

***Hilirisasi: Resource-based industrialisation and Global Production Networks in the Indonesian coffee and cocoa sectors***<sup>1</sup>

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**Abstract**

This article assesses the broader policy trend towards *hilirisasi* (literally “downstreaming”) in Indonesia, and the ability and limitations of these policies to meet their objectives. We explain the limitations of these policies in the context of Indonesia’s position within Global Production Networks (GPNs) for each of the coffee and cocoa industries. Despite the claimed success of the *hilirisasi* policy, particularly one instrument using an export tariff for cocoa, it does not fully manifest in a successful policy framework because the analysis fails to take into account the strategies practiced by the lead firms both in response to the given set of industrial policies and in presenting opportunities for industrial upgrading. The case is shown in both the cocoa and coffee sectors, each with its own actor dynamics within a set of globally connected networks. We conclude by suggesting that the effectiveness of Indonesian policy in this area would be greatly enhanced through a heightened appreciation of GPN dynamics, lead firm strategies and related outsourcing opportunities, along with an openness to regional industrial integration.

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<sup>1</sup> This paper was prepared as a discussion paper for circulation at a Discussion Forum organised by the Badan Pengkajian Perdagangan Luar Negeri, Badan Pengkajian dan Pengembangan Perdagangan (BPPP) and the Canada-Indonesia Trade and Private Sector Assistance (TPSA) Project held at the Ministry of Trade, Jakarta on 28 August, 2018. Research for this paper was funded by the Australian Centre for International Agricultural Research (ACIAR).

**Keywords:** *resource-based industrialization, Global Production Networks (GPNs), coffee, cocoa, chocolate, strategic coupling*

**JEL Codes:** Q1, R1, R3, R5

### **List of Abbreviations**

AEKI: Asosiasi Eksportir Kopi Indonesia

AFTA: ASEAN Free Trade Agreement

AIKI: Asosiasi Industri Kakao Indonesia

APIKCI: Asosiasi Pengusaha Industri Kakao-Cokelat Indonesia

APKAI: Asosiasi Petani Kakao Indonesia

ASKINDO: Asosiasi Kakao Indonesia

DITJENBUN: Direktorat Jenderal Perkebunan Kementerian Pertanian Republik Indonesia

GAEKI: Gabungan Eksportir Kopi Indonesia

GDP: Gross Domestic Products

GPNs: Global Production Networks

GVCs: Global Value Chains

ICCRI: Indonesian Coffee and Cocoa Research Institute

ICO: International Coffee Organization

ICCO: International Cocoa Organization

KEMENPERIN: Kementerian Perindustrian Republik Indonesia

MP3EI: Masterplan Pengembangan dan Percepatan Pembangunan Ekonomi Indonesia

PT: Perseroan Terbatas

## INTRODUCTION

This article assesses the broader policy trend towards *hilirisasi* in Indonesia. A recently introduced term, the Government of Indonesia defines industrial *hilirisasi* (literally ‘downstreaming’) as the ‘development of industry in an attempt to strengthen the industrial structure of the agricultural, mining and oil-based chemical sectors’ (KEMENPERIN 2015a). The term was popularised during the post-*reformasi* era, with Susilo Bambang Yudhoyono’s MP3EI<sup>2</sup> corridors a notable example of its planning application (Agusalim 2013). It can be considered part of a resource-based industrialisation strategy that has long been promoted by Indonesia’s Ministry of Industry and others. The fundamental rationale is to add value to natural resources prior to export. Through *hilirisasi*, the government aims to accelerate economic growth, strengthen the industrial base of the economy, enhance the spatial distribution of industry across Indonesia, add value for export and domestic products, increase employment, and substitute imports (KEMENPERIN 2016).

Despite its increasing use in various industry sectors, the concept is often understood differently by different ministries and departments (Berlian 2016). The Ministry of Industry, for instance, pushes *hilirisasi* towards creating added value across the value chain before the product is exported. Similarly, the Ministry of Trade aims at increasing the export value, as well as maintaining these activities in a stable economic environment. The Ministry of Agriculture, on the other hand, sees *hilirisasi* differently; it is a means towards promoting the welfare of farmers and increasing their income by encouraging value capture through off-farm activities. Finally, the Ministry of Finance aims to increase state revenue through extracting value throughout the industrial value chain. Although intersecting in certain aspects, these different ministerial objectives may contribute to different key performance indicators and, as a result, ineffective implementation.

