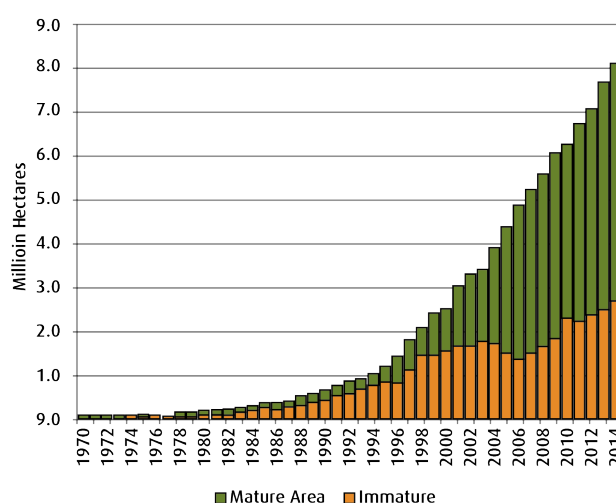
2.1 INDONESIA: THE WORLD'S LARGEST PRODUCER OF PALM OIL

Palm oil comprises roughly one-third of the world's vegetable oil supply and is found in products ranging from food and beverages to soaps, cosmetics, chemicals and biofuels. The oil palm sub-sector in Indonesia contributes to 4.5% of GDP. The commercial production of palm oil in Indonesia increased dramatically between the 1960s and the 1990s, with crude palm oil (CPO) production increasing 12% per year (Barr et al. 2010). In 1996, the Indonesian government sought to increase the development of tree crop industries in order to generate domestic economic growth, export revenues and to facilitate the settlement of more remote outer islands in the archipelago (USDA, 2013). While the early growth of the sector is attributed to strong government support for development of the industry, after the economic crisis of 1998, the government shifted the sector development strategy, liberalizing the sector and seeking greater private investment.

Indonesia now accounts for 53% of global production of palm oil, while Malaysia accounts for 32% (Index Mundi, 2014). Roughly 76% of Indonesia's production is destined for export. The growth of palm oil production in Indonesia was 7.8% per year between 2007 and 2010 (Indonesia, 2011b), though the growth rates are slowing due to European Union sanctions,² the fall in vegetable oil prices, competition from other oils such as soy, Indian import duty increases and slower global economic growth. Current production of Indonesian CPO is 33 million metric tonnes (MT)(USDA, 2014). Indonesia's biodiesel (oleochemical) production has grown significantly since 2010, increasing from 0.89 million MT in 2010 to 3.23 million MT in 2014, with 70-78% of that serving the export market (USDA, 2014).

Indonesian palm oil yields lag behind Malaysia's and behind optimal yield projections. By 2010, palm oil yields averaged 3.8 tonnes of CPO per hectare per year, while Malaysia's productivity reached 4.6 tonnes/ha and estimates of potential productivity based on international benchmarks reach 7 tonnes/ha (Indonesia, 2011b). The primary reasons for low productivity in palm oil production by smallholders include the use of low quality seeds, lack of access to knowledge and technical support, lack of access to capital, poor plantation management and a lack of alternatives to large mills (Sheil et al. 2009).

Figure 2: Palm Oil Area in Indonesia (1970 – 2014)



Source: USDA, 2013 – based on Statistik Perkebunan 2011 and Palm Oil Industry 2013.

2. This includes import duties, sustainability criteria for biofuels and labelling regulations for vegetable oils in foodstuffs that came into effect in December 2014.

According to Statistics Indonesia, large estates accounted for 6.2 million ha and smallholders 4.4 million ha of oil palm planted areas, for a total of 10.6 million ha (Indonesia, 2014c).³ The planted area managed by large estates increased 18% between 2008 and 2012, while planted areas managed by smallholders increased 24% over the same period, which does have fiscal implications as smallholders in Indonesia may be likely to pay land value taxes, but not income tax or capital gains taxes. Between 2011 and 2012, a number of provinces saw increases of over 10,000 ha in one year, including Riau with an increase of 21,000 ha, Sumatera Utara with an increase of 18,000 ha, Kalimantan Tengah with an increase of 17,000 ha, Sumatera Selatan with an increase of 12,000 ha and both Kalimantan Barat and Kalimantan Timur with an increase of 10,000 ha. Riau also saw the largest production increase, with an increase of 99,000 tonnes in 2012. Sumatera Selatan, Jambi, Kalimantan Barat and Kalimantan Tengah also saw significant production increases over the same year (Indonesia, 2013).

Of the total area planted with palm oil, 8.1 million ha is mature 'harvested' area (USDA, 2013). Mature palm oil area increased 106% between 2003 and 2013, with the largest increases occurring since the 2010 forest moratorium intended to restrict the issuance of new permits for land development in protected primary forest and on peatlands, as Figure 2 illustrates.

Significant production capacity exists with the combination of current immature acreage reaching maturity (estimated at 2.7 million ha) and the remaining lands that are in the industry's land bank (estimated at 6 to 7 million ha) (USDA, 2013). Caroko et al found that less than half of the nearly 11 million ha of land that was allocated for plantation expansion has been developed (Caroko *et al.* 2011).

2.1.2 International demand

The growth of the Indonesian palm oil industry was in response to palm oil's high oil content per fruit bunch, increasing demand for edible oils in Europe, emerging markets such as China and India and growing domestic demand for cooking oils and biofuel (Caroko et al., 2011). Oil palm accounts for 34% of all vegetable oil production (OECD/FAO 2014), with India and China buying 38.7% of Indonesia's palm oil exports (Indonesia, 2014c). India is the largest consumer and importer of palm oil in the world, importing over 8 million MT (20% of global imports) in 2012, largely for edible oils and use is expected to grow at 3 to 4% per year (GIST & GCP, 2014). India imported 27% of Indonesian palm oil exports in 2013 (Indonesia, 2014c), though India's recent increase of import duties in order to protect domestic oilseed growers and refiners may decrease imports and spur more domestic production. Malaysia's imports dropped by half in 2013, while Pakistan's imports of Indonesian palm oil increased 80%. Roughly 76% of Indonesia's CPO production is exported (*ibid*).

An 18% drop in oil palm seed sales in 2013 and an expected 6% sales drop in 2014 suggests that Indonesian oil palm will face depressed market conditions in 2015 and biodiesel exports will hold from 2014 levels at approximately 1 billion litres (USDA 2014). Refer to the sub-section on biofuels in Section 2 for more detail on international demand for Indonesian biofuel, and the related demand-side incentives such as fuel-blending mandates, anti-dumping measures that restrict EU import of Indonesian biofuels and other measures.

2.1.3 Growing domestic demand

Domestic demand for palm oil largely serves the growing cooking oil and biodiesel needs of the country. The domestic market claims about 25.7% of total CPO production (Caroko et al., 2011), with cooking oil accounting for three quarters of that domestic demand and the remainder used for domestic biofuels (Chalil 2008). Indonesia's biodiesel program and the growing use of palm oil for food and feed have increased domestic consumption to nearly 10 million MT from 2014 to 2015 (USDA, 2014).

3. These Statistics Indonesia estimates do not include the portion attributable to government. Other estimates indicate it may be 10% of the private sector estimate (Sheil et al. 2009; Caroko, et al. 2011) and the IFC references 2011 Directorate General of Plantations, Department of Agriculture data indicating state-owned plantations produced 9% of CPO that year.

The government's new biodiesel program, introduced in August 2013, raised the mandatory amount of palm oil (fatty acid methyl ester) blended in biodiesel from 7.5% to 10%. Power plants that use biodiesel have a blending amount of 20%. The 2014 USDA Gain Report indicates the Indonesian Palm Oil Association anticipates that the biodiesel sector will procure 3.3 million MT of palm oil in 2014 (USDA, 2014). Indonesia seeks to reduce its oil and gas trade deficit by lowering diesel imports, decreasing its dependency on imported fossil fuels and growing domestic biofuel demand. The original goal was to replace 5 to 10% of the country's fuel and diesel consumption with fuel ethanol and biodiesel between 2006 and 2010. However, the sugarcane sector did not respond as positively to subsidies and as a result, fuel ethanol lags below expectations. Other alternatives, mainly *Jatropha* could not compete against palm oil. Therefore, Indonesia's biofuel production consists primarily of palm oil biodiesel. Regulatory and economic incentives for biodiesel are described in more detail in Section 3. Area requirements for increased biofuel production indicate 10.25 million ha of land required by 2015 and a working group estimated that 27 million ha of 'unproductive forestlands' (degraded forest) could be converted into biofuel feedstock plantations (Caroko et al., 2011).

The short-term outlook indicates that land expansion will remain the primary means of increasing CPO production capacity, while in the medium term, increased integration within the palm oil industry⁴ and development of downstream capacity for oleochemicals and biofuel will continue growth (PwC, 2012). Thus, the importance of identifying how to use already degraded lands and improve yields within existing production areas, in order to limit expansion into forests.

2.2 RECENT ENVIRONMENTAL AND SOCIAL RISKS FROM OIL PALM PRODUCTION

Indonesia's peat fires and related haze in 2015 have resulted in one of the worst environmental catastrophes in recent memory. At least 43 million people were affected by haze impacts in Southeast Asia, 19 deaths were reported, 550,000 people were hospitalized with acute respiratory infections and daily greenhouse gas emissions were greater than the entire US economy. A total of 2.6 million ha burned, with the majority in Sumatra. The World Bank estimates the peat fires cost Indonesia's economy US\$16.1 billion (IDR 221 trillion), based on impacts on agriculture, forestry, trade, tourism and transportation. Putting the scale of these costs in perspective, that amount is double the reconstruction cost following the Aceh tsunami (World Bank, 2015).

The World Bank estimates that losses to agriculture and forestry are 30% of the total losses from peat fires. Costs to the environment (biodiversity and carbon loss, but excluding all other ecosystem services such as water and air quality) were substantial, amounting to 26% of the total (World Bank, 2015).

President Widodo recently signed Presidential Regulation Number 1 of 2016 into law, forming the Peatland Restoration Agency (BRG) on January 20. A priority of BRG is preventing forest fires that particularly occur in peatlands and to restore such areas gutted by forest fires, particularly on Sumatra and Kalimantan Islands (Antara News, 2016). However, the BRG's enabling decree targets a modest 2 million ha for restoration by 2020, which is less than the amount burned in 2015 and far less than the >20 million ha of peatlands Indonesia has remaining.

While not entirely to blame, the lack of enforcement of Presidential Decree No.32/1990 mandating no deforestation on deep peat provided in-kind incentives for companies to log on peat soils. Indonesia's opportunity and challenge now is to redefine the full suite of land use regulations and fiscal incentives that influenced peat clearance.

Refer to sections 2.4 and 4 for more exploration of public risks and also ways to overcome them.

4. Hopefully this would result in an increase in yields. If complemented with measures to restrict expansion into forests and peatlands, this could increase production while reducing the footprint of production.

2.3 INDONESIA'S GREEN ECONOMY AND LIVELIHOOD GOALS

2.3.1 Green Economy Roadmap

Indonesia's green growth roadmap, *Delivering green growth in Indonesia: A roadmap for policy, planning and investment decision makers* released in mid-2015, defines a vision based on practical methods for simultaneously achieving multiple outcomes – sustained economic growth, inclusive and equitable growth, social, economic and environmental resilience, healthy and productive ecosystems and greenhouse gas emissions reduction – for long-term prosperity. The roadmap notes that Indonesia's economic development to the present has been based on rapid expansion of natural resource-based industries, yet poor forest and land use management have damaged ecological functions that provide valuable ecosystem services. Thus, the challenge is “to maintain rapid economic growth with greater resource efficiency, and in an inclusive, people-centered way. This will be crucial to achieving multiple economic and social objectives, including food and energy security, and reducing pressure on the environment and natural resources (Indonesia, 2015a).”

Measures that are identified as urgently needed include:

- Reversing degradation of renewable natural resources, mitigating further environmental damage and rehabilitating or restoring degraded ecosystems.
- Strengthening environmental governance and institutions, accelerating the One Map initiative, moving towards international product certifications and engaging communities in restoring the ecological productivity of terrestrial and marine ecosystems.
- Reshaping national and regional policies, plans and projects to ensure that social and environmental benefits and costs are fully integrated from the start.
- Implementing ecosystem restoration concessions (ERCs) for degraded forests as a preferred means for ecosystem or landscape restoration.
- Implementing the Sustainable Consumption and Production Program, led by MoEF and BAPPENAS.
- Reducing fertilizer subsidy while transitioning farmers to alternative approaches to increase soil fertility
- Improving productivity of palm oil and other food commodities.
- Accelerating international and domestic carbon offsetting, such as Nusantara Carbon Scheme in the short-term and building towards greater mobilization of forest carbon finance, such as from the Green Climate Fund.

Indonesia's green growth scenario shows that reducing the resource intensity of the country's economy is compatible with continued fast economic growth and can be achieved through best practices. The results “...can deliver improvements in income, health benefits, food and energy security, and sustainability—all driven in part by reduced damage to the environment and ecosystems (Indonesia, 2015a).”

2.3.2 Climate change commitments

In December 2015, Indonesia was one of 195 countries that signed the Paris Agreement to keep global temperature rise this century well below 2 degrees Celsius to undertake climate mitigation and adaptation actions through the Nationally Determined Contributions (NDCs) of each country.

In September 2015, Indonesia submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC Conference of the Parties 21, reinforcing its 2009 commitment to a 26% emission reduction by 2020 and 29% emission reduction by 2030 based on a 2010 projected business as usual scenario (Indonesia, 2015b). Addressing forest sector emissions, including land and land use change, peat and forest fires, which contribute 63% to the country's overall emissions (as per Indonesia's Second National Communication to the UNFCCC in 2010), will be

crucial to meet the INDC targets. However, high incidences of peat fires and plans for increased palm oil production to meet recent biodiesel market expansion will jeopardize those goals, unless Indonesia can bring greater coherence to land use activities.

