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GOVERNING THE PALM-OIL SECTOR THROUGH FINANCE: THE CHANGING ROLES OF THE INDONESIAN STATE

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By analysing the different roles of the Indonesian state in arranging finance schemes for palm-oil development since 1945, this article aims to answer two questions: What are these roles? And to what extent have they prioritised or balanced economic growth, social equity, and environmental protection? We conclude that the state has never been absent from the palm-oil industry but has had different and changing financing roles that are historically contingent and shaped by the evolving economic and political landscape. Furthermore, these roles reflect Indonesia's priorities of achieving economic growth through palm-oil development, furthering social equity, and, recently, promoting environmental sustainability.

Keywords: *agriculture*, *development*, *palm oil*, *sustainability*, *intervention*, *plantation credits*
JEL classification: H81, N55, O13, Q14, Q56

INTRODUCTION

One of the most contentious issues in policy debates on sustainable agriculture is the expansion of palm-oil production in Indonesia, which has been the world's leading palm-oil-producing nation since 2006. Most controversial is the perceived imbalance between the economic revenues of this expansion and its environmental and social effects: forest and peatland burning and the resulting haze; deforestation and the loss of biodiversity; and social tensions and conflicts due to land acquisition, violation of rural and indigenous communities' rights, and unfair treatment of smallholders (McCarthy 2010; Obidzinski, Andriani, and Komarudi 2012; Rival and Levang 2014). In this article we address three shortcomings and biases in the debates.

First, many of the debates have focused on the roles and principles of multinational business and international NGOs in contributing to sustainable and equitable palm-oil production in Indonesia (Schouten, Leroy, and Glasbergen 2012; Smit et al. 2013; Ruysschaert and Salles 2014; Oosterveer et al. 2014; Von Geibler 2013). These non-state actors have frequently assumed that the state abstains from,

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is passive in, is incapable of, or even resists promoting the sustainable development of palm-oil production (Hospes 2014; Hamilton-Hart 2015). However, we believe it is impossible to understand the expansion of the palm-oil sector, and the perceived lack of attention to sustainability and equity, without examining the roles played by the state.

Second, the changing political-economic regime of the country has not been adequately addressed in debates on and analysis of the expansion of palm-oil production in Indonesia. Although Indonesia is now the world's largest palm-oil producer, this was not the case in 1945, shortly after independence, when it inherited oil-palm estates from the Dutch (Booth 1988; Furnivall 1976; Mackie 2007). To date, much of the debate on the sustainability of palm-oil production lacks a historical understanding of how the palm-oil sector has evolved and what roles the government has played in directing changes in the sector.

Third, the research on the role of the state in palm-oil development has mainly focused on the government's involvement via regulation (Jarvis 2012; Glaeser and Shleifer 2003) and on the quality and enforcement of this regulation (Mandemaker, Bakker, and Stoorvogel 2011). The use of other policy instruments to govern the expansion and sustainability of agriculture has been largely ignored. One such instrument is finance (Hood and Margetts 2007). The state has made considerable use of finance schemes to govern palm-oil expansion (McCarthy, Gillespie, and Zen 2012; Vermeulen and Goad 2006; Badrun 2010), providing subsidies and financial services to state-owned banks and oil-palm estates. We contend that without these schemes, the expansion and sustainability of Indonesia's palm-oil sector would never have occurred.

Because the palm-oil sector is capital-intensive, finance schemes are critical to enabling and advancing palm-oil production. Oil-palm growers typically wait four to six years to recover their investment (Papenfus 2000; Koh and Wilcove 2007); establishing mills and refineries also requires considerable outlays. Yet many private companies in Indonesia have found it relatively easy to mobilise investments owing to their links to big-business groups that have privileged access to capital markets; after the introduction of the decentralisation policy in the early 2000s, local governments developed an investment climate that has been very favourable for private companies (Varkkey 2013; Vermeulen and Goad 2006).

For smallholders, finance can be difficult to obtain. Financial service providers are often biased towards large enterprises, wealthy individuals, and urban clients (Claessens 2006). Smallholders face institutional and other problems that limit their access to investors and local capital (Beck and Demirguc-Kunt 2006; Vermeulen and Goad 2006); they lack access to long-term and mid-term finance (Molenaar et al. 2013) and use credit from moneylenders and traders for short-term finance (Rainforest Alliance 2016). The call for sustainable production, which requires fundamental changes in smallholder practices, demands even more investment. Because finance is not available through formal financial providers, smallholders rely on finance schemes arranged by the state. These schemes are important in enabling the inclusion of smallholders in the capital-intensive palm-oil sector.

With the aim of contributing to a better understanding of the roles of the Indonesian state in governing the expansion and sustainability of the palm-oil sector, we address two questions: What roles has the state played in governing the development and sustainability of the palm-oil sector through the use of finance schemes

since 1945? And to what extent do these roles reflect the state's priority of achieving a balance between economic growth, social equity, and environmental protection?

In addressing these questions, we review five distinctive periods since 1945. Each marks a major change in the post-colonial history of the Indonesian political economy: the post-independence era (1945–67); the Soeharto interventionist state (1967–90); the period of economic liberalisation (1990–97); the Asian financial crisis and its aftermath (1997–2006); and the period of economic revitalisation (2006–). Historical analysis of these five periods enables us to examine the changing roles of the Indonesian state in using finance schemes to promote the expansion and sustainability of the palm-oil sector since 1945.

In this article, the concept of 'state' refers to various government agencies of Indonesia that were, or are, regulating, formulating, or implementing finance schemes directed at estate-crop development. These include ministries, technical agencies, and Bank Indonesia (BI; the central bank). For each period, we specify the particular agencies and schemes of the state. Additionally, we use the term 'state' generically when discussing the overall picture of the changing roles of the state in the political-economic history of Indonesia.

METHODS

The five periods discussed in this article are distinguished by major changes in the political economy of Indonesia and by the different finance schemes used by the state. For analysing specific finance schemes, we concentrate on one or more flagship programs per period.

Data collection and analysis entailed a literature review, analysis of official statistics and policy documents (regulations and operational guides issued by relevant ministries), and interviews with key informants in the industry and within government. The literature review was used to ascertain the roles of the state. Information from official statistics provided an overview of the expansion of oil-palm cultivation during the five periods for different producers. (Appendix table A1 provides an overview of our sources.) For all five periods, we reviewed scientific publications. For the last two periods, we also reviewed policy documents.

We identified four groups of key informants to interview: policy actors (from BI, the Ministry of Agriculture, the Coordinating Ministry for Economic Affairs, and the then Ministry of Transmigration, as well as individuals responsible for estate-crop development at the regional level); financial service providers (banks, financial companies, cooperatives, and banking consultants); palm-oil supply-chain actors (companies and smallholders); and smallholder supporters (NGOs and farmers' unions). Between September 2013 and January 2016, we conducted 32 interviews (21 in Greater Jakarta, 6 in South Kalimantan, 2 in Riau, and 3 in Jambi) (appendix table A2). These interviews yielded data on the use of finance schemes by the state in the last three periods.

ANALYTICAL FRAMEWORK

Handbooks and policy debates on the role of the state in finance distinguish two models (Backhaus and Wagner 2005; Gruber 2010; World Bank 2012). The first is the interventionist state. In this model, the state directly intervenes by providing

subsidies and credit or by organising financial institutions to do so (Chang 2009). The second model is the minimalist or regulatory state, whereby the state merely defines the rules of the game and refrains from direct intervention. The regulatory approach implies that the state minimises the direct provision of financial services and instead provides room for the private sector to expand in finance (Jarvis 2012). The second model has been acclaimed by international financial institutions. In its 2013 *Global Financial Development Report*, the World Bank (2012) argued that direct financial intervention can be misapplied, although it valued such intervention for providing financial access to underserved people, including smallholders growing perennial crops. Martin and Clapp (2015) observed that states often combine interventionist and regulatory roles when using finance to promote agricultural development.