Further criticisms of the very idea of *hilirisasi* are presented by Patunru and Rahardja (2015), who frame *hilirisasi* (and industrial policy more broadly) as a form of trade protectionism, which is

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<sup>2</sup> MP3EI, or the Master plan for the Expansion and Acceleration of Indonesia’s Economic Development, is a master plan to assign corridors for regional economic growth based on the resources and potentials owned by the particular regions.

driven by an anti-foreign attitude that discourages industry from being connected to global value chains. A concerted effort to capture the added value across multiple value chains by bringing the production domestically, as Patunru and Rahardja argue, will in fact lessen Indonesia's participation in global and regional production networks, and therefore negatively affect Indonesia's exports and investment attractiveness in the longer term.

Adding further nuance to this argument, this paper aims to situate *hilirisasi* policy within a wider understanding of global production networks and global value chains by identifying the linkages between lead firms, government policy, and suppliers. We use the case of Indonesia's cocoa-chocolate (subsequently we use the shorthand "cocoa" in this article) and coffee industries, two commodities that arguably play a significant role in Indonesia's economy and have been affected by, and are also informing, the broader implementation of *hilirisasi* in both the agricultural and manufacturing sectors. Previous studies have attempted to explore Indonesia's coffee and cocoa value chains through the GPN framework, but there has not been any specific study that links governmental policies on *hilirisasi* with the framework.

The paper is divided into four further sections. The next (second) section reviews the theoretical framework of industrial policy and GPNs more broadly. The third section provides an overview of the GPNs for coffee and cocoa, and the key strategies adopted by lead firms in these sectors. The fourth section then contextualises Indonesia's food processing industry and the coffee and cocoa-chocolate sectors specifically within these broader GPN dynamics. The fifth section then discusses the implementation of *hilirisasi* policy in Indonesia across two sectors and the interaction between these policies and prevailing GPN structures and lead firm strategies. We argue that it is this interaction that determines industrial outcomes. This paper will then conclude with a reflection on the key ways in which a GPN-based analysis can inform industrial policy and regional development interventions.

## ***HILIRISASI*, INDUSTRIAL POLICY AND GLOBAL PRODUCTION NETWORKS**

*Hilirisasi* is closely aligned with the much older idea of resource-based industrialisation (RBI) (Auty 1988, 1994; Cramer 1999), and is one of a number of strategic industrial policies (Low and Tijaja 2013). Industrial policy itself is often seen as re-involvement of the state to improve

industrial competitiveness, and Cimoli et al. (2009) define industrial policy as ‘a concerted, focused, conscious effort on the part of government to encourage and promote a specific industry or sector with an array of policy tools’. Through resource-based industrialization, it is argued, resource-rich countries can capture added value from primary resources. In the argument that follows, the government seeks to achieve this by using a combination of policy instruments, but tend to primarily rely upon discouraging exports of unprocessed products.

RBI, however, and industrial policy in general, has been widely critiqued for targeting the wrong groups of stakeholders (Low and Tijaja 2013; Rodrik 2004). Rather than providing incentives to potentially interested manufacturers, it tends to impose programs on farmers and/or resource extractors (the mining industry, for instance). The point of this argument is that farmers and other primary producers are generally uncompetitive manufacturers who are unlikely to process the resources effectively and efficiently (due in part to lacking economies of scale) despite the incentives given. This occurs partly because governments are not capable of making good choices (‘picking winners’), along with occasional cases of rent seeking and corruption. Auty (1994, 2001) further made the argument that RBI reflects a broader development strategy frequently pursued by resource-rich countries that engender a factional, predatory or extractive political state (and one that is ultimately prone to collapse), thereby supporting a resource curse hypothesis (refer also to Acemoglu and Robinson (2012) for a discussion of extractive institutions). While the focus of industrial policy is to create a strategic collaboration between the private sector and the government (Rodrik 2004), governments and firms do not necessarily share similar objectives. Whereas governments aim at capturing value for the sake of the domestic industrial actors and stakeholders, as well as ostensibly achieving more equitable economies, it is often the case that firms are orientated towards maximizing profits (Low and Tijaja 2013). Therefore, should industrial policy be implemented, it requires compatibility with the firm’s strategies to have a chance of success. Morris et al. (2012) have presented a more optimistic analysis of the opportunities for RBI in Sub-Saharan Africa through “forward linkages” in the commodity sector based largely on global trends towards outsourcing by lead firms of industrial activities not considered to be their core competency. This analysis draws explicitly from insights into global economic restructuring as presented in global value chain theory (as developed by *inter alia* Kaplinsky and Morris, 2001, and Gereffi et al., 2005).