In 2009, Indonesia set a mandate to reduce greenhouse gas (GHG) emissions by 26% from business-as-usual by 2020 on its own and up to 41% with international support (Indonesia 2011a). Indonesia's goal is to achieve such GHG reductions while maintaining 7% yearly economic growth. Indonesia expects an unconditional GHG emission reduction target of 29% of the business-as-usual scenario by 2030 (Indonesia, 2015b). Indonesia's strategic approach to implementing sustainable production and consumption rests upon foundation principles: employing a landscape approach, highlighting existing best practices, mainstreaming the climate agenda into development planning and promoting climate resilience in food, water and energy. This approach also recognizes the need to strengthen sub-national jurisdictional capacity.

At the provincial level, 33 government regulations have been issued on regional action plans to reduce GHG emissions (RAD-GRK). Alongside climate change mitigation, pilot activities on climate change adaptation are already underway in 15 provinces most vulnerable to climate change, in keeping with the National Action Plan on Climate Change Adaptation (Rencana Aksi Nasional Adaptasi Perubahan Iklim (RAN-API)), funded by the Indonesia Climate Change Trust Fund (ICCTF).

Financing climate activities has been a challenge, but appears to be improving. Indonesia's National Action Plan on Greenhouse Gas Emissions Reduction (RAN GRK) identifies forestry and peatland GHG reductions of 672 mtCO₂e in 2020.⁵ In the 2012 budget, the RAN GRK actions received about IDR 15.9 trillion (US \$1.35 billion). Forestry, peatlands, energy and transportation are the focus of the first Mitigation Fiscal Framework (MFF), prepared by the Ministry of Finance and cover 93% of the emission reduction targets. Indonesia is currently working towards meeting its 26% reduction target with its own financing, seeking a reduction in emissions of 767 mtCO₂e in 2020. However, current funding levels fall far short of being able to achieve that domestic target, delivering only about 15% (116 mtCO₂e) of the RAN GRK targets (Indonesia Ministry of Finance, 2012). The MFF recognizes that budget efficiency, public-private partnerships, private sector investment and policies to influence demand for forest and energy products, among other interventions, are needed to complement public expenditure to meet emission reduction targets.

Indonesia's NDC identifies that its pathways towards decarbonization of the economy will be fully integrated into Indonesia's National Medium-Term Development Plan for the period 2019 to 2024.

In 2014, the former Ministry of Forestry issued Ministerial Decree No. 633/2014, which sets Indonesia's forest reference emissions level at 0.816 gigatons per year and is to be based on average emission levels in the period of 2000 to 2006.

The medium-term goal for Indonesia's REDD+ National Strategy (from 2012 to 2020) is: "The implementation of governance systems in line with policies and procedures developed by forest and peatland management institutions, and their application to the spatial and financial mechanisms developed and established in the previous phase, to achieve the targeted 26-41% reduction in emissions by 2020 (Indonesian REDD+ Task Force, 2012, p. 4-5)." Importantly, the Ministry of Environment and Forestry, the Ministry of National Development Planning (BAPPENAS), the Geospatial Information Agency (BIG) and other government agencies are collaborating on the One Map Initiative to create a common platform of understanding issues related to forest cover, land use and administrative boundaries used by various ministries and local governments.

5. Energy and transport have a much lower target of 38 mtCO₂e.

2.3.3 Green Planning and Budgeting Strategy

Indonesia's Green Planning and Budgeting Strategy for Indonesia's Sustainable Development (GPB) was developed as a means to implement the National Action Plan for the Reduction of Greenhouse Gas Emissions (RAN-GRK) by 2020. The plan notes, "It also reflects growing concerns about Indonesia's reliance on natural resources while its environmental carrying capacities decline, and the poor performance of some green policies." The GPB therefore defines policies and defines how they can be implemented in line with the Medium Term Expenditure Framework and performance-based budget system.

The GPB identifies 6 policy areas and 21 priority programmes, with significant focus on forestry, peatland management and agriculture. The strategy identifies general policy instruments and their leverage ratio, as a means to focus fiscal policy away from direct government expenditure to greater use of financial transfers and regulatory policies.

Priority programmes and instruments include the following, which are relevant to forest and peatland management:

- Forestry sector: Improved enforcement and policing of licenses, strengthening forest protection, restoring degraded lands, Trust Fund for Nature/Biodiversity Conservation, land swaps, range of REDD+ incentives, effective measurement, reporting and verification (MRV) 2014 budget allocation IDR 4.5 trillion. Outcome monitoring indicators are: forest area, by type of forest and condition (deforestation rate halved by 2018 and zero by 2030), carbon measurement and Trust Fund establishment.
- Degraded peatland: MoA is tasked with degraded peatland restoration, involving some special policies and budget allocations, regulations to require local governments to fund restoration, matched by special funding from the local and/or the national budget. The outcome sought is relatively small, at 0.1 million ha by 2018 and 0.3 million ha by 2030.
- Oil palm (in agriculture sector): seeks to put into practice land swaps, phasing out oil palm production on peatlands, more flexible biofuel contracts with Pertamina and anti-dumping trade policies. Resources allocated in 2014 were IDR 0.7 trillion and 10% of crop productivity. Outcome and monitoring objectives sought to include RSPO certification, increasing from 28% today to 35% in 2018 and 50% in 2030, oil palm area increased on degraded land, palm oil yields and biodiesel production (Indonesia Ministry of Finance Fiscal Policy Agency, 2015).

The GPB strategy projects that total GDP under a business-as-usual scenario would be 6% lower by 2020 and 19% lower by 2030. The strategy also notes that Indonesia must close the gap between green GDP and conventional GDP, to ensure that the achievement of high-income status is not dependent on unsustainable natural resource use (Ibid).

2.3.4. National development and palm oil

In January 2015, President Joko Widodo signed Presidential Decree No 2 on the National Medium Term Development Plan (RPJMN) 2015 to 2019 which builds on the Nawa Cita (Nine Priority Actions). The RPJMN identifies the overall development goals and commitments during the period. It outlines key elements in Indonesia's development process, broadly categorised into three sections: political sovereignty, economic independence and cultural integrity. The RPJMN internalises sustainable development for people and society; to improve welfare, prosperity and productivity in an equal manner; to improve people's productivity at the lower middle segment; and to do so in a way that does not endanger the environment, ecosystems and degrade the earth's carrying capacity. Section 6.6.8 specifically seeks national economic growth acceleration through increasing the production of value-added products and competitiveness of agricultural commodities. This section of the plan identifies a goal of increased certification for agricultural exports. The production targets for palm oil start with 29,344 thousand tonnes in the baseline year of 2014, increasing to 36,420

thousand tonnes in 2019, an average increase of 4.3% per year. The RPJMN notes the need for more value-added oleochemical processing and exports of value-added products (Indonesia, 2015c).

Since 2011, the government has worked aggressively to promote the downstream palm oil industry and introduced progressive export taxes and tax breaks to spur downstream processing investment (Government Regulation 52/2011 on Investment Tax Exemption). The Ministry of Industry announced in September 2014 that US\$2.7 billion was invested in downstream processing capacity between 2012 and 2014. The result was a dramatic increase in production capacity:

- Domestic cooking oil facility capacity increased 73% to 45 million tonnes
- Fatty acid capacity increased 47% to 1.1 million tonnes and fatty alcohol capacity increased 85% to 1.2 million tonnes
- Biodiesel capacity increased 57% to 5.67 million tonnes (Yulisman, 2014b).

The RPJMN also identifies five key sectors salient to meeting Indonesia's GHG emission reduction target of 26% by 2020, including forestry and peatlands, agriculture, energy and transportation, industry and waste.⁶

2.4 OTHER FACTORS INFLUENCING FOREST AND PEATLAND DECISION-MAKING

A range of other factors influence forest and peatland management decisions and this section is intended to expand upon these, but not offer an exhaustive inventory.

2.4.1 Decentralization and intergovernmental fiscal transfers

Local decision-making is both informed by the legislation and spatial plans that generally define allowable uses of land and the incentives at local levels that drive licensing and permitting decisions. Decentralization and the intergovernmental fiscal transfer system is explored briefly below, along with the discretion allowed to resolve land title disputes.

Over the last twenty years, the central government has given far more power to local governors and regents (*bupati*'s) authority to promote regional development and to give longer-term assurance to companies with regards to their investments in land and production, starting with the 1993 National Deregulation Policy Package (Colchester *et al.* 2006). More recently, the 2004 Law No. 33 on fiscal balance between the central and local government mandates that revenue sharing occur between local and central government for specific natural resource activities, including forestry. The law does not mandate revenue sharing for agricultural concession use such as oil palm production. Thus, as local governments are not obliged to share revenue with the central government for oil palm production, local governments are likely to prefer oil palm production over forest use, though indications are that the revenue local governments see from oil palm are negligible (Falconer *et al.* 2015). The amount of revenue local or regional governments can capture from oil palm is local revenue that is not subject to revenue sharing (identified in the legislation as *Pendapatan Asli Daerah* (PAD)) such as local tax, levies and regional wealth management. Funds from the state budget that are allocated to regions and subject to revenue sharing is *Dana Bagi Hasil* (DBH). The very function of PAD is to give authority to local governments to fund the implementation of regional autonomy in a more decentralized manner than existed prior to the 2004 law (Indonesia, 2004a). However, with the enactment of Law 23/2014 (for which the election of district and provincial head articles have been replaced by Government Regulation in lieu of Law 2/2014), these arrangements are changing. In particular, the right to manage production forest, recommend/issue licenses in forest lands

6. References Presidential Regulation No 61/2011 on the national action plan to reduce GHG emissions (RAN-GRK); Presidential regulation No 71/2011 on the national GHG emission inventory; and Presidential regulation No 80/2011 on climate change mitigation funding.

and manage production and protection forests have been re-centralized through the enactment of law 23/2014 on Regional Governance (Indonesia, 2014b).

In contrast, district governments receive a smaller share of revenues from forest land. Forest land revenue sharing varies between the different types of receipts. Receipts from the forest concessions (Iuran Hak Pengusahaan Hutan (IHPH)) and (Provisi Sumber Daya Hutan (PSDH)) generated in a region are shared, with 20% going to the central government and 80% to the districts, whereas receipts from the Forest Reforestation Fund see 60% going to the central government and 40% to the region (Indonesia, 2004a). Although district governments capture a smaller portion of tax revenues than the central government, district governments derive more from plantations than logging. Therefore, they have a financial incentive to seek the conversion of forests to plantations (Irawan *et al.*, 2013). Land moved out of the forest estate becomes part of the district (as per Agrarian Laws) and thus becomes taxable for land value tax, creating an incentive for local governments to support such reclassification. Note, however, that the revenue localities receive from the land value tax is relatively low, so may not be an incentive (Falconer *et al.* 2015). The decentralization policy also gives discretion to local governments to create new policies to support their economic development and this is attributed to the large expansion of oil palm plantations in Riau Province (Ramdani & Hino, 2013).

Besides revenue-sharing arrangements (DBH), Indonesia's intergovernmental fiscal transfer system also provides funding to local levels through grants, either as general purpose transfers (Dana Alokasi Umum (DAU)) or specific purpose transfers (Dana Alokasi Khusus (DAK)). Intergovernmental fiscal transfers hold great potential to better address fiscal imbalances between provinces and recent findings indicate that the introduction of a 'protected area'- based indicator into the fiscal needs formula can be more equalizing (both in efficiency and distributive equity) than existing general purpose transfers (Mumbunan *et al.*, 2012). This can be an important tool to incentivize local jurisdictions to spare forests, while still promoting palm oil production.

The recently-adopted RPJMN Five-Year Economic Development Plan 2015 to 2019 on fiscal policies (section 6.6.7) focuses on improving the quality of state expenditures and optimization of financing risk management and debt, particularly the ramping down of energy subsidies, continued decentralization through local taxes and levies (PDRD) and improved local capacity and accountability (Indonesia, 2015c).

Paoli *et al* (2013) decipher three spatial scales where oil palm licensing and plantation development occurs:

1. Spatial planning decisions (macro-scale)
2. Oil palm licensing decisions (meso-scale)
3. Plantation planning decisions (micro-scale)

While spatial planning decisions at the macro-scale are influenced by legislation and plans by a range of ministries such as the Ministry of Environment and Forestry, Ministry of Agriculture (related to forest land outside the forest estate, called APL (other land use) lands) and the Office of State Minister of National Development Planning (BAPPENAS), decisions on licensing and permitting occur at the meso-scale and are therefore made by local governments. Thus, central government spatial planning decisions, development plans and other guidance is interpreted and implemented at the district government level, ultimately giving the regency head considerable discretion over how these decisions are made.

Pre-licensing decision-making includes a requirement for district government to consult local communities before location permits (Ijin Lokasi) are determined, but there is no consistency in the application of this requirement (Paoli *et al.* 2013). Also of importance is the ruling by Indonesia's Constitutional Court (MK35 of 2012) which resulted in hutan adat (customary forests) no longer being categorised as state forests, potentially providing indigenous communities greater rights of access to and management of these areas, though this ruling is still being interpreted. Further, almost 100% of palm oil concessions are inhabited by local people in Indonesia (Alforte *et al.* 2014), which illustrates the importance of community consultation. More information

will be needed to assess how this overlaps with other interests, such as conservation, production and conversion of forests and ongoing processes to resolve land title disputes. This should also be considered in the context of land swaps and how new fiscal incentive structures could be envisioned as part of rationalizing rural land use and improving smallholder palm oil production standards.

2.4.2 Resolving land title disputes

Indonesia's Plantations Law (Law 18 of 2004, with the last revisions in Law 39 of 2014) places the burden on the applicant to conduct public deliberations regarding customary law and customary rights to land if a dispute exists and to obtain agreement on the resolution of land rights for purposes of establishing plantations and cultivating the land (Indonesia, 2004b).