Various scholars have further differentiated the roles of the state. For instance, Abdul-Aziz and Kassim (2011) distinguish between the roles of regulator, enabler (providing an enabling environment), moderator (balancing market incentives with community interests), and facilitator (assisting with project completion and reducing risks). Zhang et al. (2010) highlight three key roles performed by governments: buyer (purchasing the goods or services produced), regulator (setting the rules of the game), and enabler (facilitating transactions and regulating to encourage market development). Jacob (quoted in Ghazinoory, Mirzaei, and Ghazinoori 2009) provides the following typology of the government's roles in finance: equipping (providing the necessary infrastructure), organising (formulating and implementing policy), intelligence (providing the intellectual framework for knowledge-based development), and ambition (setting the overarching vision of the nation).

Though nuanced, these typologies lack a historical understanding of the state's roles in finance. They are also not helpful in understanding how these roles shift or how they relate to agricultural transformations or policy regime changes. To explain the roles of the Indonesian state in financing the expansion and sustainability of the palm-oil sector, we need a framework that can provide a historically embedded analysis of the state's decisions about adopting different roles and about which actors to focus on. The framework of Evans (1995) meets these criteria. It is based on the characterisation of four different roles of the state in transforming an economy: custodian (regulating), demiurge (becoming a producer), midwifery (assisting entrepreneurs), and husbandry (upgrading entrepreneurs). Evans's framework focuses on the roles of specific groups within the state and explains how and how much the state is likely to intervene (Adolf, Bush, and Vellema 2016).

Evans's fourfold distinction is based on a comparative historical analysis of the role of the state in industrial transformation in developing countries (Evans and Tigre 1989; Evans 1995). Although this typology is biased towards industry and urban situations (Ikpe 2013; Radice 2008), it is useful for describing the different roles of the state in governing Indonesia's palm-oil sector, for the following reasons. First, the sector is agroindustrial. Second, the state has played a key role in orchestrating the expansion of palm-oil production as a rural and agroindustrial transformation process. Third, the magnitude and impact of this transformation is comparable to the industrial transformation that Evans described. We have adapted Evans's framework to distinguish the different roles of the state in financing agricultural development (table 1).

Concerns about sustainability have increasingly affected the debates over both the expansion of the palm-oil sector and the state's role in guiding this expansion. According to Harris (2003), sustainable development consists of three

TABLE 1 *Roles of the State in Financing Agricultural Development*

Role	Action in transforming the economy	Action in financing agricultural development
Custodian	Restricting & enabling economic activities through regulations	Regulating the market (liberalising protection); enabling non-state actors (private financial actors) to finance agricultural development
Demiurge	Organising economic activities	Providing state-owned financial services for agricultural development; installing SOEs
Midwifery	Assisting entrepreneurs to emerge	Facilitating entrepreneurs' access to finance; supporting the development of new financial arrangements
Husbandry	Supporting entrepreneurs to change their practices to meet new societal & market challenges	Creating financial incentives targeted to meeting new market requirements (e.g., sustainability & equity)

Source: Adapted from Evans's (1995) study.

Note: SOEs = state-owned enterprises.

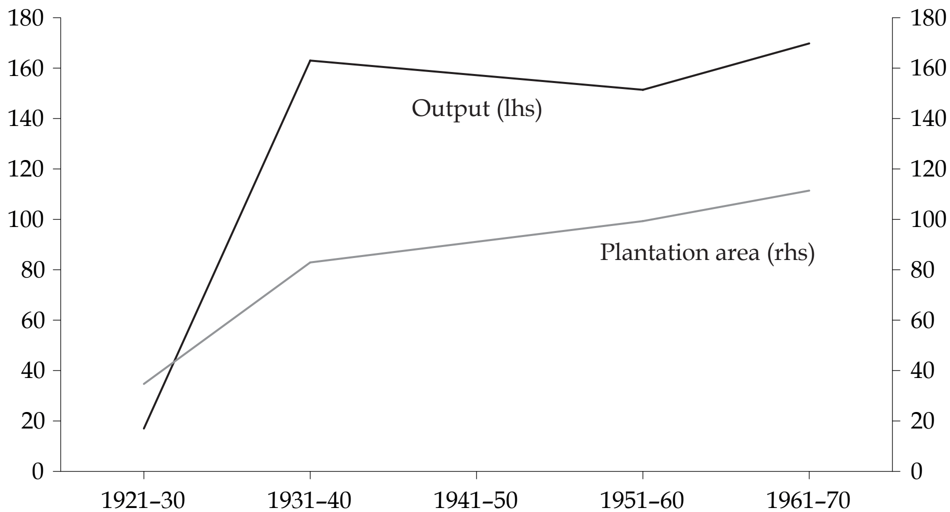
complementary elements: economic sustainability (organising different kinds of capital to maintain or expand economic production), environmental sustainability (managing the ecosystem and limited natural resources), and social equity (fulfilling basic health and educational needs and delivering participatory democracy). Furthermore, Diesendorf (2000) argued that trade-offs between economy, environment, and society are precluded regardless of the economic and social development paths taken. On the basis of these notions, we use 'sustainability' to refer to a combination of economic development, social equity, and environmental sustainability, without trade-offs. Addressing sustainability demands changes, which in Evans's typology relates to new societal and market challenges. To meet these challenges, entrepreneurs need capital, which involves financing sustainable development that, according to Scholtens (2006), aims to promote socially and environmentally desirable activities.

HISTORICAL ANALYSIS

Indonesia's palm-oil sector expanded steadily from the end of the 19th century, during the Dutch colonial administration, until the 1930s. Production declined during the Second World War and the Indonesian War of Independence. Shortly after independence, production slowly started to expand again (figure 1).

Since 1967, two general trends can be observed in palm-oil production and oil-palm plantation areas in Indonesia. The first is staggering growth: from a planted area of only about 100,000 hectares in 1951–60 to one of around one million hectares at the end of the 1980s. Growth was even faster in the 1990s: in the middle of the decade the area under cultivation surpassed two million hectares, with another million added every three to four years. Annual production has grown

FIGURE 1 *Palm Oil Production Output (thousand tonnes) and Plantation Area (thousand hectares), 1921–70*



Source: Data from Booth (1988, 211).

concomitantly: from only 150,000 tonnes after independence to 30 million tonnes in the mid-2010s (figures 2 and 3).

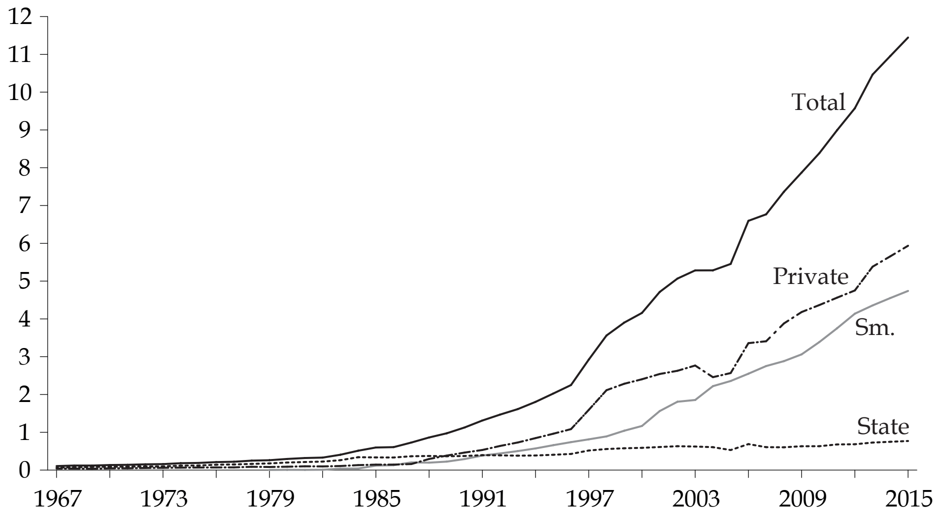
The second general trend is that private plantations and smallholder cultivation have grown faster than state-owned plantations in terms of both area and production. State-owned plantations dominated in area until 1990, when they were overtaken by private plantations. Since then, private plantations and smallholder cultivation have expanded exponentially. The total area under private plantations has increased nearly 13-fold: the total area cultivated by smallholders has increased more than 16-fold, whereas the total area under state-owned plantations has only doubled (figures 2 and 3). For details of growth of production and area for each of the five historical periods, see appendix figures A1 and A2.