In exploring the ways in which global economic restructuring, and lead firm strategies in particular, interact with local government policies, this paper proposes the use of the theoretical framework of Global Production Networks (GPNs). Promoted most actively by economic geographers (Henderson et al. 2002; Coe et al. 2008; Yeung and Coe 2015), a GPN is defined as ‘an organisational arrangement comprising interconnected economic and noneconomic actors coordinated by a global lead firm and producing goods or services across multiple geographic locations for worldwide markets’ (Yeung and Coe 2015, 32). GPNs, along with the closely aligned Global Value Chain (GVC) framework (Gereffi et al. 2005), have become an important framework to assist analyses of current processes of economic globalization. The OECD (2012), for instance, claims that, given that production processes have been fragmented and distributed across different locations, global value chains/global production networks have become the backbone and central nervous system of the world economy. Building off earlier contributions by Gereffi (1999) and Humphrey & Schmitz (2002), a key contribution of this broader literature has been to present industrialisation in East Asia as a process of functional upgrading within a value chain that is often driven by outsourcing strategies of lead firms elsewhere in the world economy. This is an explicitly buyer-driven understanding of industrialisation processes.

As also advocated by Patunru and Rahardja (2015), the economic performance of a country’s industrial sector can be assessed through its position in the GPN (we will henceforth use this term instead of GVC, but recognise the obvious conceptual similarities). The configuration of a GPN allows a degree of internationally substitutable value creation across the network. In the second iteration of the GPN framework (or GPN 2.0), Yeung and Coe (2015) argue that GPN analysis is particularly useful in observing the dynamics and behaviour of global and regional networks as determined by the strategies and decision-making activities of the lead firms. Yeung and Coe (2015) delineate four firm-specific strategies (intrafirm coordination, interfirm control, interfirm partnership, and extrafirm bargaining), which are causally related to the particular competitive dynamics within the GPN under consideration. These dynamics are constituted by the lead firm’s cost-capability ratio (e.g. a trade-off between the costs of keeping an activity in-house and the technology, know-how, and human resources required for the activity), market imperatives (e.g. reach and access, time-to-market, customer behaviour, preferences), financial disciplines (e.g.

access to finance, investor and shareholder pressure) and the wider risk environments it encounters (including environmental and social risks). Whereas intrafirm coordination involves internal strategies such as vertical integration, interfirm control and partnership relates to strategies that involve outsourcing of activities to other economic actors, either as dependent suppliers (control) or independent partners (partnership), while extra-firm bargaining involves negotiations with non-economic actors such as local/national governments and NGOs (Yeung and Coe 2015, and Neilson et al. 2018 for further elaboration of these actor practices in the global chocolate industry).

From a GPN 2.0 perspective, it is conceivable that *hilirisasi* policy can create a market imperative, as well as shifting risk environments, towards which lead firms adjust their firm-specific strategies accordingly (Yeung and Coe 2015). The combined effect, or *strategic coupling*, of lead firm strategies with regional institutional settings can be a powerful trigger for industrialisation and regional development. This aligns with the earlier argument put forth by Yeung (2009), which sees the developmental state as a necessary, but insufficient, condition for regional development to take place. Instead, from his study of the East Asian industrial development, Yeung argues that we need to look at the strategic coupling of lead firms in the specific regions where the policies take place as well as at a larger geographical (global) scale. The key contribution we seek to make in this paper is that *hilirisasi* policies in Indonesia are only likely to be effective if they strategically couple with the strategies of lead firms within Global Production Networks.

## **LEAD-FIRM STRATEGIES IN THE COFFEE AND CHOCOLATE SECTORS**

Consistent with our approach to understanding *hilirisasi* as an economic development outcome strongly influenced by the dynamics of specific global production networks, we will first provide a brief overview of these networks for coffee and cocoa, and the strategies currently adopted by lead firms in each case. Table 1 provides an overview of the key actors and their roles within the respective networks under consideration.

### **Lead firm strategies in the coffee sector**

Global coffee production networks are governed by large multinational roasting firms, including Mondelez / JDE, Nestle, JM Smucker, Strauss, Tchibo, Starbucks and Lavazza, many of which actively source coffee from Indonesia and can (in a GPN sense) be considered as global lead firms.

Nestle is currently the world’s largest coffee company, owning an estimated 22% of the global market share in 2016 (Nestle Annual Review 2016). These firms work closely with international trading companies (such as Ecom Agroindustrial Corp (Indocafco in Indonesia), Armajaro Trading, Olam International, Louis Dreyfus Group, ED&F Man (Volcafe), COFCO, and Amtrada (Nedcoffee and Daarnhouwer)) that source coffee on their behalf. Whereas these trading companies previously depended on local exporting firms to source coffee, there has been a gradual change whereby these international traders have become increasingly active within producer countries (Neilson 2008).