Regulation 98 indicates that plantation companies with land titles but lacking a plantation business license must obtain the business license (an IUP-B, IUP-P or IUP) by the end of 2014, otherwise they risk having their land title revoked. Plantation companies with a processing business license (IUP-P) must own plantation areas adequate to supply a minimum of 20% of their processing needs by 2016. The regulation gives great discretion to companies to resolve any land title disputes, mandating that plantation companies with a license that have developed their production on an area without valid land titles (could also be state-owned land) must resolve these land title disputes within two years, in order to obtain their Cultivation Right on Land (HGU). Thus, discretion is left to the company to resolve title disputes and government will simply review what the company submits.

2.4.3 Historic impacts of palm oil on deforestation and forest degradation

From 2000 to 2010, Indonesia lost 820,000 ha of forest per year, accounting for roughly 56% of total forest cover loss in Southeast Asia (Stibig et al., 2013). Deforestation patterns have seen a shift from forest clearance for timber and fiber in the 1990s to those activities being one step in the process towards other uses, with oil palm production dominating. A recent study found 98% of clearing in primary forests between 2000 to 2012 in Indonesia occurred within degraded ones, indicating that logging preceded conversion processes (Margono et al., 2014). Similarly, Caroko et al found 66% of oil palm plantations have been developed through forest conversion, with 63% of that occurring in secondary forests and scrub (Caroko et al., 2011), indicating a pattern of establishing oil palm plantations in forests previously degraded by logging. In Kalimantan, between 1990 and 2010, 90% of lands under oil palm cultivation were formerly forested: 47% were intact forests, 22% were logged and 21% were agroforests (Gerasimchuk and Koh 2013).

Importantly, lands within the forest estate (Kawasan Hutan) are not the only forests, as forests also exist in the non-forest estate (called Areal Penggunaan Lain or APL), such as agricultural plantations. Forest area is divided into conservation, protection and production forest (as per the Forest Act No 41 of 1999). Within the production forest category, sub-categories exist including permanent production, limited production and convertible production. It is the convertible production category that the Ministry of Environment and Forestry can draw from to allocate forest for conversion to agriculture, oil palm plantations or estate crops. Critical lands are those that are severely degraded with loss of vegetation cover restricting natural functions. Forest clearance for oil palm production can occur on convertible production forest (Hutan Produksi Konversi), which transfers forests to the non-forest estate, on oil palm plantations that contain forest and through a range of activities, including plantation expansion, illegal occupancy and cultivation by smallholders and other means. Almost 40% of total primary forest loss within the national forest estate occurred in the production and conversion forest management categories. Limited production forests, which restrict clearing, experienced 22% primary forest loss, while conservation and protection forests that have a management mandate to prohibit clearing saw 16% of primary forest cleared (Margono et al. 2014). Between 2000 to 2010, Sumatra, Kalimantan, Sulawesi, Moluccas and Papua lost 14.7 Mha of forests in total, of which

11% was in oil palm plantation concessions (Abood *et al.* 2014). The provinces of Kalimantan on Borneo experienced the largest forest loss within oil palm plantations, amounting to 22.8% of total forest loss. In Sumatra, forest loss in oil palm plantations was the second largest cause, at 9.3% of total forest loss. Abood *et al.* note that almost half of Indonesia's deforestation from 2000 to 2010 occurred within industrial concession⁷ boundaries.

The types of forest cleared for oil palm development are highly relevant, with indications that carbon-rich peat soils and primary forests see far more expansion activity than already degraded land. Margono *et al.* (2014) assessed cloud-free Landsat land cover data for Indonesia for the years 2000, 2005, 2010 and 2012 and found significant primary forest⁸ loss totalling over 38% of overall forest loss from 2000 to 2012. The forest loss increased by 47,600 ha per year over the twelve year period and by 2012 exceeded Brazil's rate of deforestation by double. An increasing trend of wetland primary forest loss was observed, particularly in Sumatra, possibly indicating the near depletion of lowland forests. This loss of peatland compared to intact forest is corroborated by findings by Ramdani and Hino (2013) in Riau province, which found clearance in peatlands accounted for 70% of all clearance for palm oil development between 2000 to 2012. Twenty one percent of oil palm plantation concessions are located over peatlands and 8% are located over deep peat, which are those with greater than 3 metre depth, although Indonesian law prohibits deforestation on deep peat⁹ (Abood *et al.* 2014), as reaffirmed by Government Regulation 71/2014, which has raised concern over the potential impacts of current palm oil investments.¹⁰ Oil Palm production on deep peat tends to have limited economic viability, but carries large public costs through peat fires, haze and GHG emissions. The large amount of peat clearance for oil palm production and expansion is the primary reason why related GHG emissions are so high compared to other global commodities that impact tropical deforestation. In 2009, Indonesian palm oil production contributed 204 mtCO₂ of GHG emissions, second only to Brazilian beef (Persson *et al.* 2014).

2.4.4 Indonesia's forest moratorium and restriction on licensing peat

Indonesia's Presidential Instruction No. 10 of 2011 established a two year moratorium on the issuance of new licenses and concessions in primary forests and peatlands in various forest categories,¹¹ based on the Indicative Map for Suspension of New Permits (President of Indonesia, 2011). This commitment was renewed in 2013 and again in May 2015. Is the moratorium an adequate tool to limit oil palm expansion into carbon-rich forests and peatlands? Two key agencies overseeing oil palm production and expansion activities, the Ministries of Agriculture and Energy and Mineral Resources, are not directed by the Presidential Instruction. Further, the moratorium allows for exceptions for activities related to food and energy security,¹² which creates loopholes that could undermine the suspension of new concession licences (Murdiyarso *et al.* 2012). Analyses of the moratorium and Indicative Moratorium Maps raise concerns that most primary forests and peatlands that are not already subject to leases and concessions do not receive additional protection by the moratorium. This is due to confusion over definitions (of 'primary forest' and 'primary natural forest'),¹³ pre-existing exemptions and inclusion of already protected conservation and protection forest areas (Saxon and Sheppard, 2012). The Presidential Instruction

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7. Including oil palm plantation, logging, fiber plantation (pulp and paper), and coal mining concessions.
 8. Defined as mature natural forests of 5 ha or more, retaining the natural composition, including intact and degraded types. Note the primary intact and primary degraded forest cover types in this study correspond to the Indonesia Ministry of Forestry's primary and secondary forest cover types.
 9. Decree of the President of the Indonesian Republic No.32/1990 concerning Management of Protected Areas. See: <http://metroballi.com/2014/10/04/pp-gambut-ancam-investasi-sawit-rp-136-triliun/>
 10. Includes: conservation forest, protection forest, production (limited production forests, forest production of regular / permanent, convertible production forest)
 11. Both Ministries of Agriculture and Energy and Mineral Resources are not directed explicitly, and the section grants exemptions to licenses that would serve activities of "vital national development, namely: geothermal, oil and gas, power generation, land for rice and sugar cane." Sugar cane, along with cassava, is widely used for bioethanol, as a petroleum substitute.
 12. The terminology applied in the Presidential Instruction excludes secondary forests or converted forest, which may be well-suited to be managed as forest rather than converted to other uses
 - 13.

applies to 42.6 million ha, but does not include secondary forests and those not under the Ministry of Environment and Forestry's control. The moratorium has also been criticized for not carrying the weight of law behind it, as it is a non-legislative document and there are no legal consequences if its instructions are not implemented (Murdiyarso *et al.* 2012).

Indeed, the findings by Margono *et al.* mentioned above and information from the United States Department of Agriculture's Foreign Agricultural Service indicates that the rapid expansion of oil palm plantations in Indonesia was unhindered by the 2011 forest moratorium, as total area expanded 630,000 ha per year between 2011 and 2013, much more than the average 500,000 ha per year growth rate over the previous ten years (USDA, 2013). Commercial oil palm companies and smallholder farmers continued to increase the area cultivated to oil palm on existing concessions, pulling land into production from primary forests in wetlands and in land uses meant to limit or prohibit clearing (Margono *et al.* 2014).

In 2014, government announced that it would proceed with plans to clear 14 million ha of degraded forest from 2010 to 2020, for purposes of infrastructure, energy and food supply (Jakarta Post, 2014).

The severity and human deaths attributed to the peat fires of 2015 caused President Widodo to announce no more licensing for peatland concessions on 23 October 2015 (Koswaraputra, 2015). Estimated emissions due to peat fires exceeds 1.6 gigatons, which is more carbon dioxide equivalent emissions than Japan releases in a year by burning fossil fuels.

2.4.5 Demand-side sustainability commitments

On the demand-side, brand manufacturers have identified significant reputational risk in sourcing non-certified or non-traceable palm oil. The Consumer Goods Forum (CGF), comprised of more than 400 retail and brand manufacturers globally, pledged in 2010 to mobilize resources within member businesses to achieve zero net deforestation by 2020. Palm oil is one of five priority commodities the CGF is targeting. Catalyzed by the CGF, the Tropical Forest Alliance 2020 (TFA), a public-private partnership with the Governments of the United States, United Kingdom, Norway and the Netherlands and numerous NGOs, seeks to work with private sector actors to address deforestation pressures in four key commodity value chains, including palm oil. The Government of Indonesia actively engages with the TFA.

Wilmar International's (a TFA partner) commitment in 2013 to ensure its own oil palm production and upstream suppliers comply with its "No Deforestation, No Peat, No Exploitation Policy" was a significant step. Wilmar controls 45% of the global production of and trade in palm oil. The policy seeks no development of High Carbon Stock (HCS) forests, no development of High Conservation Value (HCV) areas (including non-forest HCV areas), no burning and progressive GHG emissions reductions on existing plantations and mill operations. The provisions seeking no development on peat apply regardless of peat depth and seek to apply RSPO best management practices for existing plantations on peat¹⁴ and for crop rotations on peat nearing the end of their cycle, options for peat restoration will be pursued (Wilmar, 2013). However, the policy only applies to new areas developed after 5 December 2013 (Wilmar, 2014).

Other key actors in the global palm oil supply chain have made purchasing commitments. Unilever's commitment is to purchase all palm oil from sustainable sources by 2015 and to purchase all palm oil sustainably from certified, traceable sources by 2020 (Unilever, 2014). Unilever accounts for roughly 3% of the world's total production.

The Roundtable on Sustainable Palm Oil (RSPO) and Indonesian Sustainable Palm Oil (ISPO) are seeking to increase sustainability in palm oil production in response to concerns from buyers. The RSPO seeks to provide a global standard for sustainable palm oil and to provide HCV set-asides. Currently around 8.2 million tonnes of palm

14. RSPO does not prohibit development on peat, rather guides producers to minimize impacts. See: http://www.rspo.org/file/RSPO_BMP_1_Update_24_April_2013_small.pdf

oil is certified (15% of global demand), 3.8 million tonnes (46.8%) of which comes from Indonesia (GIST and GCP 2014). Half of RSPO certified palm oil remains unsold because of its slightly higher cost to buyers. The Government of Indonesia's ISPO standards were introduced to improve the competitiveness of Indonesian palm oil on the global market and contribute to Indonesia's objectives to reduce greenhouse gases emissions. ISPO seeks to ensure producers are compliant with current laws. ISPO has the potential to strengthen decision-making at the oil palm permitting stage, by influencing company decisions about whether to proceed with seeking high-risk licenses, given future challenges of attaining legal compliance for requirements formalized under ISPO (Paoli et al 2013).

Protecting HCV forests is a key goal of current demand-side efforts seeking sustainable palm oil production, yet current regulations and practices obstruct HCV set-asides. Companies that set aside HCV areas run the risk of government taking it back on the basis that it is not in production, as Government Regulation No 11 of 2010 allows the government to practice 'abandoned land control' by declaring land abandoned that is not in production for the use intended for three years. Once declared abandoned, the land comes under control of the state. However, partial areas identified as abandoned in a concession could be brought under control of the state, and the title or concession holder may be regranted a plot (Indonesia, 2010). Wilmar identifies the challenges of HCV areas running the risk of being considered abandoned lands, which is confirmed by the new plantation law (Law 39/2014), that protection is a challenge due to adjacent communities considering non-planted land as idle and therefore viable areas for encroachment and set-asides are targets for illegal logging (Siburat *et al.* 2011). Peatlands could be demarcated as high conservation value forests as part of best management practices of existing sustainability certification initiatives (Paoli et al 2013), but mechanisms are still needed to define how they will be managed. As the Ministry of Environment and Forestry does not have a mandate to work in these lands, forest protection policies outside of the forest estate should be created, as none currently exist.

2.4.6 Land swaps

Land swaps have been explored as a means to address how to consolidate or bring better management to the large amount of forest land outside of the forest estate, to address how high conservation value forest blocks within concessions can be allowed under existing law and to identify options for the exception to be made to the forest moratorium on the basis for food and energy security being approved. With roughly 35% (26.8 Mha) of Indonesia's remaining forests being located within industrial concessions (timber, fiber, palm oil, etc.) (Abood *et al.* 2014), the scale of need to better manage these areas is quite significant.

The REDD+ National Strategy identifies the priority of "preparing mechanisms and regulations for reclassifying forested land and/ or peatland outside of designated forest areas, which have the potential to become REDD+ locations, as permanent forests. This includes facilitating land swaps for forested/peatland areas which are currently under licence for forestry or other land uses (Indonesian REDD+ Task Force, 2012)." This is clearly a more coherent approach than delegating the responsibility to license holders. The most often referenced pilot of a land swap by interviewees is the one facilitated by World Resources Institute, Sekala and PT Smart, one of the world's largest publicly listed palm oil producers. PT Smart held a location permit on forested peatland that was classified as non-forest estate. The intent was for PT Smart to engage a land swap to change the legal land use classification and use rights in order to not develop the forested area for oil palm, and instead, develop a comparable area that was supported by the local community for palm oil and considered degraded by RSPO standards. The experience demonstrated that despite alignment between the company and community, they face substantial legal challenges to reclassify lands in a way that is economically viable (this swap carried an estimated cost of US\$200,000, which is significant), has government support at the necessary levels and within key departments, can be completed in a timely manner, could ensure adequate community involvement and be adequately spatially defined (Rosenbarger *et al.* 2013).