To support the expansion of the palm-oil sector, the Indonesian state has used several finance schemes (table 2). The design and implementation of these schemes might differ, however, because of 'everyday politics', to borrow a term from Kerkvliet (1995).

The Post-Independence Era (1945–67)

Indonesia inherited a large oil-palm estate sector from the Dutch. In the 1930s, palm oil was the fifth most important export crop from the Dutch East Indies in terms of value (Furnivall 1976) and the colony was the world's major producer (PASPI 2014). Yet during the Second World War and the Indonesian War of Independence, the plantation sector was generally neglected: the trees were undernourished and decaying, resulting in enormous productivity deterioration (Booth 1988). After independence in 1945, although the new government could see that estate crops had the potential to contribute to economic growth, finance for replanting and improving management of crops was not readily available. The government became ensnared in a prolonged debate about the nation's development approach (Mackie 2007), and the perception that the estate sector was exploitative

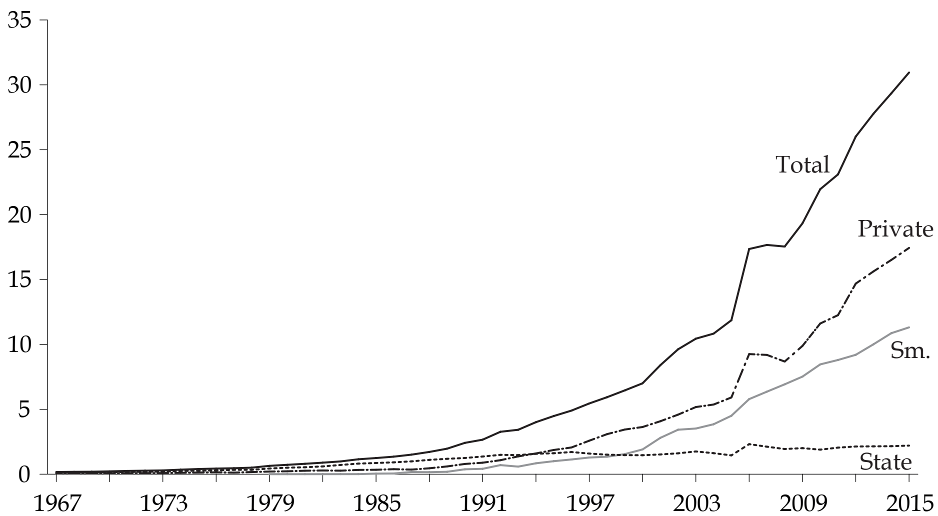
FIGURE 2 *Palm Oil Plantation Area, by Type of Producer, 1967–2015 (million hectares)*



Source: Data from the Directorate General of Estate Crops (2015).

Note: Sm. = smallholder.

FIGURE 3 *Palm Oil Production Output, by Type of Producer, 1967–2015 (million tonnes)*



Source: Data from the Directorate General of Estate Crops (2015).

Note: Sm. = smallholder.

TABLE 2 *Key Features of Finance Schemes Used by the Indonesian State to Support the Palm-Oil Sector*

Scheme	Interest rate and funding source	Outreach
Replanting credit from IECF-Palmoil (2016)	12.5% p.a. Funding: 41% from IECF-Palmoil (collected from export tax); 59% from the implementing bank	2,200 smallholders (until April 2016)
KUR (2007–15)	14% p.a. Funding: State budget via Coordinating Ministry for Economic Affairs	Total borrowers: 400,000 medium-size bankable business (actual numbers of oil-palm farmers are unavailable)
KPEN-RP (2006–15)	10% p.a., 5-year grace period. Funding: State budget via Ministry of Agriculture	75,888 smallholders
KKPA (1992–2006)	14% p.a. (until 1998). Funding: 75% from BI's liquidity credit, 25% from implementing banks (until 1998); 16% p.a. (after 1998); 100% from the transfer of BI's liquidity credit to PNM (after 2000)	155,211 ha (76,157 smallholders)
PIR-Trans (1986–90)	Estate companies borrowed at 11% p.a. during estate establishment & 14% p.a. after trees produced. Implementing banks borrowed at 4% from BI. Funding: 55% from BI's liquidity credit at 6.5% p.a., 45% from implementing banks at market rate. Ministry of Transmigration provided funding for smallholders' housing and public facilities	138,327 ha nucleus-estate smallholdings; 362,529 ha plasma-estate smallholdings[a]
PIR (1977–90)—various	10.5% p.a. before conversion (subsidy of 4.5% p.a. for smallholders). Funding: 70% from Ministry of Agriculture, 25% from implementing banks, 5% from BI	67,754 ha nucleus-estate smallholdings; 163,781 ha plasma-estate smallholdings

Sources: Data from Krishnamurti (2016); Directorate General of Estate Crops (2009); the Ministry of Agriculture website (http://www.pertanian.go.id/); the IECF-Palmoil website (http://www.bpdp.or.id/); the Komite KUR website (http://komite-kur.com/); BI Decree 30/97/KEP/DIR; Badrun (2010); and interview 4.

Note: IECF = Indonesia Estate Crop Fund; KUR = people's business credit; KPEN-RP = Credit for Bioenergy Development and Estate Revitalisation; KKPA = credit scheme for farmer cooperatives; BI = Bank Indonesia; PNM = Permodalan Nasional Madani; PIR = Perkebunan Inti Rakyat program (translated from Nucleus-Estate Smallholder program); PIR-Trans = Perkebunan Inti Rakyat—Transmigrasi.

[a] Plasma farmers have two hectares of land for oil-palm cultivation and an assurance that a mill will purchase their fruit. They are also allowed to use one or two hectares for housing and for growing food.

and a legacy of colonialism discouraged state facilitation of the sector, including financing (Mackie 1961; Booth 1988; Arndt 2007). Squatting on estate land had mushroomed since the Japanese occupation because the separatist uprising made it difficult to secure the estate areas. Meanwhile, the growing labour movement frequently contested companies' management (Booth 1988). After the estate companies were nationalised in the 1960s, there was limited knowledge transfer from the former owners, resulting in deteriorating management of the estates (Mackie 2007). Lack of investment caused the estates to lose their comparative advantage, which contributed to Indonesia's later economic downturn.

The role of the Indonesian state in this post-independence era can be described as 'custodian', but not in an enabling sense: the state concentrated on producing and issuing regulations, but these formed a restrictive environment for the estate sector and decreased private capital presence. Social equity was prioritised over revitalising the oil-palm plantation sector as an economic driver.

The Soeharto Interventionist State (1967–90)

After the failed 1965 coup, the power of Sukarno's nationalist government faded and, in 1966, General Soeharto assumed power and established the New Order regime. Backed by military domination that stabilised social turmoil, this regime installed technocrats to steer development and the massive aid flows from Western nations (Booth 1998). The central bank was reoriented to finance development programs directly through state-owned banks. The regime in effect ended squatting and labour resistance. Palm oil was no longer seen as a colonial product but as a strategic commodity for earning foreign exchange, creating employment, accelerating growth in less developed areas, and securing a domestic supply of cooking oil (Casson 1999; Paoli et al. 2013). Palm oil soon surpassed coconut oil as the main edible oil for domestic consumption (Gwyer and Avontroodt 1974).