**Table 1.** Key Actors in the coffee and cocoa-chocolate sectors in Indonesia

	<b>Coffee</b>	<b>Cocoa-chocolate</b>
<b>Lead firms</b>	International branded coffee manufacturers (D.E Master Blenders, Nestle, JM Smucker, Tchibo, Starbucks, Lavazza) and national branded coffee manufacturers (Kapal Api Group/Santos, Mayora Indah, Sari Incofood, J.CO etc)	International branded chocolate manufacturers (Delfi, Hersheys, Mars, Mondelez etc.) and national branded chocolate manufacturers (Mayora Indah, Garuda foods)
<b>Strategic partners</b>	Marketing firms, distributors, retailers (hypermarket, supermarket, minimarket), cafes and restaurants	Marketing firms, distributors, retailers (hypermarket, supermarket, minimarket)
<b>Specialized suppliers (industry specific)</b>	Some bulk soluble coffee manufacturers located in Indonesia for export markets (eg. PT. Aneka Coffee Industry)	Coverture makers (eg. Barry Callebaut, ADM)
<b>Specialized suppliers (non-industry specific)</b>	International trading companies and exporters (e.g Ecom, Volcafe, Louis Dreyfuss, Sari Makmur, Indocom, etc.)	Cocoa grinders (Barry Callebaut, ADM, Cargill, Ecom, Olam etc.) – although these grinders are performing increasingly specialised roles
<b>Generic suppliers</b>	Coffee farmers and traders	Cocoa bean suppliers and mainly small farmers but also includes trader and other inputs (sugar, dairy, nuts etc.)
<b>Extra-firm actors</b>	NGOs, certification companies, associations, government, research centers (ICCRI)	NGOs, certification companies, associations, government, research centers (ICCRI)

Considering Indonesia as a source country for global lead firms, however, is only a partial portrayal of the industry. At the downstream level, the processing sector within Indonesia is also growing significantly to cater to the needs of the domestic and, to a lesser extent, international markets (especially for soluble coffee). Euromonitor data (2015) shows that there are four established lead

firms that make up more than 50% of the domestic market in Indonesia. These are Santos Jaya Abadi (contributing to 23.4% of the total share, with popular brands such as Kapal Api, ABC and Good Day), PT Nestle Indonesia (11.1%, with brands like Nescafe), PT Sari Incofood (9.3%; e.g. Indocafe), and PT Mayora Indah (7.9%, e.g. Torabika coffee). Similar to the growing trends in Eastern Europe, these Indonesian companies have tapped into an increasing demand for the so-called 3-in-1 instant coffee products (combining soluble coffee with sugar and creamer in a pre-packaged form).

At the retail end of the value chain, there has been an emergence of a new café culture, particularly in larger urban areas of Indonesia, with international roaster-retailer firms such as Starbucks (operating 326 stores across Indonesia in 2018) and Coffee Bean and Tea Leaf (108 stores), competing with domestic coffee chains such as J. Co Donuts and Coffee (226 stores) and Excelso (owned by the Kapal Api Group, with around 126 stores)<sup>3</sup>. This growth has been accompanied by a boom of smaller independent cafes that offer specialty coffee products for middle and upper-class consumers in cities like Jakarta, Bandung and Surabaya, which also actively source high quality coffee from Indonesian producers.

As such, Indonesia's engagement with the GPN for coffee is complex, and the strategies of global lead firms in the coffee sector are similar to, but also diverge from, the strategies of national lead firms. In an attempt to maximise their cost-capability ratios, global lead firms have largely retained branding and coffee roasting as an intra-firm activity (and many have moved into retail), while outsourcing supply chain management of green beans to trading firms. The increasing skill levels required by these traders (especially in the enactment of traceability schemes to address ethical and sustainability concerns) has resulted in increased nodal concentration amongst commodity traders operating under the tight control of roaster lead firms. The international trade in roasted coffee remains negligible, at 0.3% of the total coffee trade during 2012-2016 (ICO 2018a), and the current opportunities for Indonesian firms to engage in functional upgrading and export roasted coffee is correspondingly limited. Within Indonesia, national lead firms and many smaller

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<sup>3</sup> <http://www.starbucks.co.id/about-us/our-heritage/starbucks-in-indonesia>;  
<http://coffeebean.co.id/sites/about/4/our-story>; <http://excelso-coffee.com/about-us/>;  
<https://www.jcodonuts.com/id/location> (all accessed May 10, 2018)

specialty roasters tend to manage their own supply chains rather than depend on large commodity traders, although this may change if these firms increasingly depend on imported coffee.