2.4.7 Role of smallholders

Smallholders have an increasing role to play in oil palm production, as their share of total production increased between 2000 and 2011 from 27% to 38%, and yet their yields and sustainable production practices underperform compared to plantation schemes (Molenaar *et al* 2013). Anecdotal evidence suggests that forest and peat clearing should decline as part of large palm oil company commitments to more sustainable production standards and pressure from buyers to meet zero net deforestation goals. Yet smallholder clearing is accelerating, and a large amount of their production is processed by smaller mills serving the domestic market.

Smallholders have different relationships to land, production and market access for their palm oil fresh fruit bunches (FFB):

- Tied smallholders (also referred to as plasma) are those that transfer a portion of their land to a larger estate plantation production company (a nucleus estate or 'Inti'). The farmers' remaining land is also planted by the production company, but is retained as individual smallholdings by the farmers (referred to as 'plasma'). These are essentially outgrowers with a contractual arrangement to supply FFB to the company mill. The company can provide technical assistance, seedlings, etc. The International Finance Corporation (IFC) Smallholder Diagnostic Survey identified that tied smallholders that sell FFB to a cooperative receive roughly 33% higher prices than independent smallholders selling to traders, pointing to a large disparity between the two types. Two current types of plasma schemes are defined through legislation:
 - Revitalization and *Revitalization Pola Kemitraan* which are private sector driven partnership models
 - *Perusahaan Inti Rakyat – Kredit Koperasi Primer untuk Anggota* (PIR-KKPA), first introduced in the 1990s, which is more decentralized than earlier governance models
- Independent smallholders are those not contractually bound to an estate or CPO mill and therefore free to sell their FFB to any buyer.
- Those with a mix of both (Molenaar *et al.* 2013).

Two other types of smallholder arrangements are observed:

1. Profit Sharing Plasma: in which farmers "lend" their land to the plantation company or Inti for development, receiving a share of the profits in return. In this scenario, ownership stays with the farmer, whose interests may be represented by a cooperative, while the Inti bears investment costs.
2. A Modified PIR – Trans Plasma arrangement, in which a farmer does not transfer assets to the Inti, yet due to the contractual arrangement, farmers are obliged to sell their FFB only to the Inti. Lease arrangements are defined for the land and the palm plantations (PwC, 2012).

Oil palm plantation development has seen increasing control by private sector actors over the supply of FFB production such that the role of smallholders has shifted from outgrower to worker and, increasingly, to shareholder. Many hybrid arrangements exist, depending on the region and location (Molenaar *et al.* 2013).

Current plantation business license rules define the obligations that plantation companies have with area smallholders and communities. Regulation No 26 of 2007 put in place important provisions that were further revised by Ministry of Agriculture Regulation No. 98/Permentan/OT.140/9/2013 on Guidance on Licensing Plantation Businesses. Regulation 98 was intended to maximise land usage and open up the sector to smallholders (Reuters, 2014b). The regulation mandates that a plantation company applying for a plantation (IUP) or cultivation (IUP-B) license, with a total plantation area of 250 ha or more, and without secure land title, must facilitate the development of community plantations for the surrounding community, to be at least 20% of the total plantation area, and yet exist outside of the company's plantation area.

This appears to be unchanged and consistent with the 2007 guidance.¹⁵ Companies are exempt from this if they have pre-existing licenses and have already participated in the PIR-BUN (*Perusahaan Inti Rakyat Perkebunan*), PIR-TRANS (*Perusahaan Inti Rakyat – Transmigrasi*) or PIR-KKPA or other nucleus-plasma arrangements. Provision of plantation area for the surrounding community can take place through credit, grant or profit-sharing models, among others. The fact that Regulation 98 gives great discretion to companies to resolve any land title disputes deserves further exploration to ascertain how this affects smallholders and communities. While the mandated provisions for plantation companies to create partnerships with communities can benefit communities and smallholders, the regulation mandates that plantation companies with a license that have developed their production on an area without valid land titles (could also be state-owned land) must resolve these land title disputes within two years, in order to obtain their Cultivation Right on Land (HGU). **Such discretion given to license holders, without government oversight, may disadvantage those with competing and perhaps valid claims, who lack the means to assert their rights to land and business permits.**

Government is encouraged to consider granting customary tenure rights, give greater support for independent oil palm smallholdings, address the imbalance in plantation-smallholder relations and pay particular attention to the gender inequalities that plantation development and tied smallholder schemes have encouraged. Research on gender aspects related to smallholders and plantation workers involved in oil palm production in West Kalimantan offers insight into how the palm oil plantation industry and tied schemes have altered what were formerly more equitable customary land use arrangements. These new arrangements largely disempower women (unless they are independent smallholders, which have more autonomy). The recognition of men as heads of households in tied smallholder schemes excluded the majority of women from ownership, an outcome quite out of step with Malay and Dayak cultures in this region of Kalimantan, in which women often held customary status as landowners and were involved in various production processes (farming, rubber tapping etc.). Women inherited an equal share of land from their parents and once married, were co-owners of property acquired in marriage. However, in such tied smallholder cases, Malay and Dayak women smallholders would out of necessity cede 66% of their land rights to companies and 33% of their land rights to their husbands, leaving them with no land ownership or control (Li, 2015).

The IFC Smallholder Diagnostic Survey identified four key strategies to improve smallholder performance, one of which is improved access to finance and increased investments in the enabling environment. The study finds a significant positive relationship between yields and access to finance for independent smallholders, but a negative relationship for tied smallholders. The study also finds that while access to finance promotes intensification, it also promotes expansion. This could be interpreted as indicating a strong need to complement access to finance for smallholders with spatial constraints on expansion. The report emphasizes the importance of investments in enabling environment, such as a new distribution point for fertilizers or a credit facility, which may spur farmer investments in better management practices. Though the report does not identify how subsidies or fiscal incentives could be designed to better support sustainable production and yield increases, it is clear that existing government financing through technical assistance (though extension services generally do not focus on oil palm) and off-farm infrastructure is inadequate. Thus, there is great potential to consider how fiscal policies and incentives can be created that are specifically attuned to smallholder production systems, to incentivize smallholder certification to ISPO and RSPO standards and help to steer farmer investments towards more sustainable palm oil production.

15. Refer to Indonesia Ministry of Agriculture, 2007

3. FISCAL INCENTIVES AND PALM OIL

Known fiscal incentives that encourage or influence palm oil production expansion in Indonesia are summarized below. The methodology for assessing the range of fiscal incentives was to collect as much information as possible, through conducting expert interviews and a comprehensive literature search, which builds upon McFarland, Whitley and Kissinger, 2014. Results were filtered against the WTO and IIED/Global Subsidies Initiative definitions of fiscal incentives. Further investigation of the authorization of subsidies through national laws and regulations was completed, though not in a comprehensive manner. Subsequent phases of this research should include a thorough review of existing statutes and provisions, preferably in close conjunction with all relevant ministries.

3.1 OVERVIEW OF FISCAL INCENTIVES BY TYPE:

The fiscal incentive types included in this assessment include:

Table 1: Types of fiscal incentives

Type	Explanation and <i>example</i>
Grants and other direct payments	Transfers to companies or producers to cover specific costs, payments or vouchers to consumers to cover a portion of costs (such as for cooking oils) <i>Cooking oil subsidies, subsidized land, fertilizer subsidy, inputs (planting materials, herbicides), rural development grants</i>
Tax concessions	Tax exemptions, credits or deferrals <i>Income tax deduction, lower foreign taxes, accelerated depreciation and amortization, loss-carry forward provisions, VAT exemption, biofuel import and stamp duty relief, tax holidays</i>
In-kind subsidies	Non-monetary benefits that confer a benefit on the recipient; e.g. privileged access agreements for harvest rights or concessions, publicly-funded research providing private benefit. <i>Streamlined land and permit access, corruption, labour and land access from PIR programmes</i>
Cross-subsidies	Market transfer or price discrimination within the scope of one unit; e.g. electricity and irrigation use within a public utility
Credit subsidies and government guarantees	Below-market interest loans, underwriting risk and loan guarantees, incentives promoting foreign investment <i>Loss compensation, concessionary interest rates</i>
Hybrid subsidies	Tax-free bonds, tax increment financing
Derivative subsidies	Compensatory or countervailing support, subsidy clusters
Procurement	Preferential public purchasing, special financing arrangements
Market price support (in the producer country)	Deficiency payments or artificial price support to cover the gap between target price for a good and actual market price <i>Fuel blending mandates</i>

Source: Adapted from IISD: <http://www.iisd.org/gsi/subsidy-types>

3.2 FISCAL INCENTIVES AT EACH STAGE IN THE PALM OIL VALUE CHAIN

Though this review focuses primarily on the production stages of oil palm development, it is helpful to identify the range of public fiscal incentives that occur at all stages, including investment, land access and incentives that are allowed when plantation assets are immature versus those allowable once plantations are mature

and commercially producing CPO. Mention will also be made of fiscal incentives recently implemented to help spur development of downstream palm oil production, which is particularly relevant for biofuel, cooking oil and other oil distillate processing. At each of these stages below, identification of the type of fiscal incentive will be made, based on the types identified in Table 1 above. An overview of fiscal incentives reviewed is summarized in Table 2, found at the end of this section.

3.2.1 Land access and palm oil production

As mentioned above in the section The importance of local decision-making, land access for oil palm development occurs at local levels and the incentives that inform local decision-making are nuanced. Interview results indicate that permit/license costs, corruption costs (bribes and associated payments) and compensation payments to communities for their support of palm plantation development are considered to be marginal. Further, there are cases of local agents who specialize in licensing and permitting completing the due diligence and processing on behalf of companies, then passing on complicated or flawed agreements. The conversion of natural forests to oil palm plantations provides additional profits for plantation companies due to revenue generated from the harvested timber during land-clearing, which leads companies to seek acquisition of areas larger than that intended to be planted (Irawan, 2013). This is clearly a perverse incentive. Social and gender aspects related to land access are also highly relevant, as identified by Li (2015).

Relaxed land tenure and licensing processes and the reclassification of lands to enable oil palm development have provided in-kind subsidies which directly benefit larger-scale oil palm producers. In the 1990s, concession allocations were given to foreign estate crop companies. Allowances were made to establish plantations on 'non-productive production forests' and the consolidation and streamlining of investment procedures and permitting was facilitated by the Indonesia Investment Coordinating Board (BKPM). Decentralization policies helped spur these activities due to the authority allocated to the district level for authorizing land acquisition. Corruption has also played a role, allowing logging and sale of timber, before the granting of plantation permits (Fortin, 2011; Environmental Investigation Agency, 2014). The ease by which one can obtain a land clearing permit compared to a logging permit has created a perverse incentive by which promises of oil palm development are used to gain access to timber and then the land is abandoned after the timber has been cut and sold (Sheil, et al. 2009). Companies can also use the sale of timber from conversion forests to finance plantation development (Dillon *et al.* 2008), which can be considered a cross-subsidy. Other circumstances see perverse incentives to develop plantations on the basis that forest function may be changed 'if the criteria for certain forest functions are no longer met' in 'production forest for conversion' classifications (Caroko et al., 2011). This has allowed logging companies to overharvest or clear forests, then convert the land to plantations and in some cases set fires to degrade land to obtain a land use permit, rather than driving that investment towards already degraded lands and away from primary forests (Sheil et al. 2009).

While concerns have been raised about the size limitation for land licenses and lease agreements causing confusion (PwC, 2012), the Ministry of Agriculture revised its regulation No. 98/Permentan/OT.140/9/2013 on Guidance on Licensing Plantation Businesses, stipulating that a plantation company can have a maximum of 100,000 ha of plantation area in one province. However, Indonesian listed companies are exempted from the rule and the size limitation does not apply to majority state-owned companies.

As Table 2 indicates, there are also specific fiscal incentives that seek to promote yield improvements, including the fertilizer subsidy, an interest rate subsidy for developing palm oil seeds and the financing arrangements made possible through the Nucleus Estate Schemes (NES) (Perkebunan Inti Rakyat (PIR)). These are discussed further in the next section on benefits and risks related to fiscal incentives, as some incentives for increasing oil palm production yields, especially among smallholders, carry significant public benefit. Yet the current agricultural subsidy framework does

not deliver the increases in yield, food security or transparency that is required. A significant amount of the subsidies directly to farmers are 'hand-outs' such as inputs, equipment and infrastructure, which tend to facilitate farmers to expand production.

3.2.2 Financing investment in production

Anecdotal evidence from expert interviews indicates that the lucrative profits associated with oil palm production creates a context in which larger production companies may often not need government credit to expand production. Larger companies are able to access credit in the supply chain, and if bank financing is required, it is readily available. The picture is quite different for tied and independent smallholders. Tied smallholders may be able to access financing through their Inti-plasma arrangements, particularly to help bridge the gap between planting and harvests, while independent smallholders lack these arrangements.

As Table 2 indicates, the primary types of fiscal incentives supporting production include tax concessions, in-kind subsidies, credit subsidies and government guarantees. Subsidies to capital (such as concessionary loans, credits and direct transfers) appear to be larger than those provided to land or labour (Dillon *et al.* 2008), though capital subsidies are easier to quantify. Again, Indonesia's interest in liberalizing the plantation sector and encouraging greater private investment after 1998 meant that the design of fiscal incentives focused on enabling private sector finance flows. However, given the high profitability of palm oil production, it is unclear how necessary these incentives are. Further, Articles 42 and 43 of Indonesia's 2004 Plantation Law, contains guidance on appropriate financing arrangements to support plantation business development, encouraging finance be sourced from plantation businesses, public agencies, domestic and foreign funding and governments. The government encourages and facilitates the establishment of appropriate financial institutions to serve plantation development needs, at all levels. Further provisions required for financing are intended to be determined through government regulations (Indonesia, 2004b).