With its development orientation and political stabilisation measures, and with funds from the 1970s oil-boom revenues and foreign aid, the government developed new finance schemes. First, in 1967, it arranged soft loans to state-owned companies, backed by World Bank credit (Booth 1988). The availability of capital helped the estate-crop sector quickly recover to pre-war levels of performance and competitiveness. A similar approach was used in 1972 to improve the performance of private companies. Second, in 1977, the government launched a credit scheme to facilitate the expansion of palm-oil production and provide economic benefits to local communities and smallholders: the Perkebunan Inti Rakyat (PIR) program (translated from Nucleus-Estate Smallholder [NES] program), which was expected to alleviate poverty in the outer islands (such as Sumatra and Kalimantan) (Zen, Barlow, and Gondowarsito 2005).

The PIR program was a comprehensive finance scheme for mill construction and estate expansion (Badrun 2010). Although the companies owned the mills, they were allowed to supply only 30% of mill capacity. Smallholders were to provide the other 70%. These smallholders became 'plasma farmers', each using two hectares of land for oil-palm cultivation and receiving assurance that the mill would purchase their fruit. They were also allowed to use one or two hectares for housing and growing food. Using the budget for rural development, the government provided individual housing and facilities for building public infrastructure to enable expansion into areas released from forest status.

The government launched different versions of the PIR program (Badrun 2010; Vermeulen and Goad 2006). In 1977, it started PIR-Lokal, to target communities living around government estates. During PIR-Lokal's first, unproductive years of planting, participants complained about shortages of food and income and about low prices for fresh fruit, so in 1984 the government introduced PIR-Berbantuan (Assistance NES) and PIR-Khusus (Special NES). Later, the government linked the PIR program to its transmigration program, which became the main mode for supporting palm-oil development in Indonesia from 1986 to 1990.

In 1984, the new PIR programs were replicated on private plantations (Zen, Barlow, and Gondowarsito 2005). By granting credit access at concessionary rates for estate development and mill construction, the government stimulated private-sector involvement in the palm-oil sector (Casson 1999). Estate companies could borrow at a rate of 11% during estate preparation and at 14% once production commenced, while the banks executing these loan agreements could borrow from BI at 4%. Such subsidised interest rates helped companies to overcome risks and uncertainties, as many of them were new to the sector.

A third finance scheme, initiated in 1968, was a fund for plantation development (Badrun 2010). It was fed by taxing palm-oil trading, to finance studies on developing better inputs and farming practices. It did not depend on state budget allocation. In 1984, this scheme was abolished to stimulate private-sector development.

Although considered successful at first, the PIR program was increasingly criticised. Estate expansion into remote areas caused environmental change and the marginalisation of indigenous people. The Ministry of Forestry and Estate Crops estimated that 4.1 million hectares of forest had been converted to plantations during 1982–99 (Casson 1999). PIR credit did incorporate environmental assessment in its preconditions, and the World Bank, as principal funder, required that PIR loans complied with its own environmental standards. Yet, as Badrun (2010) notes, the requirement for environmental protection was new for both the government and the companies involved. Rather than strictly implementing credit monitoring, bureaucrats were, in general, focused on their remit (Pincus and Ramli 1998), and the World Bank did not integrate environmental protection in its monitoring system (Rich 2002). In addition, unclear land tenure and lack of consultation with local communities created social conflict (Feintrenie, Chong, and Levang 2010). Smallholders had little room for bargaining, since their obligation to sell fruit to specific mills granted the mills 'monopsonistic' power (McCarthy 2010). Disparity with indigenous communities persisted, as migrants acquired new knowledge faster (Rival and Levang 2014). Under ineffective credit supervision and monitoring, economic development remained the Indonesian state's priority and social and environmental impacts were not fully addressed.

During the Soeharto interventionist period, the state performed two of Evans's roles: demiurge and midwifery. It adopted the role of demiurge by using state-owned companies and banks to foster economic transformation and by playing a direct role in producing crops, processing oil, constructing smallholder estates, and arranging credit for companies and smallholders. The state shifted to a midwifery role by involving private estate companies and smallholders in the commodity chain. It organised comprehensive support for smallholders and improved their access to the market through linkages with mills. Both companies and smallholders boosted the performance of estate crops domestically and globally, ending the domination of state-owned companies in the palm-oil sector.

Economic Liberalisation (1990–97)

In the 1980s, declining oil and gas revenues and rising foreign-debt services increased the burden on the state budget (Booth 1998). The government had to reduce its intervention to a few basic objectives, such as achieving food security; it was no longer permitted to use BI's liquidity credit for palm oil (Badrun 2010).

The state-owned banks, which, according to Priyadi (1996), had previously operated as channels for various government credit programs, now had to operate similarly to commercial banks. In doing so, they could disregard the government's demand for development projects to be prioritised. BI switched its focus to managing monetary policy, having been active in arranging financial market intervention to reduce interest rates (Hill 2000). Private banks burgeoned, allowing big-business groups, to which many private banks were connected, to organise financing arrangements backed by the principal companies.

While the government targeted its support to smallholders, private estates grew rapidly owing to liberalisation of the banking sector and financial deregulation. The direction of liberalisation that initially aimed to introduce more competition into the financial sector was overtaken by Soeharto's interests, through his family and cronies; the New Order technocrats lost their ability to steer policy (Pincus and Ramli 1998). Big businesses enjoyed privileged access to capital mobilised from banks and owned by principal companies, as well as to the domestic stock market; foreign loan facilities; and, thanks to high-level government officials, credit from state-owned banks. Such privileged access emerged from cronyism and political patronage dictating the lending decisions of state-owned banks and enabling loans to be channelled to affiliated companies (Bennett 1999). Both actions undermined the requirements for mitigating social and environmental impacts in credit assessments. The freer investment regimes enabled businesses to expand without being restricted to allocating 70% of the estate to smallholders, as required in the PIR program (Gellert 2005). Ownership of private plantations ultimately ended up in fewer hands: 14 conglomerate groups dominated private estate ownership, owning 2.1 million hectares (Casson 1999).

Although direct financing of estate companies was no longer possible, the government decided to continue supporting smallholders through the KKPA (credit for farmer cooperatives) scheme (Badrun 2010). Smallholders applying for KKPA credit needed to be guaranteed by the milling companies that would purchase their fruit. A former KKPA consultant of BI's explained that the scheme 'opened the opportunity for the emergence of independent smallholders' (interview 1). Farmers looking to enter the palm-oil sector were no longer reliant on big estates.

In this period of state-regulated liberalisation, the state played a non-interventionist role of custodian and also adopted a midwifery role, regulating financial liberalisation to indirectly assist big companies to access capital for expansion. With the launch of the KKPA during the liberalisation period, the state adopted an 'official' midwifery role, enabling the emergence of a new group of entrepreneurs: independent smallholders. As the credit decision in general ignored the principles of prudence, requirements for mitigating social and environmental impacts were also largely ignored.

The Financial Crisis and Its Aftermath (1997–2006)

The 1997–98 Asian financial crisis damaged Indonesia's finances, fuelling political and social turmoil and ending three decades of high economic growth under the

New Order government. The former Minister of Agriculture said, 'The country faced [a] food crisis and bankruptcy; financial support to farmers was not possible any more' (interview 2). In 1998, Indonesia turned to the IMF, which later arranged a stabilisation package requiring fundamental restructuring of the banking sector (McLeod 1999). The IMF demanded BI withdraw from direct development financing (Grenville 2004), and this agreement was formalised in Law 23/1999 on Bank Indonesia. A former BI governor regretted this decision: 'It was a wrong-targeted recipe; rather than addressing misuses of liquidity support by big business that ruined Indonesia's economy, [the] IMF also abolished liquidity credit aimed for small business development' (interview 3). He also said, 'If the government did [eliminate liquidity credit] earlier during the good economic conditions of the 1990s, the impact might not [have] been that hard; it was not a suitable policy during the crisis'. BI used the term 'liquidity credit' to refer to liquidity support by big business and to liquidity credit for small business development: both were curbed under the same policy. The dismantling of BI's role in distributing liquidity credit ended the flow of state funds to oil-palm smallholders.