Global coffee consumption reached 9 million tons in 2016<sup>4</sup>, with the top three consuming regions being EU, the US and Brazil, while Japan, Taiwan and the US had the largest per capita consumption of ready-to-drink coffee in 2016. The Asia-Pacific region was estimated to be responsible for over 80% of global sales of this coffee type (Euromonitor 2017). In terms of instant coffee, the last decade has witnessed a steady growth of consumption, reaching 21.5 million bags of coffee in 2016 (valued at \$ 9.9 billion), and growing at a CAGR of 3.6% between 2009 and 2016 (PRNewswire 2017). The rise in demand for soluble coffee is particularly notable in Eastern Europe, with a particular affinity to 3-in-1 instant coffee.

The soluble coffee sub-sector (using moderately sophisticated technologies such as spray-dried, freeze-dried, agglomerate and frozen extractions) is undergoing a different development trajectory to the roast and ground sub-sector. The ICO (2013) reported on the significant growth in soluble coffee exports by traditional coffee-producing countries in recent decades (7.5% per annum growth by volume during 2000-2011), and how the share of soluble coffee exports in total coffee exports from producing countries had increased from 4.9% in 1999 to 10% in 2011. While global lead firms, like Nestle, remain committed to the intra-firm manufacturing of soluble coffee, the broader industry has seen the emergence of segmentation and the outsourcing of soluble coffee manufacturing. This appears to be especially true for emerging economies where growth in coffee consumption is most rapid and where Indonesian Robusta has solid market demand. Lead firms operating in these markets are outsourcing intermediate processing stages of the value chain to international commodity traders, while concentrating on their core activities of branding and marketing. Olam, for example, has invested in a new manufacturing plant in Vietnam<sup>5</sup>, and Ecom forming ECOM formed Atlantic Coffee Solutions (ACS) in 2013<sup>6</sup>. These developments have provided important upgrading opportunities for Indonesia, as indicated by the increased share of soluble exports presented in the following section. PT. Aneka Coffee Industry (ACI), for example,

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<sup>4</sup> <http://www.ico.org/prices/new-consumption-table.pdf>

<sup>5</sup> <http://olamgroup.com/products-services/confectionery-beverage-ingredients/coffee/instant-coffee/>

<sup>6</sup> <http://www.atlanticcoffeesolutions.com/about/history/>

was established in 1995 as a joint venture company between a subsidiary of the Prasadha Group, Itochu Corporation, and UCC Ueshima Coffee Co (a genuine global lead firm). Their Surabaya-based facility has an annual production capacity of 3,600 tons of instant coffee and 2,400 tons of ground coffee, with exports including liquid concentrates and spray-dried coffee (often in 30kg bulk bags)<sup>7</sup>. This segment of the industry works on low margins and cost reduction is key to financial viability.

### **Lead firm strategies in the cocoa sector**

Chocolate confectionery is a global industry with estimated global revenue of US\$117 billion in 2014, and the dominant product within a larger US\$200 billion total confectionery market (KPMG 2014). Global lead firms in cocoa–chocolate value chains (e.g. Mondelez, Nestlé, Hersheys and Mars) are geographically concentrated in Europe and North America, but with a growing market in Asia, Latin America and the Middle East (KPMG 2014; UNComtrade 2016). Although these lead firms are still headquartered in the United States or Europe, branding and manufacturing has become an increasingly global operation. For instance, Nestlé, Mars, and Mondelez established chocolate manufacturing plants in China during the 1990s, with Hershey following in 2007 (Allen, 2010), with Malaysia the key location for such investments in Southeast Asia.

In Indonesia, these global lead firms are competing for market share with Singapore-based Delfi (previously named Petra Foods), a strong regional lead firm that has been operating in Indonesia since the 1950s and currently holds a 47% share of the Indonesian market (Euromonitor 2015b). During the period 2010-2014, the market for chocolate confectionary was shared between Silver Queen (Delfi, 24.9%), Beng-beng (Mayora, 9.4%), Kinder Joy (Ferrero, 8%), Delfi (Delfi, 6.4%), Cadbury (Mondelez, 6.4%), and Gery Chocolatos (Garudafoods, 6.3%) (Euromonitor 2015b). Delfi has played an important role in the regional production network for cocoa-chocolate where it was also a distributor of global lead firm brands in Indonesia, Singapore, and Malaysia, and previously a major player in intermediate cocoa ingredients, linking up with lead firms like Nestle, Armajaro and Barry Callebaut, and developing skills and knowledge through processes of buyer-driven upgrading.