The largest Indonesian bank is state-owned Bank Mandiri, which is the largest lender to palm oil production activities. A national program launched in 2007 to support bio-energy development and plantation revitalization (KKPN-RP) saw lending commitments to palm oil development from a number of banks totalling US\$3.2 billion, of which Mandiri committed to disburse US\$916 million (Jakarta Post, 2012). According to an unverified Reuters story, of the US\$5.3 billion Bank Mandiri lent to agro-industries between January and July 2014, the majority of that went to the palm oil sector, totalling US\$4.6 billion (Reuters, 2014a). While it is unknown what Bank Mandiri's current lending is to small and medium enterprises (SMEs) and cooperatives, Mandiri's loans to SMEs in 2012 reached US\$2.5 billion, with indications of future increases. These are subsidized loans at five-year terms, with interest rates of 11%, 4% of which is subsidized (Jakarta Post, 2012), though the Bank Mandiri website indicates subsidized interest rates are applicable only during the development period and the interest rate for farmers is 10% (Bank Mandiri, 2014). With palm oil prices in a temporary decline, there is a concern in the banking sector of "asset quality risks," particularly related to smaller plantation owners struggling to break even. Loans to the oil palm plantation sector account for 9% of total loans by Indonesian banks (Grant, 2014). More information is needed to understand the effectiveness of these loans, particularly to the growing number of SMEs, and whether subsidized interest rates results in greater access to finance, whether that access also increases expansion activity and to what extent loan performance relates to land management practices.

Companies investing in certain business sectors¹⁶ and/or in certain less developed regions that have high priority on a national scale can take advantage of corporate tax facilities, if 80% of their investment plan has been reached. These include: a) an additional net income reduction, up to a maximum of 30% of the amount of investment, to be charged at 5% per annum for six years, b) accelerated depreciation

16. Including: food; textiles; chemical substance and its product; forestry and logging; coal and lignite mining; oil, natural gas, and geothermal mining.

and amortization, c) the loss carry forward period being extended up to ten years, and d) the income tax on dividends at 10%, unless the relevant tax treaty stipulates a lower rate (Deloitte 2012). Further, relaxed foreign ownership rules have attracted capital, with foreign investors able to hold a maximum of 95% of a joint venture for oil palm plantations (Caroko et al., 2011, Presidential Regulation No. 36 / 2010). While there had been a proposal debated in Parliament in September 2014 to restrict foreign ownership of plantations from 95% to 30%, that clause was dropped from the final plantations bill, which still does allow for foreign ownership of plantations to be capped through government regulations (Reuters, 2014b). The 'Emergency Plan' released in July 2014 allows for further tax allowances and tax holidays, though details of the plan were not reviewed as part of this research.

3.2.3 Downstream sector development

Oleochemical processing

Indonesia has tried to develop the downstream palm oil industry to create local added value, while also increasing exports of CPO and palm oil derivatives. The Ministry of Industry attributes the US\$2.7 billion in investment in downstream processing between 2012 and 2014 to the 2011 tax policy revisions (Yulisman, 2014b). Most investments have occurred in North Sumatra. Information from the Ministry of Agriculture indicates that refining milled CPO into palm oil distillates oleochemicals and biofuels can add significant value at each step in the value chain. An example of palm oil downstream processing facility returns in the Industrial Area of Tanjung Api-api in South Sumatra demonstrates how lucrative investments can be. A refinery for cooking oil is estimated to have an internal rate of return of (IRR) of 42%, making it possible to recover investments in only four years, while a biodiesel factory expects an IRR of 39%, making it possible to recover investment costs in only 2.2 years (Ministry of Agriculture, 2013). The Ministry indicates profits ranging from 20% for olein and stearin to surfactants, emulsifiers and soap realizing 300% gains, while cosmetics can reach 600%. However, the more sober profit estimates indicate that investors are put off by the low margins of refineries (US\$10/tonne), compared to the very lucrative margins in the plantation and milling stage of the value chain (US\$350/tonne) (Indonesia, 2011b). The low margin of refinery investments is attributed to the surplus of refining capacity. Though refining capacity levels of 18 to 22 million tonnes of CPO in 2008 were sufficient to process all CPO produced, by 2010/2011 capacity stood at only 50% utilization (Indonesia, 2011b), and yet Indonesia's palm refining capacity has continued to grow dramatically. Indonesian palm refineries were expected to operate at 50 to 60% of their capacity in 2014, as installed capacity outstrips crude palm oil production (Taylor and Supriatna, 2014).

The Indonesia Investment Coordinating Board (BKPM) seeks to boost domestic and foreign direct investment in downstream palm oil industries by creating a conducive investment climate and facilitating Public Private Partnerships (PPPs). A March 2014 powerpoint presented by the BKPM identifies incentives available to downstream investments, including tax allowance for certain business fields and/or certain areas for all palm oil downstream industries, tax holidays for pioneering investments, freedom of import duties on importation of machines, goods and materials for construction and development of industry and restructuring the export tax for CPO and related products (Indonesia Investment Coordinating Board, 2014). The BKPM shares one example in the sub-district of Mandor, in the Landak regency in West Kalimantan, noting the role of provincial government in managing the land regulation and investment aspects, while the investor manages the development of business units. In this example, the investment is shared on a 50% - 50% basis between the two.

The Industry Ministry is looking into further tax breaks for higher, value-added palm products and evaluating the existing palm oil export tax structure with an internal decision for review by other Ministries in 2014 (Supriatna and Taylor, 2014).

Biofuels

As mentioned above, Indonesia's support for biofuel development stems from its desire to reduce Indonesia's oil and gas trade deficit by lowering diesel imports and decreasing its dependency on imported fossil fuels. Indonesia developed an initial vision for biofuel expansion in its National Energy Policy passed in 2006, which sought to diversify energy supplies and create a biofuel blending mandate of 5% by 2025 (Presidential Regulation No. 5/2006). This was revised in 2008 (Regulation No. 32/2008) to include an escalating percentage of biofuel blending mandates, reaching 25% by 2025. The Global Subsidies Initiative estimated that between 2006 to 2008, total government allocations for biofuel development were US\$1.6 billion (including Pertamina's losses of US\$40 million), though actual disbursements might have been closer to US\$197 million (Dillon *et al.* 2008). The subsidized fuel blending volume and rate was adjusted in 2013 as part of the Draft of National Budget Plan (RAPBN) of 2014, with the proposed rate of US\$0.25 per litre. One interviewee noted that when palm oil prices are low, the central government requests Pertamina to increase the palm oil content of biodiesel (the allowed volume), which in turn provides a price signal for producers to continue expanding, and thus acts as an indirect fiscal mechanism that influences deforestation rates.

The blending mandates apply primarily to transportation sector use, with only a portion being utilized by industrial diesel use, though power plants are directed to increase their share. The Ministry of Energy and Mineral Resources Regulation No. 25 of 2013 seeks to diversify domestic biodiesel consumption beyond the transportation sector. Current biodiesel consumption in the transportation sector was expected to be 1.644 billion litres in 2014, based on the current 10% blending rate. It is believed that Pertamina's ongoing programme to expand biodiesel distribution to Kalimantan and Sulawesi and increased overall diesel consumption over the next year will result in a target of 2.061 billion litres of biodiesel being reached in 2015. Overall biodiesel production is expected to reach 3.65 billion litres in 2014 and 4.15 billion litres in 2015, with the large majority coming from palm oil,¹⁷ as no other viable non-palm oil feedstocks exist.

Biodiesel exports are expected to stay constant at roughly 1 billion litres, due to the 60% drop in imports from the EU in response to non-tariff trade barriers imposed by the European Commission and ample domestic sources of biofuel in North America. The European Union continues to be Indonesia's most important export market for biodiesel, as exports to India, China, The Philippines, Thailand and Japan are relatively small and highly variable (USDA 2014).

The European Union Renewable Energy Directive (RED) established mandatory national targets consistent with a 20% share of energy from renewable sources and a 10% share of energy from renewable sources in transport in overall EU energy consumption by 2020 (EU, 2009). However, the EU RED, as originally defined, created perverse incentives through their primary influence on crop-based fuels (Gerasimchuk and Koh, 2013). The types of incentives included exemptions from excise and pollution taxes, as well as consumption and fuel-blending mandates (Gerasimchuk and Koh, 2013). The demand spurred by the directive and associated incentives caused direct and indirect land use change for establishment of biofuel feedstock plantations, resulting in GHG emissions and biodiversity losses. As a result, the European Commission revised the EU RED through a set of sustainability criteria (Caroko *et al.*, 2011) and anti-dumping measures. Anti-dumping measures were imposed on Indonesian palm oil (an import duty of 18.9% and valid for five years)(European Commission, 2013), which will lower biodiesel exports to the EU from Indonesia.

Between the 2006 and 2008 legislation promoting biofuels, the Indonesian government provided a range of special incentives to investors, all of which appear to be current. These include a) nominal stamp duties, b) agreements with 50 countries on the avoidance of double taxation, c) relief from import duties, d) investment tax allowances in the form of taxable income reduction up to 30% of the realized investment spread over six years, e) accelerated depreciation and amortization, f) a loss carried forward facility for a period of no more than ten years, g) a 10% income tax on dividends,

17. Note that one metric tonne of CPO produces 905-1,016 litres of Fatty Acid Methyl Ester (biodiesel).

possibly lower if stipulated in the provisions of an existing applicable tax treaty, and h) selected strategic goods exempted from the Value-Added Tax. Further, a Foreign Direct Investment (FDI) company may be established with foreign and Indonesian partners or with 100% foreign ownership for a period of up to 15 years, after which 5% ownership must be divested to Indonesia indirectly to the domestic stock exchange (Asia Pacific Economic Cooperation, 2008).

Further, Indonesia created Special Biofuel Zones (SBZs), which identified areas of at least 10,000 ha on Java or 100,000 ha outside Java that are suitable for biofuel development. The SBZ streamlines the process of investing in biofuel by acting as a one-stop for issuing licenses and permits for investors (Asia Pacific Economic Cooperation, 2008).

Biodiesel is expensive to produce and subsidies do not significantly offset the high production costs. In 2008, Pertamina's production cost for one litre of biodiesel was US\$0.74; the government subsidy was US\$0.08; and market price was US\$0.35 (Caroko et al., 2011). However, Pertamina's losses effectively comprise an additional subsidy (Dillon *et al.* 2008). By 2012, the subsidy had reached US\$0.25 per litre, with a total allocation of 900,000 kilolitres, for a total expenditure of approximately US\$222,000 (IDR 2.7 billion) (Yulisman, 2013b). In 2013, the subsidy was raised further, to US\$0.29 per litre (Slette and Wiyono 2014). In the 2015 Revised State Budget (RAPBN-P) bill, the Energy and Mineral Resources Ministry proposed an increased subsidy for biodiesel from the current US\$0.12 per litre to US\$0.39 and from US\$0.16 per litre to US\$0.23 for bioethanol, increasing biofuel subsidies by US\$1.1 billion over the previous years budget (Jakarta Post, 2015).

3.3 FOSSIL FUEL, DEMAND-SIDE AND TRADE SUBSIDIES IN THE CENTRAL GOVERNMENT BUDGET

Subsidies comprised a disproportionate amount of the 2014 budget, with 18% of total government spending going to subsidies, the largest of which goes to fossil fuels. The budget allocated US\$31 billion for energy subsidies, and all other non-energy subsidies amounted to US\$5.9 billion (Cabinet Secretariat of Government of Indonesia, 2014a).¹⁸ In the past, roughly 80% of the energy subsidies would go towards fuel, which was criticized by former President Yudhoyono as benefitting the upper-middle class who own cars and motorbikes,¹⁹ rather than low-income groups. Despite the political sensitivity of taking on the issue, President Joko Widodo increased gasoline and diesel fuel prices by 30% or US\$0.16/litre²⁰ in late November 2014. The Ministry of Finance identified the need for accelerated removal of energy subsidies over time and the introduction of carbon pricing back in 2009, noting that the high fuel subsidies sent the wrong market signals and creates no pressure to reduce GHG emissions (Indonesia Ministry of Finance, 2009). Further, with such a large portion of the budget going towards fuel subsidies, less money has been available for other investments to promote economic growth, infrastructure development or welfare. The government also faces a need to identify new or larger sources of revenue, particularly as the tax ratio against the GDP is low. It only reaches about 12.3% (Cabinet Secretariat of Government of Indonesia, 2014b). However, there are concerns that the recently announced shift in subsidies from fossil fuels to palm oil and sugar cane-based biofuels will accelerate deforestation and divert needed revenue from other underfunded areas in the budget (Jakarta Post, 2015).

The 2015 budget allocated US\$1.3 billion to the Ministry of Agriculture, with a policy objective of increasing the added value and competitiveness of agricultural products.

The export tax²¹ for CPO and its products has been used to increase the availability of palm oil for domestic use, thereby restricting exports and encouraging downstream industry development and as a means to stabilize the supply and the price of palm oil in

18. The budget deficit in the 2015 state budget draft amounts to IDR 257.6 trillion or 2.32 percent of the gross domestic product (GDP).

19. The Global Subsidy Initiative cites a 2006 Indonesian government report which found that 60% of Indonesians in the highest income bracket received 83% of the fuel subsidies, while the 40% of people in the lowest income bracket received only 17% of the subsidies (Dillon *et al.* 2008).