Concomitantly, the IMF advised increasing interest rates to curb capital flight, which, according to Casson (1999), hampered local palm-oil investors looking to access affordable credit. Despite immense pressure from the IMF, the Indonesian state sustained a finance scheme for smallholders until 2008, by transferring the remaining balance of KKPA credit to a new state-owned venture-capital company called Permodalan Nasional Madani (PNM). In 2013, PNM's head-office manager noted that credit to oil-palm smallholders and cooperatives contributed significantly to PNM's KKPA portfolio, but that no more than a few thousand smallholders were reached: PNM managed only the remaining KKPA budget, and many smallholders and their cooperatives could not meet the requirements (interview 4). It also lent at a slightly higher interest rate—16%, compared with 14% previously—since the credit was financed entirely from the KKPA scheme (earlier, some finance had come from the implementing banks).

In the early 2000s, the palm-oil sector expanded rapidly in response to increasing global demand, mainly from China (Garnaut 2015; Rosner 2000). Expansion into peatlands, where burning was the easiest way to clear land, 'flourished; these lands were considered underutilised' (Caroko et al. 2011). Such expansion happened at the onset of a fundamental change from a centralised Indonesian state to a decentralised government. Decentralisation made it easier for palm-oil companies to acquire forest and peatland areas without following statutory procedures; in return, the companies funded political campaigns (Varkkey 2013). Such a practice was not limited to Indonesian companies: foreign companies, like those from Malaysia and Singapore, operated within similar patrimonial networks in their home countries (Varkkey 2016).

Smallholder estates grew at the same pace as company plantations, and continue to do so (see appendix figure A1). Smallholders rarely have adequate access to financing, particularly long-term financing. An International Finance Corporation survey (Molenaar et al. 2013) of 300 smallholders revealed that only 44% of them (43% of the sample) had loans and that those loans were not necessarily related to oil-palm cultivation. Meanwhile, only 16% of the independent smallholders (57% of the sample) received loans for estate development. Smallholder interviewees (interviews 14 and 29–30) mentioned that they started their plantations with their

own money. Because their capital was limited, they used seeds from fallen fruit or bought uncertified seeds and relied on knowledge from friends or family who had plantations or had previously worked for an estate company.

Withdrawal of direct funding, the decentralisation policy, and land-grabbing resulted in the state facing increasing problems in balancing economic development, social equity, and environmental protection. While the companies enjoyed freer capital movement and illegal licensing through business patronage, the smallholders did their best to exploit market opportunities. The former Coordinating Minister for Economic Affairs said, 'As the palm-oil economy has proven to be a lucrative business, no one can stop its growth, while the state, at that time, could not do much to reduce its growth and impact' (interview 9).

The unbalanced growth of the palm-oil sector put the state under increasing pressure from national and international organisations. In the more democratic atmosphere, local communities assisted by NGOs increasingly criticised the state. This criticism increased after the 1999 Amendment to the Indonesian Constitution put sustainable development high on the national agenda. However, the former Minister of Agriculture said that the 'rule of law cannot do much without strategy, policy, and program; although it has been written in our Constitution, the government needs time to adjust' (interview 2).

There was a great need for the state to adopt a husbandry role. By so doing, it could assist entrepreneurs in facing the changing domestic and global circumstances. However, the state was unable to assume this role, as financial reserves had dried up and possibilities of assigning BI to finance development were limited. The state had to prioritise political stability and economic recovery. It therefore limited itself to regulation within the sector, adopting the role of custodian.

Economic Revitalisation (2006–)

The palm-oil sector was very important in Indonesia's economic recovery. Until 2007, it contributed 6% of Indonesian GDP and 80% of Indonesia's estate-crop exports; it also employed 13.4 million people on estates and 3.2 million people in the processing industry, increasing household and rural incomes (Directorate General of Estate Crops 2009; Susila and Setiawan 2007).

Whereas growers with more capital can overcome barriers impeding access to finance, smallholders still have difficulty accessing funding. Palm-oil business associations, company executives, agriculture ministry officials, and bankers all mentioned land titles as the main barrier to accessing finance (interviews 1 and 16–23). Many smallholders who own their land have only a letter issued by the village head as proof of ownership, and financial institutions are reluctant to accept such letters as collateral. BPN (the National Land Agency) admitted that its annual budget for mapping is limited, resulting in its having land data for only 5% of the total area of Indonesia and in most of these data being at the wrong scale and outdated (Winoto 2009). The cost of administering formal land ownership documentation has increased significantly as land has become scarcer. Interviews with bankers revealed that administration costs can jump from Rp 2.5 million per hectare for ordinary landholdings to several times higher than that for land with mining potential (interviews 17–18).

The state's intention when economic circumstances improved was to arrange finance schemes to help smallholders in replanting and in increasing plantation

productivity. In 2006, the state launched the KPEN-RP (Credit for Bioenergy Development and Estate Revitalisation) scheme, which targeted plantations no larger than four hectares. Most of the credit was used to open new plantations rather than replanting. The estate revitalisation program ran until 2014. In an interview for the Ministry of Agriculture's newsletter, the then Deputy Minister of Agriculture said that 213,852 hectares of oil-palm estates had been financed (*Sinar Tani*, 5 June 2013). This finance scheme was terminated in early 2015, soon after the new government had taken office.

KPEN-RP credit had a maximum grace period of five years and received interest subsidies from the Ministry of Finance. Smallholders could only access this scheme by joining cooperatives or partnerships with an estate company and obtaining a purchase guarantee from a milling company. The Directorate General of Estate Crops provided guidance on the amount of credit needed for replanting: between Rp 45 million and Rp 57 million (depending on the district) for every two hectares. Yet smallholders noted that two hectares could be planted for less than Rp 30 million (interviews 14 and 29), and some financial institutions agreed (interviews 17 and 26).

The agriculture and finance ministries worked with the banks appointed by the government. BI could only providing advice to the line ministries, and could not pressure banks to meet government targets—unlike previously, when, for example, it took over the implementing banks' credit operations and capital participation to reduce high arrears of PIR credit (Badrun 2010; Prawiranata 1996).

Although finance schemes were available, problems remained. Until April 2014, KPEN-RP credit had reached only 45% of its target (Directorate General of Estate Crops 2015). A consultant assigned by BI to assist with the implementation of KPEN-RP said, 'Our margin was meagre; we almost got nothing except tired' (interview 1). Bank officials had similar opinions: for them, KPEN-RP was costly, especially given the lack of coordination between the agriculture and finance ministries and local governments (interviews 16–18).

Ministry of Agriculture officers attributed the low absorption of KPEN-RP to competition with KUR (people's business credit, managed by the Coordinating Ministry for Economic Affairs) (interviews 7 and 22). They said the government paid more attention to KUR schemes because KPEN-RP was a revitalisation initiative of the former vice-president who ran against President Susilo Bambang Yudhoyono in the 2009 election. However, the Coordinating Ministry for Economic Affairs maintained that KPEN-RP and KUR were different: the government provided insurance to KUR instead of interest subsidies (interviews 22 and 23). Therefore, KUR did not necessarily provide cheaper loans and the grace period was not as long as that of KPEN-RP.