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<sup>7</sup> [http://www.anekacoffee.com/spray\\_dried.shtml](http://www.anekacoffee.com/spray_dried.shtml)

The cocoa-chocolate network is distinct from roasted coffee in that it involves an important intermediate industrial processing activity - cocoa grinding. Firms involved in this activity can have almost equivalent influence to branded confectionary manufacturers, such that Fold (2002) described the chain as presenting a case of bipolar chain governance. In 2016, there were estimated to be 33 cocoa processing and downstream industries actively operating in Indonesia<sup>8</sup> (defined as both cocoa-grinding and chocolate-manufacturing companies). The grinding firms are led by US-based Cargill, Swiss-based Barry Callebaut, Singapore-based Olam, and another Swiss company, Ecom Agroindustrial, with an estimated 73% collective share of global grindings in 2014 (Fountain and Hütz-Adams 2015).

The relative lack of advanced industrial capability required for cocoa grinding provides opportunities for cocoa origin countries to pursue industrial policies that encourage domestic value capture. The proportion of total cocoa grindings taking place in *origin* countries has increased from 35 percent of world grindings in 2002–2003 to 44 percent in 2015–2016 (ICCO 2012, 2017). Branded manufacturers have recently required that these trader–grinders assume increased responsibility for supply chain management and farmer engagement, which has both emerged as a key capability constraint and encouraged the origin grinding trend. These outsourcing strategies of global lead firms in the chocolate sector, then, have presented opportunities for industrial upgrading towards intermediate cocoa processing in countries such as Indonesia.

The position of multi-national corporations as the lead actors in the global cocoa industry is somewhat restricted in Indonesia, at least in terms of their ability to directly shape state policy (extra-firm bargaining). This is due to the fact that effective government lobbying is mainly undertaken by the domestic associations. Multinational corporations in the cocoa industry were once members of ASKINDO, although they do not currently participate in either AIKI or APIKCI. This also influences these corporations to act independently through different private initiatives, such as the Cocoa Sustainability Partnership (established in 2006) as a multi-stakeholder platform.

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<sup>8</sup> <http://hilirisasi.com/2016/09/25/30an-perusahaan-hilir-kakao-indonesia/>

## **INDONESIA’S POSITION WITH GLOBAL PRODUCTION NETWORKS**

In 2017, the manufacturing sector (excluding oil and gas) contributed around 17% of total GDP, and the food, beverage and tobacco sector was the main contributor, reaching a 39% share. The sector has also demonstrated the highest annual growth (11%) in comparison with other manufacturing sectors over the past five years<sup>9</sup>. The Indonesian government is committed to increasing investment in manufacturing through various incentives, such as tax holidays and tariff exemptions, as stipulated in various regulations (KEMENPERIN 2015a; see also Patunru and Rahardja 2015). Tax holiday incentives, for instance, are given to certain manufacturing industries that use renewable resources, such as the cocoa processing industry. The government, through its Minister of Finance’s decree, also offers a tariff exemption for the importation of capital goods that comply with conditions such as those not produced domestically, or involving sophisticated machineries with high license-technology content.

However, despite the promising growth of the Indonesian economy and the food processing industry in particular, Indonesia has been poorly integrated with international trade networks, as compared to other Southeast Asian countries such as Malaysia, Thailand and Singapore. Neilson et al. (2017) note that Indonesia’s participation in the global value chains for the food industry is marginal, contributing around 1% of total global food exports, and its integration (as indicated by the degree of foreign content in its food exports) is low compared to Malaysia, Australia and Taiwan. One reason is that Indonesian trade policy has been mostly protectionist. Patunru and Rahardja (2015) note that ‘the anti-foreign attitude also helps explain why Indonesia has been less enthusiastic about the global production network’. This sentiment may also contribute to a politically problematic attempt to create a coherent policy framework in the food processing sector, where to be internationally competitive increasingly requires global integration.