20. <http://www.bbc.com/news/business-30092295>

21. BKPM also refers to this as 'custom exit.'

Indonesia. Therefore, the government changed the export tax structure in 2011, making the export tax for downstream products lower than upstream products to support the development of downstream industries for CPO. However, when CPO prices are depressed, lowering or eliminating export taxes can increase exports. The five-year low price of CPO and Malaysia's recent scrapping of their export tax drove Indonesia to announce in late September 2014 its intention to cut the export tax to zero, in order to boost exports (Rousmana *et al.* 2014). This was to counter action taken in January 2014 by Indonesia's largest buyer of palm oil, India, which raised its refined palm oil import tax to 10% from 7.5% to protect local oilseed growers and refiners against cheaper supplies from Malaysia and Indonesia. Due to its lower duty on overseas CPO sales, the move is anticipated to impact Malaysian exports less than Indonesian exports, which has a higher duty (Prusty and Dutta, 2014). Indonesia sets the monthly export tariff according to a formula based on average prices of CPO and palm kernel oil in Jakarta, Rotterdam and Kuala Lumpur. The export tax is imposed after the producers of CPO see a profit, as production costs are estimated at about US\$500/tonne, so the escalating tax is imposed when the CPO price is more than US\$750/tonne (Indonesia Investment Coordinating Board, 2014).

Table 2: Summary of fiscal incentives and palm oil

Incentive description	Type + primary function	Source
Land access		
Land rights, relaxed permitting, reclassification of lands to enable palm oil development	Grants and other direct payments and in-kind subsidies: concession allocations to foreign estate crop companies, state-owned forestry companies allowed to use 30% of concession areas for estate crops, including oil palm, plantation establishment on 'non-productive production forest,' consolidation and streamlining of investment procedures and permitting enabled by the Investment Coordinating Board (BKPM), lease extensions, building construction and use right extensions, decentralisation policies and intergovernmental fiscal transfers (which pass incentives from central to district and local levels)	Indonesia Investment Coordinating Board (BKPM), 2014 Paoli <i>et al.</i> 2013 Indrarto, <i>et al.</i> 2012 Mumbunan, Ring, Lenk, 2012 Caroko <i>et al.</i> , 2011 Colchester, <i>et al.</i> 2006 Casson, 2000
Financing investment in production		
Debt restructuring	Credit subsidies and government guarantees: relaxation of bankruptcy rules and non-performing loans, debt-for-equity swaps	
Tax breaks	Tax concessions, in-kind, credit subsidies and government guarantees: tax deductions on oil palm investments, accelerated depreciation and amortization of tangible fixed assets, lower taxes on dividend payments, loss compensation, tax exemptions and deferrals	Deloitte, 2012 Caroko <i>et al.</i> 2011 Government Regulation No.1/2007
Preferential lending rates	Credit subsidies and government guarantees: Credit access at concessionary rates, deferred interest and repayment, Bank Mandiri subsidized loans during production phase	Bank Mandiri, 2014 Boer, <i>et al.</i> 2012 Casson, 2000
'Production forest for conversion' timber sales	Cross Subsidies: Allowed timber harvests on concessions that cross-subsidises company plantation establishment.	Caroko, <i>et al.</i> 2011 Sheil, <i>et al.</i> 2009 Dillon, Laan and Dillon 2008
Investments in biofuel production	Credit subsidies and government guarantees: Palm plantations access interest rate subsidies of 5% for 5 years, deferred loan repayment	Regulation No. 051/2006 Dillon, Laan and Dillon 2008 Regulation No 32/2008 Decree No. 156/PMK.011/2009 Caroko, <i>et al.</i> 2011 Boer, <i>et al.</i> 2012
Fertilizer subsidy	Grants and other direct payments: Grants and direct spending to fertilizer companies to keep ceiling prices below market prices	Dillon, Laan, Dillon, 2008 Sheil <i>et al.</i> 2009
Plantation Revitalization Program: Interest rate subsidy for developing palm oil plants	Credit subsidies and direct payment: investment credit channelled by banks and interest subsidy given by government (goes beyond plantations to include processing and marketing)	Indonesia Ministry of Finance Regulation No. 117 / PMK.06 / 2006

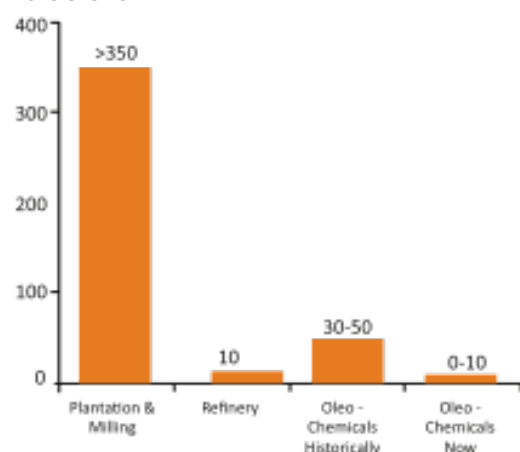
Nucleus Estate Scheme (NES) (Perkebunan Inti Rakyat (PIR))	Grants, direct payments, credit subsidies and government guarantees: direct spending, land access rights, concessionary credit, technical assistance, and later, facilitation of FDI investment	Budidarsono, Susanti and Zoomers, 2013 Fizzanty and Masyhuri, 2013 Fortin 2011 Zen, Barlow and Gondowarsito 2005
Biofuels		
Biofuel import tariff	Market price support: meant to stimulate domestic biofuel production	
Special Biofuel Zones	In-kind subsidies: streamlined licensing and permitting	Asia Pacific Economic Cooperation, 2008
Investment income tax deductions	Tax concession and in-kind subsidy: reduction of net income by as much as 30% of the amount of investment, charged for 6 years at 5% per year; accelerated depreciation and amortization	Regulation of Minister of Finance No. 21/PMK.011/2010
VAT exemption for domestic biofuel production	Tax concession: value-added tax free facilities for the import of strategic taxable goods for production	Regulation of Minister of Finance No. 21/PMK.011/2010 Decree No. 156/PMK.011/2009
Credit for development or bioenergy and revitalization of plantation (KPEN-RP)	Credit subsidies: Investment credit channelled by banks and interest subsidy given by government	Indonesia Ministry of Finance Regulation No. 117 / PMK.06 / 2006
Pertamina losses	Credit subsidies and government guarantees: US\$40 million in losses from 2006 to 2008 due to biofuel blending mandate	Dillon, Laan and Dillon 2008
Biodiesel production subsidies	Grants and direct payments: supports price competitiveness, increased in FY2012 to US\$.20 - .25/litre. Includes a direct payment made to state-owned company Pertamina	Regulation No. 51/2006 Slette and Wiyono, 2014 PwC, 2012 Dillon, Laan and Dillon 2008
Biofuel investment incentives, subsidized fuel policy and biofuel blending mandate	Market price support, regulatory and tax concessions: 10% biodiesel, increasing to 25% by 2025; power plants use 20% blend; nominal stamp duty, relief from import duties, VAT exemptions for strategic goods, subsidized fuel prices, biofuel component of fuel sales exempted from the 10% VAT	Ministry of EMR Regulation No. 25/2013 National Energy Policy Regulation No 32/2008 Decree No. 156/PMK.011/2009 Rusmana, 2013 Caroko <i>et al.</i> 2011 Dillon <i>et al.</i> 2008
Downstream sector development		
Differential export taxes on crude and refined palm oil products	Tax concessions: export tax currently at 0%, in line with Malaysia. Has been as high as 25% to encourage value-added over CPO exports	Yulisman, 2014 Yulisman, 2013 GBG Indonesia, 2013 Rifin, 2010 Government of Indonesia, 2011
Cooking oil subsidies	Grants and other direct payments: 25-30% of market price; provided during periods of high demand, either to CPO refiners (upstream) or to consumers and target market groups (downstream), to keep consumer prices constant	Chaili, 2008
Subsidized infrastructure for processing, storage and market access	In-kind, grants and direct payments: promote oil palm as part of Sumatra and Kalimantan Economic Corridors; spatial certainty for plantations and mills/processing plants, road improvements and port access; incentives, and disincentives for the development of downstream palm oil industries	Government of Indonesia, 2011
Tax holiday facility	Tax concessions: offers five-to-10 year tax breaks, plus 50% reduction in corporate income tax liability for 2 years, in five industrial sectors; Unilever Oleochemical Indonesia is first oil palm refiner to participate	Yulisman, 2013. Regulation of Minister of Finance No. 130/PMK.011/2011 on Tax Holiday on Corporate Income Tax
Demand-side measures		
EU fuel-blending mandate for biofuels	Demand-side market price support: 10% by 2020, exemptions for fuel excise tax	Gerasimchuk and Koh, 2013 Caroko, <i>et al.</i> 2011
EU restrictions on palm oil imports for food and biodiesel	Demand-side tariffs: 18.9% palm oil import duty, valid for five years	European Commission, 2013
India's import duties on refined palm oil	Demand-side tariffs: 10% refined palm oil import duty	

4. PUBLIC BENEFITS AND RISKS

Public fiscal incentives can be important tools to promote economic growth, food security and create jobs while also maintaining natural capital such as soils and forests. Thus, the evaluation of current fiscal incentives must include an assessment of public benefits and risks. Revisions to current incentives and design of new ones should seek to promote public benefits while minimizing risks. This section summarizes some observed public benefits and risks, but a more thorough evaluation is required.

4.1 PUBLIC BENEFITS AND RISKS WITH CURRENT FISCAL INCENTIVES

Figure 3:
Profit margins of palm oil
value chain



Source: Indonesia, 2011b.

1. **Given the high profitability of palm oil production, as compared to other segments of the value chain, fiscal incentives promoting production are unjustified.** As Figure 3 demonstrates, profit margins at the oil palm production and milling stage are significant, and such high profit margins are likely to be sustained even when CPO prices are not at market highs. The continued support of a business-as-usual approach that stimulates investments in production raises concerns about use of public subsidies for private profit and risks to safeguarding natural capital green growth goals. Further, the application of fiscal incentives to spur such profitable activities results in the loss of revenue to the state, and thus the loss of revenue that could support a range of public benefits. As licensing discretion rests with the local/district government, the central government will need to work closely with local governments to correct inconsistencies in allocation of land rights, relaxed permitting, inappropriate reclassification of lands and other in-kind subsidies. Perhaps easier for central government to address is the tax breaks, preferential lending rates, interest rate subsidies and deferred loan repayment allowances that producers take advantage of.
2. Indonesia has not been able to **appropriately capture economic rents from oil palm plantations** due to the fact that licensing information on ownership and permits are not integrated into the revenue chain and due to poor reallocation of revenues. The Director General of Plantations within the Ministry of Agriculture recently issued a regulation²² on the use of One Licensing Information/Satu Informasi Perizinan (SIP) as a system for plantations nationwide. Jambi province has issued a governor regulation on the use of SIP for all land-based sectors, not only agriculture. Despite the large amounts of revenue collected from CPO export duties in the past (it was once as high as 25%), the revenues were not utilized for infrastructure or sector development (Indonesia, 2011b), which raises concerns about how these funds are used and what public benefits derive from them. The Reforestation Fund, an important source of receipts from forest concessions for the central government, operates as a revolving fund via the Forest Development Account, seeking to incentivize private sector investment in the forestry sector. Though initially capitalized at US\$555 million, only US\$3 million was dispersed as loans in 2011, largely due to delays in setting up regulations and disbursing revolving funds at the central government level and delays in granting the requisite approval and designations of project sites at local district levels (Indonesia

22. Keputusan Direktur Jenderal Perkebunan Nomor 2333/Kpts/OT.140/9/2014

Ministry of Finance and Climate Policy Initiative, 2014). More analysis is needed to understand how timber and palm oil revenues can be redirected to support the sector's production standards.

3. **New land allocations for oil palm expansion may not be necessary and continuing fiscal incentives to promote extensive production does not serve the public interest.** It is likely that enough land exists to accommodate future production increases without further expansion into forests. The USDA estimates the Indonesian oil palm industry collectively possesses 6 to 7 million ha of undeveloped acreage in its existing land bank. Thus, it theoretically has the ability to maintain current rates of plantation expansion for at least the next decade without requiring new lands for development (USDA, 2013). Further, a significant amount of land allocated for production expansion has not been developed (Caroko et al., 2011). Coordination with the Investment Coordinating Board (BKPM) is recommended to identify how to incorporate this consideration into their consolidation and streamlining of investment procedures and permitting for oil palm production.
4. **Fiscal incentives to promote yield improvements among smallholder oil palm producers can bring significant public benefits.** Improved access to finance and increased investments in the enabling environment can positively affect yields among independent²³ smallholder producers (Molenaar *et al.* 2013). Interest rate subsidies for research and development of palm oil seeds and subsidies paid to state-owned seed manufacturers that enable them to provide improved seedlings to smallholders, as well as targeted application of subsidized fertilizers are examples of fiscal incentives that directly improve production and yields, thus bringing public benefit through higher incomes for farmers. The challenge, however, is that while access to finance promotes intensification, it also promotes expansion. Thus access to finance should be combined with spatial constraints on expansion. Further, ensuring women's equitable access to incentives and loan collateral qualifications and equity in land titling will have positive impacts for livelihoods and families.
5. **The current state budget allocation priorities in the agriculture sector may not deliver on sector growth and food security.** A World Bank review notes that while public spending on agriculture has increased, the expected corollary of increased agricultural production has not occurred. Between 2001 and 2008, national spending on agriculture increased²⁴ 11% per year, while agricultural production only increased 3% (and a significant portion of that increase was in maize and potato production). The bulk of the spending increases each year was on agriculture subsidies, and spending as a share of agriculture GDP grew from 11% to almost 40% over this time period. The analysis identified that public resources were being directed towards supporting private goods at the expense of providing public goods. In 2008, 50% of public spending for agriculture subsidized private goods, with fertilizer subsidies accounting for half and the remainder allocated to seeds, rice subsidies and agriculture credit (Armas *et al.* 2012).