The banking sector has been reluctant to finance the agricultural sector. A BI officer explained: 'In general, Indonesian banks [prefer] short-term credit, like for trading and consumption, while credit for agriculture, together with forestry, livestock farming and fishery, never [goes] beyond 7%' (interview 27). A farmer in South Kalimantan said, 'Banks, in general, are interested in farmers with money, as I experienced when I did not have money: no one came to me. After I earned a lot of money, bankers proactively approached me to offer credit products, whether I would need them or not' (interview 29).

The banking sector became increasingly reluctant to finance palm-oil smallholders because bankers doubted the management capacity of cooperatives; the

banks preferred companies to build and manage estates without too much farmer involvement (interviews 16 and 18). Such reluctance was not shown by financial institutions targeting small and medium-sized enterprises (interviews 4, 17, and 26). The opinions expressed by the corporate bankers whom we interviewed match the practice of the Kemitraan and Manajemen Satu Atap (One Roof Management) schemes that have been promoted by the government since 2005 (in the absence of the PIR program), where estate companies worked directly with smallholders via village-level cooperatives to manage entire plantations and paid local landowners monthly (Gillespie 2012). A consultant to the central bank highlighted a similar problem: 'In many cooperatives, the managers misused their assets' (interview 1). This is in line with McCarthy's (2010) observation about the poor performance of smallholder cooperatives.

To overcome the banking sector's reluctance to fund agriculture, Indonesian policymakers have been considering since 2004 whether to establish a bank specifically for agricultural financing (Ashari 2010). In our interviews, the officers from the coordinating agriculture and economic ministries shared the same opinion. An officer from the Ministry of Agriculture said, 'The key is in how the central bank is managed—that currently does not include financing development' (interview 22), whereas an officer from the Ministry of Economic Affairs said, 'Establishment of a special agriculture bank will not help with reliance of the funding from the market; in the past we could organise intensive agriculture financing when the central bank was still involved directly in organising development finance' (interview 22). Furthermore, the current policy trend of the state's financing role focuses on engaging private-sector players and, according to Martin and Clapp (2015), will end in commercially oriented private financial providers reaping profits under the state's facilitation.

The period after the Asian financial crisis also sparked smallholders' enthusiasm in investing in order to profit from high commodity prices, especially in 2007 and early 2008 (Potter 2010). Many oil-palm growers with limited capital developed their plantation without assistance from companies and government extension officers who provided seeds, fertilisers, credit, and technical assistance in the nucleus-estate system (Cahyadi and Waibel 2013). The researchers, NGO representatives, and farmers we interviewed observed that growers without sufficient capital preferred cheaper options when starting estates—such as encroaching on forest and peatland areas and clearing land by burning, which accelerated environmental destruction (interviews 5, 6, 8, 25, 30, and 31).

Accelerated environmental destruction to clear land for oil-palm estates led to worldwide concern and demands for more sustainable practices. International NGOs and buyers created the Roundtable on Sustainable Palm Oil, a voluntary organisation to promote the introduction of sustainability standards in the palm-oil chain (Schouten, Leroy, and Glasbergen 2012). The Indonesian government subsequently developed the Indonesian Sustainable Palm Oil (ISPO) standard to hasten the implementation of sustainable practices (*Jakarta Post*, 2 Dec. 2010). ISPO, which has come to rival the international roundtable as the dominant sustainability scheme for oil palm in Indonesia (Hospes 2014), demands that all plantations in the country be certified. The principles and criteria for smallholders are stipulated in Regulation of the Minister of Agriculture 11/2015 but are not yet mandatory, pending further coordination in the ministry and among local governments.

Since certification is costly, the state has committed to supporting smallholder certification.

To meet the demand for inter-sectoral financial sources for palm-oil development after the termination of KPEN-RP, the government launched the Indonesia Estate Crop Fund (IECF) for palm oil. IECF is a public–private partnership, supervised by the Ministry of Finance, that provides finance schemes for biofuel development, smallholder support (including ISPO certification), research and education, and promotion (Krishnamurti 2016). IECF support mainly finances biodiesel development, while smallholder financing still faces problems of land titling, financial institutions' reluctance for agriculture lending, and companies' reluctance to buy fruit directly from independent smallholders (SawitIndonesia.com, 19 Jan. 2016). Farmers complain that the new scheme of palm-oil tax has eroded their profits (*Kompas*, 4 Feb. 2016). The then President Director of IECF, however, in a presentation in The Hague in February 2016, said that government support for biodiesel has helped farmers to avoid a decline in the price of certified palm oil since 2015. The financing of ISPO has yet to be finalised. According to its chair, ISPO will prioritise company certification and, contingent on IECF's support, continue to smallholder certification (interview 32).

Since 2006, the state has adopted a husbandry role but also performed a midwifery role. The government aims to support replanting, mainly on the existing smallholder estates, which is a husbandry role, yet it still intends to support new estates developed on degraded land, which is a midwifery role. The role is restricted to facilitation, since direct financing is no longer possible under the central bank's restricted role. The current government, elected in 2014, has organised IECF's finance scheme in addressing price decline and sustainability—an act that is part of a husbandry role. The government's priorities are economic development and preparing the industry to meet the sustainability standards demanded by the global market.

DISCUSSION

In the post-colonial political-economic history of Indonesia, the state has performed different financing roles in governing the development and sustainability of the palm-oil sector. These roles are outlined, by period, in table 3, together with the policy priorities of each period. Our historical review of these roles shows that the government has not developed the palm-oil sector to balance economic development, environmental protection, and social equity. In all five historical periods reviewed, with the exception of the post-independence era (1945–67), finance schemes have mainly been used to induce economic transformation and increase revenue from palm-oil exports.

Balancing economic development, environmental protection, and social equity requires more than simply directing the priorities of public policy. It also requires changes in governance, or 'the process of steering society and the economy through collective action and in accordance with some common objectives' (Torfing et al. 2012, 14) such as developing the palm-oil sector or promoting sustainable palm-oil production. Various institutional barriers or weaknesses of the Indonesian state identified by scholars also have to be addressed: fragmentation of governance efforts across different state agencies and weak policy coordination; limited

TABLE 3 *Financial Roles and Priorities of the Indonesian State in Governing the Palm-Oil Sector, by Period*

Period	Role	Specification	Priority
Economic revitalisation (2006–)	Husbandry & midwifery	Enabling SME credit for oil-palm smallholders; credit for estate replanting; credit for biofuel development; plan to support ISPO certification from state budget	Economic development; preparing palm-oil producers for sustainability demands from the market
Financial crisis & aftermath (1997–2006)	Custodian	Elimination of BI's role in financing development projects; establishment of a financial company to manage remaining budget of smallholder credit program without additional credit	Economic development; preventing total economic collapse
Economic liberalisation (1990–97)	Midwifery (light)	Limiting the use of liquidity credit to cash-crop development; privatisation of banking sector; opening capital market; credit to smallholders organised in cooperatives (with estate companies as guarantors); liquidity credit from BI; takeover of arrears by BI	Economic development; limited attention to social equity & environmental protection
Soeharto's interventionist state (1967–90)	Demiurge & midwifery	Soft loans to companies; credit to smallholders linked with estate companies as buyers; liquidity credit from BI; control of foreign investment; state-owned banks as executors of development programs	Economic development & social equity (inclusion of smallholders); limited attention to environmental protection (accepting World Bank's environmental standard)
Post-independence era (1945–67)	Custodian	Restricting private investments in palm-oil sector through regulation	Social equity or anti-economic development

Note: BI = Bank Indonesia; SME = small or medium-size enterprise; ISPO = Indonesian Sustainable Palm Oil.

institutional capacities; corruption; a poorly functioning judicial system; a lack of both transparency and an accountable democratic process; and weak monitoring and enforcement (Nguitragool 2012; Gellert 2010; Hamilton-Hart 2015; Jarvis 2012).