### **The Indonesian Coffee Sector**

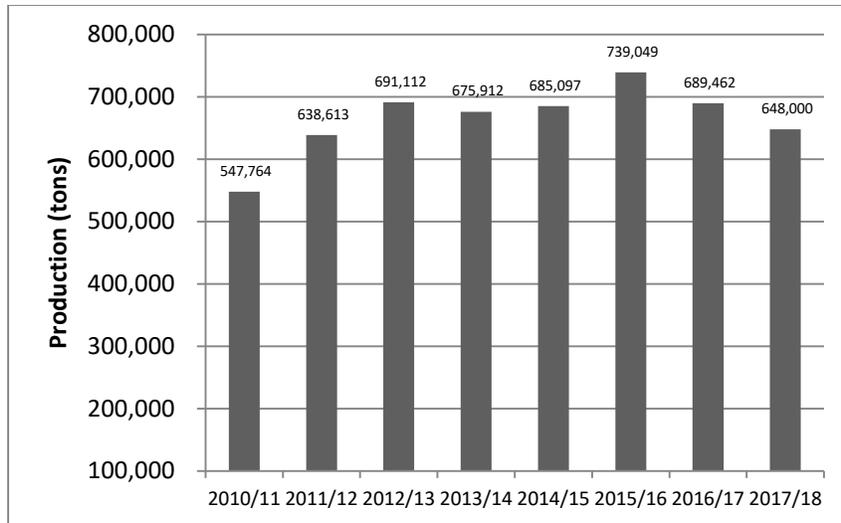
Indonesian production is dominated by the lower quality Robusta variety, although there has also been a recent upsurge of Arabica production in many regions, especially on Java. Data provided by DITJENBUN (2016a), suggest that 73% of coffee produced in Indonesia is Robusta, lower than

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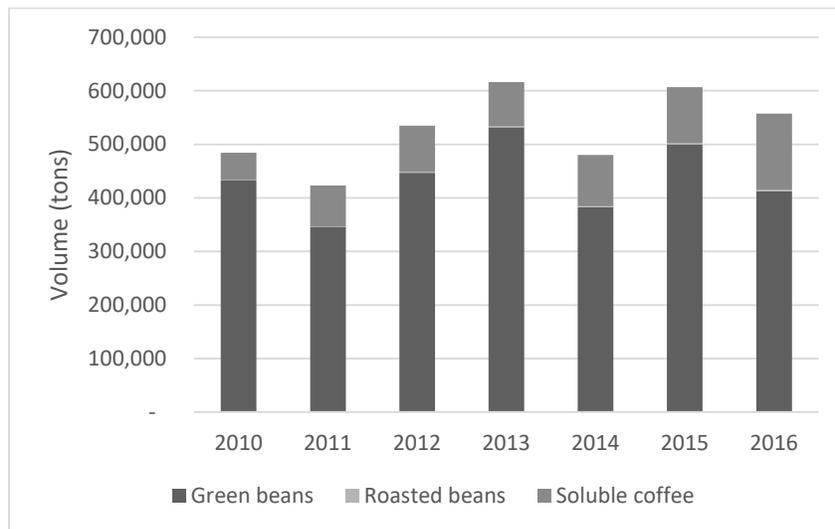
<sup>9</sup> <http://www.bi.go.id/sdds/>

three decades ago where Robusta accounted for 85%. Robusta coffee has become what the industry refers to as ‘bulk coffee’, is a key input for the soluble coffee sector, tends to dominate in new consuming countries, and shapes the dominant structure of the national coffee industry. Around 80% of Robusta coffee is produced in the so-called ‘coffee triangle’ – Lampung, South Sumatra and Bengkulu. At the farm level, 96% of coffee is produced by smallholders, whereas only 4% is produced by state-owned and private estates (DITJENBUN 2016a).

Indonesia is currently the world’s fourth largest producer of coffee (after Brazil, Vietnam, and Colombia), with an estimated production of around 640,000 tons in 2016 (ICO 2018b; see Figure 1). Despite strong growth in domestic consumption, around three-quarters of national production is still exported in various forms, but mainly as green beans (about 70% of the total export volume) (DITJENBUN 2016a; UNComtrade 2018). In 2015, Indonesia was recorded to have exported almost 500,000 tons of green beans, still mainly to traditional coffee consumers like the United States (13%), Germany (9%), Italy (8%) and Japan (8%), but also with key markets in Malaysia, Thailand, Egypt, Russia and India (DITJENBUN 2016a). The reason for the export of green beans is that the quality of coffee at the downstream level of the value chain (roasted and ground coffee) tends to deteriorate faster compared to green beans, and so requires special handling. Consequently, attempts at value adding by exporting roasted products present significant logistical challenges and must compete with the large marketing budgets of global lead firms. Shelf-life and quality, however, can be maintained at the very end of the quality spectrum as soluble coffee (including coffee extracts, essences and concentrates). 29% of Indonesia’s total export volume in 2016 was made up of soluble coffee, whereas ground and roasted coffee accounted for less than 1% (UNComtrade 2018; see Figure 2).