The Indonesia Anti-Corruption Commission also notes a range of governance and corruption challenges related to fertilizer subsidies, including submission of subsidized fertilizer needs by a local government that is too high compared to the real needs of farmers, additional working capital loan interest expenses being borne by government subsidies due to the length of debt repayment, irregularities in subsidized fertilizer distribution due to lack of supervision and limited budget monitoring activities (Indonesia KPK, 2013).

The World Bank finds Indonesia's spending on fertilizer subsidies has had a negative effect on agriculture sector growth. The World Bank recommends that the Indonesian government should consider reallocating spending on fertilizer subsidies to public goods such as agriculture extension services, R&D and irrigation (primarily related to rice production), which could lead to faster overall sector growth (World Bank, 2010).

23. However, this can be the reverse for tied smallholders.

24. Attributed to spending increases from decentralization across all sectors, but an even greater increase for agriculture.

4.2 PUBLIC RISKS THROUGH CORRUPTION AND ILLEGALITY

Corruption and illegality related to forest conversion for oil palm are well documented and raise concerns over how the lack of enforcement of existing laws and graft provide indirect/informal fiscal incentives for local government officials to allow forest conversion. These allowances deplete state assets and important public goods, for private profit, in addition to the further negative social and environmental impacts caused by the lack of adherence to standards, monitoring or oversight on illegally converted forests. Between its formation in 2002 and 2010, Indonesia's Anti-Corruption Commission (Komisi Pemberantasan Korupsi or KPK) has investigated a range of cases in the forest and land use sectors, identifying that most of the USD \$100 million in assets recovered through law enforcement activities as a result of KPK efforts have come from the forest sector (U4, 2011). The KPK notes:

- Forest sector crimes follow three main modes of operation: a) illegal logging without a license, b) logging outside formally permitted areas, and c) the illegal granting of logging licenses. The KPK has authority to investigate cases involving illegal granting of logging licenses.
- Two cases are significant examples: 1) Logging permits were issued in East Kalimantan for 1 million ha of forest to be converted into an oil palm plantation. The permit was issued despite failing to meet formal requirements. The company never created the oil palm plantation and yet cleared and sold 629,000 m³ of wood and US\$38 million in losses to the state, and 2) In Pelalawan, the regent head was found guilty of issuing timber utilization licenses to 15 companies for the use of 120,000 ha of forest between 2002 and 2003, resulting in US\$131 million in state losses (U4, 2011).
- As mentioned in the previous section above, fertilizer subsidies have had a negative effect on agriculture sector growth, which raises concerns over use of public funds for this purpose.

The KPK Performance Report for 2013 and KPK Annual Report 2013 identify one case of suspected forest permit corruption for forest products in Pelalawan by the Governor of Riau, but no further cases are identified and the report highlights the capacity constraints of the commission (Indonesia KPK, 2013). A recent in-depth study (forthcoming by AidEnvironment, cited by Lawson *et al* and commissioned by Forest Trends and Chatham House) of compliance by all oil palm plantations in one district in Central Kalimantan found that 89% of the 35 plantations assessed were associated with at least one apparent illegality, while 64% were associated with two or more illegalities. Illegalities include permits being issued improperly or without other required permits, forests being cleared without necessary permits being in place, use of fire to clear forests or forests cleared outside concession boundaries among others.

A 2015 U4 study notes that between 50 to 85% of the 8 million ha of currently productive oil palm plantations in Indonesia, mostly in Sumatra and Kalimantan, have been developed through prior deforestation (Dermawan and Sinaga, 2015). Concerns have been raised that large volumes of timber are coming from illegal, unlicensed land clearance where companies have not obtained timber utilization permits, and that large volumes are being processed by medium and small sawmills licensed locally and therefore not captured in the MoEF's timber utilization permit figures (Environmental Investigation Agency, 2014).

A review of Indonesia's anti-corruption efforts in forest clearing identifies that progress has been made by the KPK with reforms to the money laundering regulation. However, better detection of a broader range of illegal activities, including those occurring outside forests and investigation and persecution of more powerful actors involved in corruption is needed (Downs, 2013). The review notes the large practical barriers involved in prosecution of more powerful actors, as evidenced by cases of KPK investigators being arrested while investigating corrupt police activities.

Generally, more systematic analyses on the magnitude of the informal fiscal (and political) incentives for local governments to allow forest conversion for oil palm plantations, while beyond the scope of this study, are needed in order to comprehensively address the issue and take into account all formal and informal incentives.

5. PRIORITIZING WHICH FISCAL INCENTIVES TO REFORM FOR COMPATIBILITY

The previous sections define the current set of challenges for reducing pressures on Indonesia's forests due to oil palm expansion and the range of fiscal incentives that drive that pressure. Prioritization of which fiscal incentives to reform for more sustainable forest and peatland use is based on the following assumptions, which could be further refined in follow-up dialogue and research on this topic:

1. **The relatively weak role of the central government compared to local government must be considered, though this is changing, particularly with regard to production forests (Law 23 of 2014).** The authority to license, regulate, collect taxes and collect fines still largely rests in the hands of local government and is based on the broad decentralization policy. Consideration must be given to how to shift incentives that provincial and local governments may either have or perceive to have to clear forests for palm oil development.
2. **Investment screens and lending performance standards should be put in place for both public and private banks to link use of palm oil production standards with ability to access finance.** This can be pursued by finance regulators and could be modelled on World Bank and IFC's framework for engagement in the palm oil sector and safeguard policies (World Bank and International Finance Corporation, 2011). Presumably supply chain finance will also seek standards, as more larger producers are incorporating ISPO and RSPO standards into practices and hopefully passing this on through their plasma lending arrangements. While indications are that a significant amount of investment in palm oil production comes via the supply chain, government financing appears to be readily available. More information is needed to understand the scale of public debt investments in production.
3. **Improving compliance and enforcement with existing laws (and new ones) is a priority for ISPO and the RPJMN.** Redefining access to fiscal incentives based on licensee demonstration of compliance with laws could be a tool to motivate producers. For instance, access to any public regulatory or fiscal incentives should be prohibited on deep peatlands. A long-standing existing regulation already restricts oil palm development on deep peatlands, yet this still occurs (and accounts for 8% of all oil palm concessions, according to Abood *et al.* 2014).
4. Indonesia seeks to promote sustainable palm oil production through the ISPO and major concession holders are exploring RSPO. Regardless of certification standard applied, **there should be linkages between application of best practices and access to incentives such as credit subsidies and tax incentives.**
5. **Improving budget efficiency in the context of redesigning fiscal incentives should be a priority.** This involves limiting transaction costs, minimizing avenues for corruption and graft, and ensuring that public investment has the greatest impact possible. This should also include assessment of how multiple public benefits can be achieved.
6. **Reaching spatial clarity on conflicting land uses and overlapping concessions and jurisdictions is within reach** due to the One Map Initiative and has important implications for spatially targeting fiscal incentives. BAPPENAS is reviewing forest and plantation areas for the next five years, though it still faces challenges in agencies utilizing difference scales. Work has been underway between the National Spatial Planning Coordinating Board (BKPRN) and regional

governments to finalize Provincial Spatial Planning (RTRW Propinsi) at regional levels as a basis to overcome potential land use conflict in utilization as forest, plantation and mining areas, and the One Map Initiative can further facilitate this. Further, alignment with the One Licensing Information (SIP) is crucial and research is underway to better define the linkage between licensing and revenue.²⁵ Nevertheless, this clarity can have large implications for addressing the perverse and in-kind fiscal incentives that occur through land access practices and can also be used as a means to spatially focus investments in production, coupled with spatial restrictions on expansion.

7. Indonesia's **domestic biofuel policies and related fiscal incentives will have an increasingly large role to play in influencing land use practices and expansion into forests.** Much more effort is needed to define how biofuel production targets can be met without significant impacts on forests and peatlands.
8. **The installed capacity of Indonesian palm refineries will likely operate at 50 to 60% of their capacity in 2014, as installed capacity outstrips crude palm oil production.** Yet the answer is not to simply produce more CPO to feed the mills. Further, most CPO is exported. CPO prices are at a five-year low. India has made moves to restrict its imports to build its own domestic oil production and biofuel exports are holding steady. The growth in production may well rest on increasing domestic use for cooking oil, oleo-derivatives and biofuel.
9. **Fiscal incentives that have high impact on forests and peatlands should be prioritized for reform, though more assessment is needed.** Quantifying the impact on forests and peat of each fiscal incentive identified in Table 2 would require further assessment, however, expert opinion on which ones hold a high likelihood of reversing negative impacts on forests could be elicited.
10. **Consideration should be given to those fiscal incentives that are relatively easy to reform.** Reversing perverse incentives, amending and revising existing ones and creating new incentives require a range of interventions ranging from rule-making (easier) and Ministerial decrees to legislative decisions (potentially harder and more time-consuming).

Table 3 at the end of Section 6 provides an initial prioritization of activities to pursue to harmonize fiscal incentives for sustainable forest and peatland management and is provided as a starting point, which would benefit from further refinement.

25. Refer to work of N. Samadhi of UKP4 and S. Mumbunan of University of Indonesia and Dermawan and Sinaga, 2015.

6. PATHWAYS FORWARD

Based on the prioritization of interventions provided in the last section, the following pathways forward are proposed and are loosely summarized in Table 3 below. This is an initial identification of pathways forward, and it is hoped this will form the basis for a more formal prioritization process in partnership with the Indonesian government and in consultation with other stakeholders. Note that this section does not evaluate the likelihood or mechanics of implementing these measures, which should be a priority for the next phase of assessment.

1. Defining how to operationalize the 2015 to 2019 National Medium-Term Development Plan (RPJMN) to achieve more sustainable forest and peatland use is opportune. The RPJMN seeks to increase oil palm production and keep palm oil exports strong, while also being attuned to the sustainable development goals of improving people's productivity at the lower and middle income segments and achieving development without endangering the environment and ecosystems. Further, the RPJMN is aligned with Indonesia's commitment to reduce its GHG emission by at least 26% by 2020 or up to 41% with financial support from the international community, while also sustaining strong economic growth. However, the plan does not explicitly define a roadmap for how to achieve all those goals. Increasing agricultural plantation productivity, controlling forest and peat fires and promoting value added downstream industries requires careful programmatic, spatial and financial incentive design and planning in order to achieve outcomes. Spatially targeting fiscal incentives for yield and productivity gains while sparing forests deserves consideration.

2. Improving land management performance is recommended in order to access government incentives.

At government levels:

In light of changes under decentralization legislation (Law 23 of 2014), there is a **need to identify how incentives and disincentives can effectively function to promote sustainable management of forests**. While decentralization policies limit the central government's ability to influence land use decisions, limiting access to credit subsidies and government guarantees through state banks and tax concessions on the basis of performance measures is a viable solution. 'Frontier' areas generally lag behind established oil palm growing regions in ability to avoid development of high-risk areas and to monitor compliance (Paoli *et al.* 2013). Current policy and fiscal incentives promote inefficient and unsustainable forest and peatland management. However, given shifts in responsibility in management of forest areas from central government (MOEF) authority to provincial levels,²⁶ this is an opportune time to redesign incentives and disincentives at district and provincial scales. Options could include:

- The value of keeping forests and peatlands intact can be reflected in the allocation formula for general purpose transfers (Dana Alokasi Umum (DAU)) between the central government and provinces and districts/cities. If Indonesia were to incorporate a forest and peatland criterion and weight to the intergovernmental transfer formula, Indonesia could incentivize decisions to keep forests and peatlands intact at these jurisdictional scales, without changing the overall amount of DAU or raising taxes. This is a revenue-neutral solution. India's recent decision to include forest cover in the allocation formula of revenue going to states provides an example of how this can function (Government of India, 2015).
- The central government could influence governance standards through assessing a district's performance if it's verified deforestation rate goes above the baseline level (or acceptable range),²⁷ and if forest clearance rates exceed what is allowed.

26. Central government will retain management of conservation forest, while provincial governments will manage production and protection forests.

27. Though districts now do not control production forests, this still may be useful given the amount of forest and peat cleared from other land classifications.

Then, the district, and companies operating within it, would lose access to state bank financing and tax concessions.

- Revisions to specific purpose transfers through Dana Alokasi Khusus (DAK) could be made to enable further incentives to keep natural forests or to encourage production on degraded lands. This could also provide a means to operationalize concepts identified by the Ministry of Finance (2009) which envisioned supporting and incentivizing carbon abatement measures by regional governments through the intergovernmental fiscal transfer system. Consideration should be given to how existing transfer mechanisms to regional governments can screen for compatibility with low carbon growth objectives.
- Another (related) approach is a jurisdictional approach to REDD+,²⁸ which could provide a means to bundle and spatially direct incentives, and this would presumably be tied to application of certification standards in the jurisdiction or other means of measuring jurisdiction-wide performance.
- Further legal clarity is needed to create a common definition of 'degraded land' for applicability on Kawasan Hutan and APL lands, with spatial delineation.
- The IFC is working with Indonesian financial institutions to promote adoption of environmental and social standards. This can be an important tool to complement government efforts to shape oil palm sector lending. Further effort will be needed to affect the lending practices of provincial and local banks in order to build their commitment to and practice of incorporating performance standards in their lending.

At producer levels: Given the ongoing efforts by RSPO and ISPO to improve production practices and improve the legality of the palm oil production sector, the following could be pursued:

- Identify how performance against certification and standards can link to access to fiscal incentives. Compliance with legal standards could be used as a measure of suitability to access credit guarantees. Another option may be to restrict the existing suite of tax concessions to those demonstrating certification and compliance with Indonesian laws. Those producers not in compliance would be subject to the regular tax burden, the proceeds from which could be redirected to promoting smallholder yield improvements.
- For certified supply chains, there could be opportunities to identify how incentives can promote the range of actors in a certified supply chain. The RSPO is looking at 'package certification' to include all aspects of the supply chain, and this could pre-condition supply chain actors to access incentives.
- A differentiated tariff policy may provide a means to address the higher costs associated with RSPO certified supply. Half of RSPO certified palm oil remains unsold because of its slightly higher cost to buyers. Existing premiums are not sufficient to meet the costs of transition for producers.