Though integrating environmental protection and social equity into the current development agenda is not easy for the government, there are clear signs that it has learnt from initiatives implemented by the private sector. The state has developed a national standard for sustainable palm oil, has explored ways to establish agriculture banks, and is supporting smallholder replanting with consideration of sustainability. The twofold challenge for the Indonesian state in aiming to govern the palm-oil sector through finance and to simultaneously balance economic development, environmental protection, and social equity is to address institutional weaknesses and to further strengthen its capacity to learn from and engage with non-state actors (Evans 2008; Eckersley 2004).

As the state became more flexible in its ability to coordinate and mobilise agencies to pursue its development objectives, its financing roles became more comprehensive. The interventionist era saw strong coordination and leadership from technocrats who were guided by central planning and by BI's direct involvement in development financing. During the state-led liberalism era, the government's financing role was limited, but BI continued to arrange finance schemes for smallholders. The dismantling of BI, and then of the centralised state, by decentralisation was in response to the 1997–98 Asian financial crisis and reduced the state's flexibility in arranging finance schemes. The current period shows that although the economy has recovered, the state's limited flexibility in governing economic actors has restrained its capacity to arrange complicated finance schemes.

CONCLUSION

The Indonesian state has not played a consistent role in using finance schemes to direct oil-palm expansion; rather, it has adopted different roles and combinations of roles (see table 3). These roles, and the changes they have brought, have been mainly shaped by shifts in the dominant public policy and ideologies of the state, rather than specifically relating to challenges in the palm-oil industry. The roles the state has played are historically contingent, reflecting different political and economic regimes and their changes: decolonisation, nationalisation, and new social-political instability; the birth and demise of an interventionist state; the rise and fall of financial and economic crises; and new global demands for sustainability and biofuel development.

Rather than aiming to achieve a balance between economic development, environmental protection, and social equity, these finance schemes have been consistently used to promote economic development. The state has aimed at different targets between ensuring food security and earning foreign exchange and tax revenue from exports. Historically, environmental protection has been given the least priority in the state's finance schemes. In the period of comprehensive state intervention, environmental protection was legislated but weakly enforced. Such weak enforcement worsened; from 1990 to 2006, the state did not play an active financial role. The current commitment to environmental protection is closely linked to the state's response to maintaining the performance of the palm-oil sector, given the demand to improve sustainability practices.

TABLE A1 *Sources Consulted, by Period*

Period	Publications	Policy documents	Interviews
Economic revitalisation (2006–)	Susila & Setiawan (2007); Badrun (2010); Prawiranata (1996); Gillespie (2012); McCarthy (2010); Ashari (2010); Potter (2010); Cahyadi & Waibel (2013)	Law 39/2014 on Plantations; Ministry of Agriculture Regulations 57/Permentan/KU.430/7/2007, 33/Permentan/OT.140/7/2006, 19/Permentan/OT.140/3/2011, 11/Permentan/OT.140/3/2015; Directorate General of Estate Crops Decree 192/Kpts/RC.110/6/2013; Ministry of Finance Decrees 198/PMK.05/2010, 117/PMK 06/2006, 48/PMK.05/2009; Presidential Instruction 6/2007; Krishnamurti (2016)	1, 16–23, 25–32
Financial crisis & aftermath (1997–2006)	McLeod (1999); Grenville (2004); Casson (1999); Garnaut (2015); Rosner (2000); Zen, Barlow, & Gondowarsito (2005); McCarthy (2010); Caroko et al. (2011); Sheil et al. (2009)	1945 Constitution—First Amendment (1999), Second Amendment (2000); BI Decrees 30/97/KEP/DIR, 6/26/PBI/2004; Law 23/1999 on BI; BI Circular 3/2/BKr; Law 18/2004 on Plantations	2–9
Economic liberalisation (1990–97)	Priyadi (1996); Hill (2010); Badrun (2010); Pincus & Ramli (1998); Bennett (1999); Gellert (2005); Casson (2000)		1
Soeharto's interventionist state (1967–90)	Hirawan (2011); Casson (2000); Paoli et al. (2013); Booth (1988); Crouch (2007); Gwyer & Avontroodt (1974); Zen, Barlow, & Gondowarsito (2005); Badrun (2010); Vermeulen & Goad (2006); Casson (1999); Rich (2002); Feintrenie, Chong, & Levang (2010); McCarthy (2010); Rival & Levang (2014)		
Post-independence (1945–67)	Furnivall (1976); PASPI (2014); Mackie (1961, 2007); Booth (1988); Arndt (1971)		

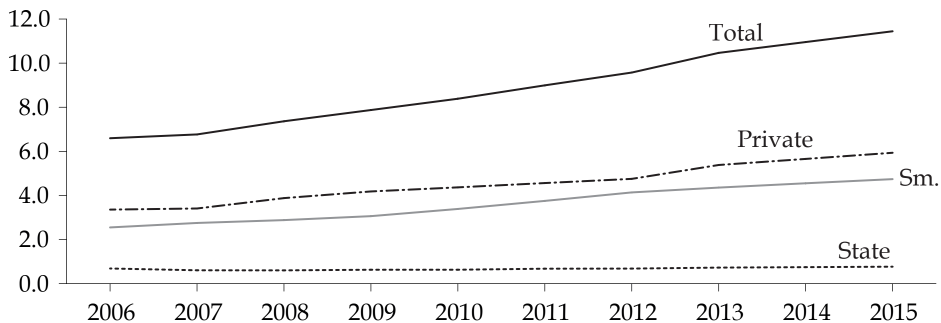
Note: BI = Bank Indonesia.