3. Strong high-level political commitment to forging solutions will be critical to aligning institutions and levels of government with conflicting mandates.

Indonesia has made rapid progress over the last few years to develop the downstream palm oil industry and has sought to reverse the dominance of CPO exports over processed and value-added palm oil products and derivatives. Various ministries including Industry, Agriculture and Trade have sought to revise the fiscal incentive structure to promote downstream production and processing, with tremendous results in the last few years. However, the policies and fiscal incentive framework for biofuels are complex, given the competing priorities of increasing biofuel use to lower the high oil and gas trade deficit, decreasing dependency on imported fossil fuels and reaching GHG emission reduction goals.

The Ministry of Finance noted the need to work with the appropriate ministries, principally Forestry and Agriculture, to create fiscal and regulatory reform in order for

28. A nationwide approach under which REDD+ is implemented and administered through Indonesia's provincial and district government units, with performance aggregated at the national level.

development objectives to align with carbon reduction objectives. The Ministry of Finance noted that national regulatory measures, and the tax and subsidy system for land conversion, forest and agricultural industries, can overlap or are contradictory and often promote high-emission outcomes (Indonesia Ministry of Finance, 2009). This much needed systematic approach to policy review and reform has not yet been implemented.

Collaboration between line ministries in Indonesia is crucial for low-carbon growth (LTS International, Indufor Oy, Ecometrica, Chr. Michelsen Institute, 2014). A coherent plan between the ministries of Agriculture, Forestry, Industry, Finance, Energy and BAPPENAS for fiscal incentive rationalization is timely. This can also help to focus discussions on how best to direct Green Climate Fund finance or other sources, which should not be directed to pay for activities to counter those incentivized through existing subsidy and fiscal incentive structures.

4. Refining tax structures would capture greater public value from oil palm production. Increasing tax rates for Land and Building Tax for plantations could encourage more intensive production models by agribusinesses by increasing the cost of land to account for environmental externalities (Falconer *et al.* 2015). Amendments to the land and building tax (PBB) should emphasize land size over productivity, which would promote oil palm intensification on existing land, rather than indirectly incentivizing expansion. Further, such a shift may not cause substantial changes in local government revenues. In fact, local revenues could potentially increase if these commitments to intensification and land-sparing allowed access to incentives, concessionary lending rates for producers by state banks and other benefits linked to the RPJMN. Consideration of the most efficient and equitable option to incentivize increased productivity through taxes, while sparing land, is necessary. A carbon tax on land could also provide a means to monetize the externalities of poor land use through peat conversion.

5. Bringing coherence to APL forest land management and HCV areas should not require new fiscal incentives for plantation estates. Rather, these are largely spatial and regulatory solutions to current challenges, and producers are looking to government to provide clarity. Further, these predominantly affect the concessions of larger producers who increasingly seek to produce palm oil at international standards and operate at profit margins that should absorb the marginal costs of sustainability practices. Government can create the policy and regulatory coherence necessary to support those efforts. The difficulties faced thus far in individual cases (concession scale) of land swaps point to the need to systematically address this and make the legal framework effective, such as revising the estate crop law to enable concessionaires to keep land under forests when it is classified as HCV forests (Law 18/2014 - article 12).

As there are concerns that HCV set-asides are considered ‘abandoned,’ there is a need to ensure these agencies draft regulations²⁹ with adequate provisions to ensure these lands are not released for development without consideration for how these can support low-emission development, REDD+ objectives and producer sustainability intentions. On-going efforts by government to address this need include:

- In 2014, the Ministry of Forests worked to develop forest management units (FMUs) for production and protection of forests, to help develop capacity and transfer that to local government. There is also the option for the newly-created Ministry of Environment and Forestry to expand their scope to work outside the forest estate in order to manage APL lands.
- In 2014, BP-REDD+ looked into the possibility of a facility for land swaps in order to increase efficiency. Producers participating would pledge their commitment to not expand their land bank and in exchange, would focus on increasing their productivity and have access to concessionary loans and other incentives.

29. The MP3EI directed the National Land Agency, Ministry of Home Affairs and local governments to issue regulations regarding the utilization of abandoned land, though it is unclear to what degree this was acted upon and also how creation of a new Ministry of Agrarian Affairs and Spatial Planning in 2014 affects this.

6. Smallholders inadequately access current incentives and yet they are crucial to Indonesia's plans for increases in production yields, economic development and livelihood improvement. Smallholders have an increasing role to play in oil palm production as their share of total production has increased considerably, but their yields and sustainable production practices vastly underperform compared to plantation schemes (Molenaar *et al.* 2013). Yet, Molenaar *et al.* note that yields improve by 25% when smallholders follow RSPO requirements, highlighting the importance of improved production practices. Sheil *et al.* (2009) attribute the low productivity in oil palm production by smallholders to the use of low quality seeds, lack of access to knowledge and technical support, lack of access to capital, poor plantation management and a lack of alternatives to large mills. Some options to address this include:

- **Linking smallholder access to fiscal incentives and government-facilitated land tenure clarification.** Smallholders often do not hold title or have unclear use rights due to past resettlement processes or other complicating factors, including customary rights and rights ceded in unfair contexts. As mentioned in section 2.7.5, the discretion given to license holders to resolve tenure conflicts hands a key government function to the private sector and does not support the public interest to act on behalf of those with less resources and power. Just as solving land use classification irregularities should be within the government, so too is fundamentally addressing the urgent issue of land tenure. Government could combine tenure rationalization with access to state bank financing to improve smallholder palm production practices. Depending on the context and scale achievable, this could also help focus where to direct rural credit and extension services and may also complement investments made by production companies as part of Inti-plasma schemes. Different approaches would need to be developed for independent smallholders. Further, loans that use standard cash flow assessment procedures rather than those based on collateral can help overcome the marginalization of women.
- **Specific interventions are required.** Of the four primary suggestions for agriculture fiscal policy reform that Armas *et al.* (2012) suggest, two are highly relevant to the oil palm context: 1) reallocating public spending from subsidizing private inputs (fertilizer, seeds and grants to farmers and farmers' groups) towards providing agriculture and irrigation public goods and services, and 2) reorienting government support to help small farmers and farmers' groups to gain access to global value chains and to meet the domestic demand for higher value-added products, entailing a significant shift in the current support that prioritizes estate crops. The authors also note the potential utility of targeted and conditional cash transfers to increase farmer investment and productivity in the agricultural sector and a comprehensive monitoring and evaluation system to evaluate the impact of government transfer programs (Armas *et al.* 2012). Certification is a critical means of boosting productivity and could also be linked to access to concessional loans. The IFC found that substantial productivity gains among smallholder oil palm producers could be achieved by improving fertilization practices and independent smallholdings hold potential for the largest improvements (Molenaar *et al.* 2013). More assessment is needed to redefine how existing incentives can be directed toward smallholders, based on clearer and more equitable legal land rights.
- **More assessment is needed to identify options for how to address the challenges associated with independent smallholders.** Some interviewees indicate that many companies source from independents, though they do not often disclose this. One option may be changing legislation to increase the minimum land area an industrial estate owner must allocate to scheme smallholders (from 20% to 40%), coupled with increased support to improve productivity in oil palm smallholdings and spatial restrictions on oil palm expansion over forests (Ser Huay Lee *et al.* 2014), though this is not corroborated by findings in Central Kalimantan (Falconer *et al.* 2015). Another option may be land titling, as per the first point above.
- As yield increases often incite producers to invest in and expand their production, **strategies to increase yields must be accompanied by spatial constraints on expansion, so that forest land is spared** and additional producer investments further increase yields, rather than opening up more land for production.

Further analysis will be needed to assess the mechanics and political viability of creating the above shifts in the fiscal incentives for oil palm production identified in this report. While some mechanisms such as bank resolutions could be achieved fairly quickly, others such as legislation or Ministry of Finance rulemaking will be more difficult and take time. Further, shifts in upstream planning processes are important, but will take time to be reflected in policy.

Table 3: Prioritizing fiscal incentives for oil palm for compatibility with green growth

Action	Likelihood of reversing negative impacts on forests	Equity (maximizes multiple benefits for the public, reduces or appropriately allocates fiscal burden, reduces perverse incentives)	Likelihood of providing greater spatial clarity (APL lands, HCV, etc.)	Likelihood of increasing smallholder yields	Lead agency or actor to implement action
Land access					
Identify how to operationalize the 2015 to 2019 National Mid-Term Development Plan (RPJMN) and sustainable forest and peatland use. Scope should include programmatic, spatial and financial incentive frameworks	High	Has potential	Has potential	Yes, if made a priority.	BAPPENAS, Ministry of Environment and Forestry, MoA (Kementerian Pertanian), Ministry of Energy and Mineral Resources (ESDM)
Review the tax and subsidy system for land conversion, forest and agricultural industries, to reduce overlap/contradictions and promote low-emission outcomes	High	Has potential	Has potential	N/A	Lead by Ministry of Finance (Kemenkeu)
Identify how incentives and disincentives can effectively function to promote sustainable management of forests, given shifts in responsibility from central government (MOEF) authority to provincial levels, due to decentralization legislation (Law 23 of 2014)	High		Has potential	N/A	BAPPENAS, Ministry of Environment and Forestry
Incorporate a forest and peatland criterion and weight to the intergovernmental transfer formula, for general purpose transfers (Dana Alokasi Umum (DAU)), to influence decisions at provincial and district/city scales (revenue-neutral solution)	High	Likely	Has potential	Could, as an enabling element, if complemented with programmes aimed at smallholders	MOF
Correct relaxed permitting and reclassification of lands which currently enables palm oil development	High	Has potential	High	Yes, if greater tenure clarity for smallholders	MOF, MOA, BAPPENAS, ESDM
Investments in production					
Review existing Investment Coordinating Board (BKPM) oil palm portfolio to identify opportunities for these public investments to be compatible with forest and peatland management objectives	High – targets investments already in pipeline	Has potential	N/A	Has potential if prioritized	Ministry of Environment and Forestry, Ministry of Finance, and BKPM

Spatially target any necessary credit subsidies, government guarantees and tax concessions to areas that are degraded ('critical land') and away from high carbon stock (HCS) areas	High – with emphasis on areas with mill and market infrastructure	Has potential	High	Has potential	M of Finance, BAPPENAS, Coordinating Ministry of Economic Affairs (Kementerian Koordinator Bidang Perekonomian)
Indonesian public financial institutions adopt environmental and social standards in lending (principles and criteria could link with RSPO and ISPO)	Has potential	Has potential	Has potential, based on the standard	Has potential, if it can reach smallholders	M of Finance
Indonesian private financial institutions promote adoption of environmental and social standards in lending (principles and criteria could link with RSPO and ISPO)	Has potential	Has potential	Has potential, based on the standard	Has potential, if it can reach smallholders	Financial Services Authority (Otoritas Jasa Keuangan)
Design fiscal incentives for smallholders (including independents) + link to production standards and legal compliance	Has potential	High	Has potential	Yes	MOA
Crude palm oil production					
Spatially target fertilizer subsidies in order to promote intensification on existing farm or degraded lands, with related land use plans to restrict extensive production	Has potential		N/A	Has potential, if prioritized	MOA, MOF
Targeted and conditional cash transfers to increase farmer investment and productivity	Has potential	High, if linked to spatial constraints on expansion	Has potential	Has potential, if prioritized	MOA, MOF
Continue government support to improve palm oil seed stocks, increase targeted extension services to smallholders	N/A	High	N/A	Yes	MOA
Revise national biofuel policy and fiscal incentive structure	High, given future demand	Has potential	Has potential, if included	Not explicitly	MOF, ESDM, Ministry of Environment and Forestry
Link smallholder access to incentives with government-facilitated land tenure clarification	Has potential	High	High	Yes	BAPPENAS, MOF
Establish a carbon tax on land	Has potential	High	High	Not explicitly	MOF
Link land management performance to access to government incentives	High	High	High	Has potential	Ministry of Finance, Ministry of Environment and Forestry, Mol (Kementerian Perdagangan), MoEMR (KESDM)

Note: Table omits downstream sector development and demand-side measure interventions and loosely includes biofuels under the CPO production sub-heading. More detail is required relative to biofuels.

7. CONCLUSIONS

Indonesia sits at a critical juncture as it must identify how to carry out multiple objectives government has set to expand its economy, define a low-carbon development pathway, slow deforestation and increase the productivity of the palm oil sector. While historic fiscal support for palm oil production has prioritized rapid expansion, this has not resulted in the most efficient use of land and natural resources, has led to high GHG emissions and does not provide a sound basis for supporting the productivity of smallholders.

Palm oil production has constituted a significant source of income for local governments, hence the national government's ability to influence activities at local levels is limited, though this also may change due to Law 23 of 2014. The incentives to local governments to promote plantations are significant and these affect local revenues, rather than government spending. This has important implications for how to influence these incentives. Further assessment is needed to identify the likelihood of adoption or feasibility of the proposed pathways forward in Section 6. This will require testing the ideas with ministry focal points and stakeholders.

Direct and indirect support to the palm oil sector is significant and needs to be better quantified. This research is intended to begin to identify the fiscal incentives that influence oil palm production in Indonesia and the range of options Indonesia has to find complementarity between its palm oil sector development objectives and REDD+. This assessment is provided as an initial scoping, but further assessments are needed and could take the form of a government expenditure review or cross-Ministry review. The framing of such a review should define how the RPJMN 2015 to 2019 development plans and sustainable forest and peatland management can best be operationalized for policy coherence and implementation synergies. Ideally, further work will focus on assessing what the possibilities are for a shift in fiscal policies and practice, away from taxing land and trade while subsidizing expansion and towards policies that enable increased productivity and more efficient resource use.

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