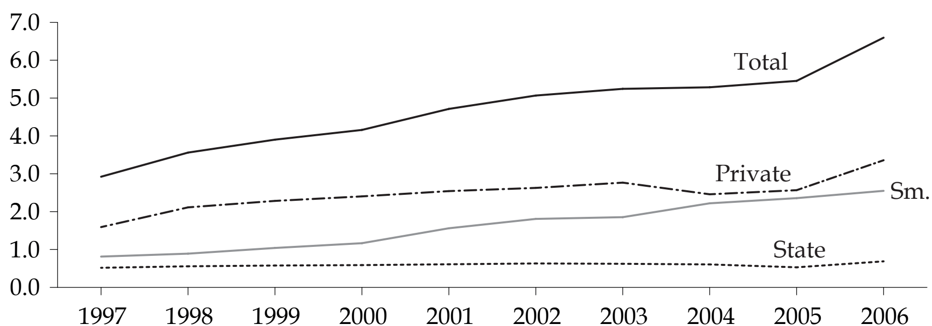
TABLE A2 *List of Interviews*

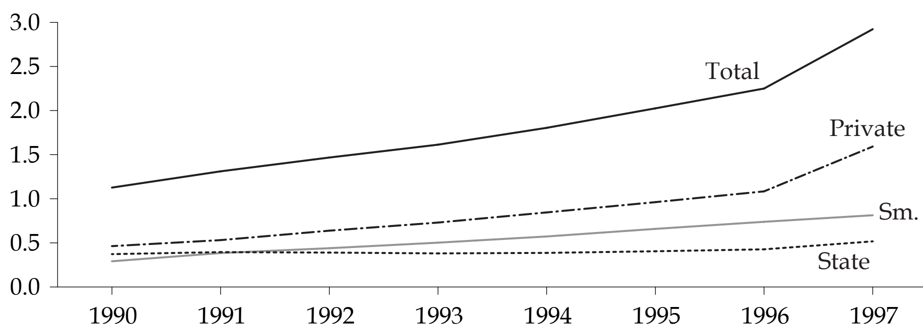
No.	Interviewee(s)	Location	Date
1.	Regional consultant of BI	South Kalimantan	23 Jan. 2014
2.	Former minister of agriculture	Greater Jakarta	19 Feb. 2014
3.	Former governor of BI	Greater Jakarta	6 Mar. 2014
4.	Finance company officer 1 (3 people, interviewed in group)	Greater Jakarta	20 Jan. 2014
5.	NGO 1	Greater Jakarta	7 Oct. 2013
6.	Farmers' union 1 (national)	Greater Jakarta	7 Oct. 2013
7.	Ministry of Agriculture officers (2 people, interviewed in group)	Greater Jakarta	2 Dec. 2013
8.	National plantation research institute researcher	Greater Jakarta	3 Dec. 2013
9.	Former minister of economic affairs	Greater Jakarta	13 Sept. 2013
10.	International finance institution officer	Greater Jakarta	24 July 2013
11.	Staff member of international NGO 2	Greater Jakarta	30 July 2013
12.	Former regional director of BI	Greater Jakarta	16 Aug. 2013 14 Jan. 2014
13.	NGO 2 (3 people, interviewed in group)	Jambi	18 Dec. 2013
14.	Farmers' union representative 2	Jambi	19 Dec. 2013
15.	Government officer at the provincial estate development office	Jambi	19 Dec. 2013
16.	Bank officer 1	South Kalimantan	23 Jan. 2014
17.	Bank officer 2 (5 people, interviewed in group)	South Kalimantan	23 Jan. 2014
18.	Bank officer 3	South Kalimantan	24 Jan. 2014
19.	Business association 1	Greater Jakarta	14 Oct. 2013
20.	Company top executive 1	Greater Jakarta	14 Oct. 2013
21.	Company top executive 2	Greater Jakarta	25 Oct. 2013
22.	Ministry of Agriculture officer 2	Greater Jakarta	18 June 2014
23.	Ministry of Economic Affairs officer 1	Greater Jakarta	18 June 2014
24.	Ministry of Economic Affairs officer 2	Greater Jakarta	19 May 2014
25.	University researcher	Greater Jakarta	4 Sept. 2013
26.	Finance company officer 2	Riau	10 Feb. 2014
27.	Government officers at BI 1	Greater Jakarta	8 Oct. 2013
28.	Government officers at BI 2	Greater Jakarta	9 Oct. 2013
29.	Farmers and intermediary traders	South Kalimantan	25 Jan. 2014
30.	Farmers (around 20 people, interviewed in group)	South Kalimantan	24 Jan. 2014
31.	NGO 3 (3 people, interviewed in group)	Riau	5 Feb. 2014
32.	ISPO Commission coordinator	Greater Jakarta	25 Jan. 2016

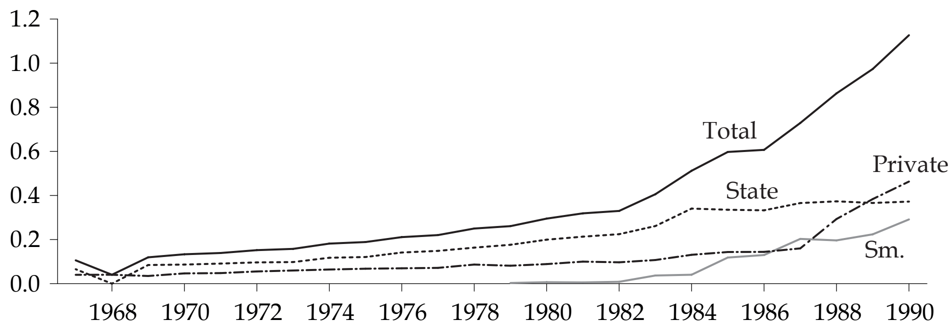
Note: BI = Bank Indonesia; ISPO = Indonesian Sustainable Palm Oil.

FIGURE A1 *Oil-Palm Plantation Area, 1967–2015 (million hectares)*





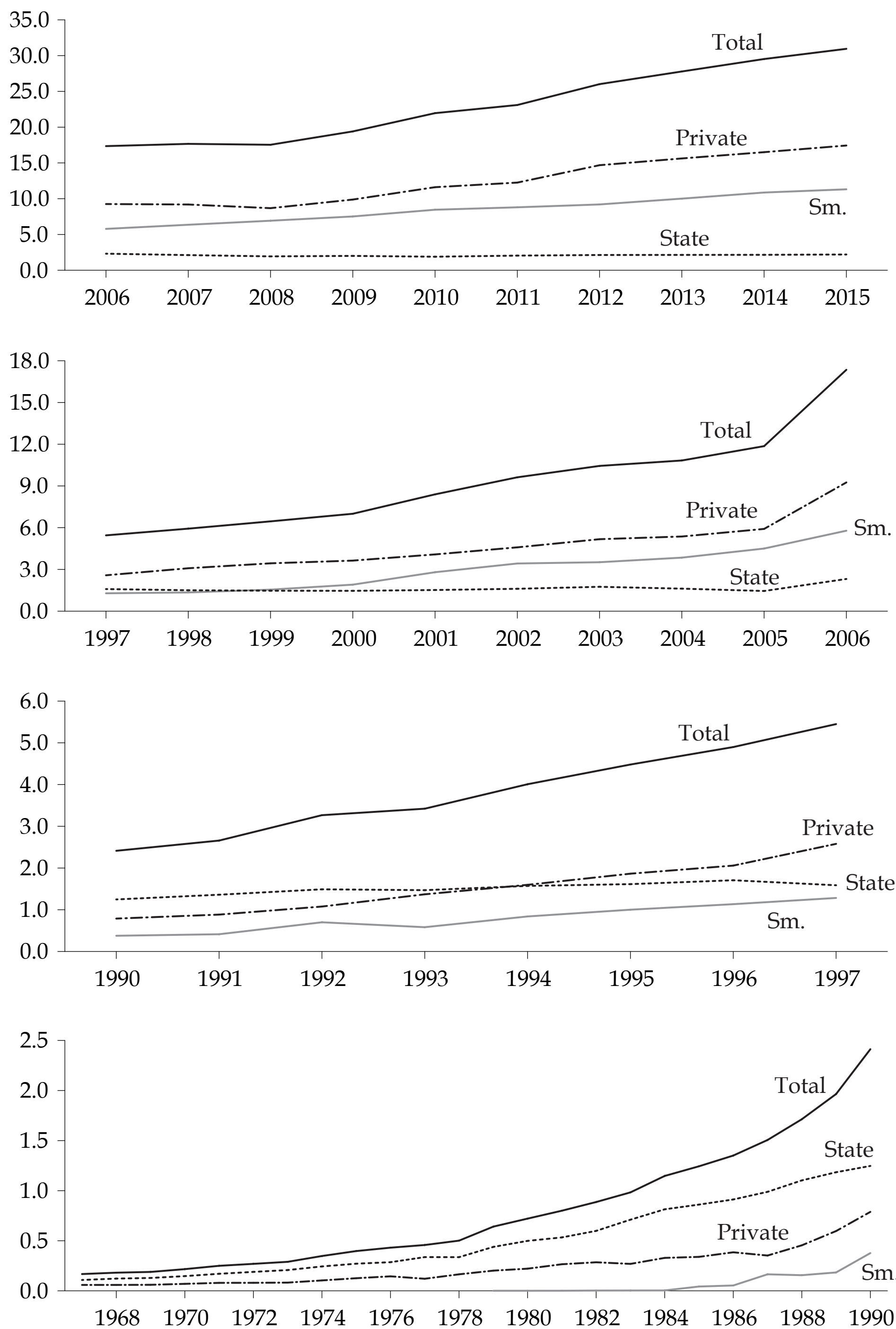




Source: Data from the Directorate General of Estate Crops (2015).

Note: Sm. = smallholder.

FIGURE A2 *Palm-Oil Production Output, 1967–2015 (million tonnes)*



Source: Data from the Directorate General of Estate Crops (2015).

Note: Sm. = smallholder.

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