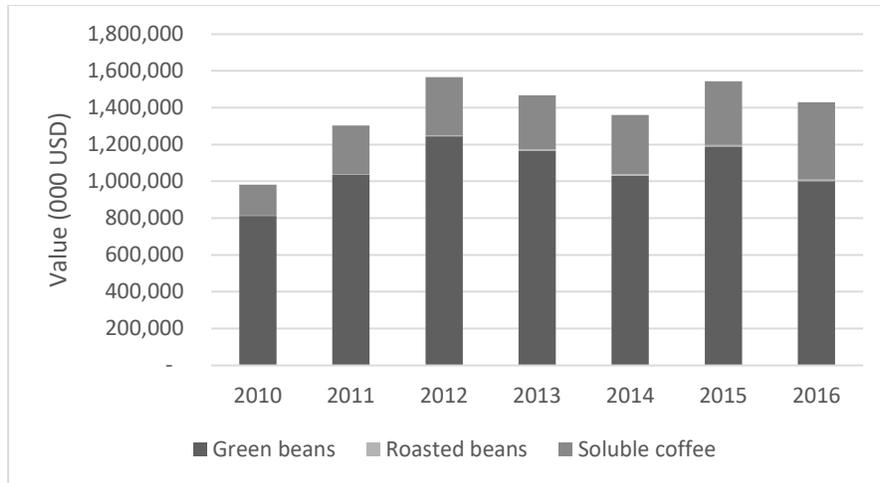


**Figure 1** Indonesian production of coffee green beans (Source: ICO 2018b)



**Figure 2** Indonesian export (volume) of various forms of coffee (Source: UNComtrade 2018)

(Note: Green coffee HS Codes 90111 and 90112, Roasted coffee HS Codes 90121 and 90122, Soluble coffee HS Codes 210111 and 210112)



**Figure 3** Indonesian exports (value) of various forms of coffee (Source: UNComtrade 2018)

(Note: Green coffee HS Codes 90111 and 90112, Roasted coffee HS Codes 90121 and 90122, Soluble coffee HS Codes 210111 and 210112)

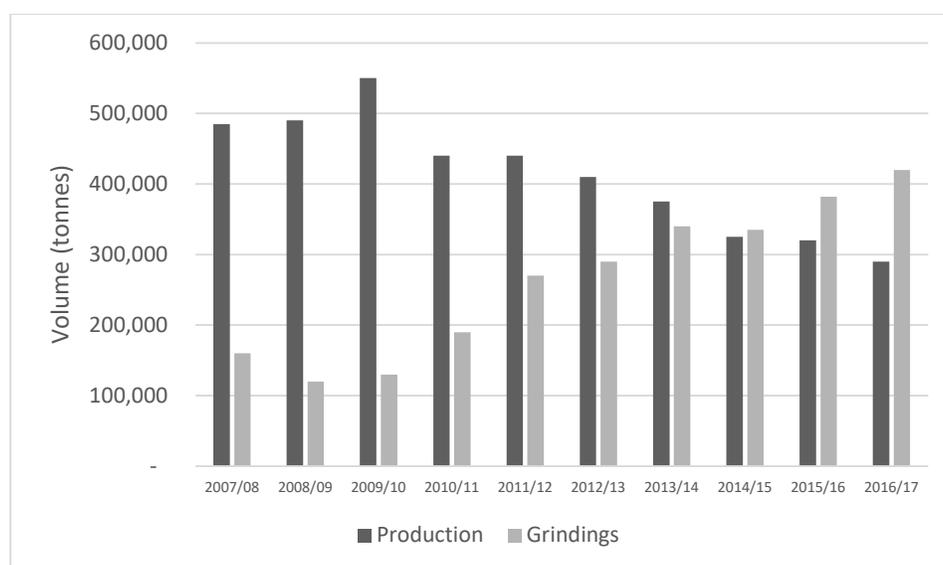
Leading coffee industry actors in Indonesia have established various institutions that represent the industry’s interests, and actively engage in extra-firm bargaining with the state. One central institution is the Association of Indonesian Coffee Exporters (AEKI), established in 1979, as a private sector industry association that works closely with the Ministry of Trade (administering ICA quotas in the pre-1989 era). Other organizations include: the Indonesian Coffee Exporters Association (GAEKI), established in 2011 by disaffected AEKI members in East Java; the Specialty Coffee Association of Indonesia (SCAI), established in 2007 to promote and improve the quality of Arabica coffee grown in Indonesia; and the Sustainable Coffee Platform for Indonesian (SCOPI), established in 2015, with both international donor and industry support. In 2018, an Indonesian Coffee Board was established, apparently in association with the Ministry of Agriculture, but without significant budgetary support at this stage.

### **The Indonesian Cocoa-Chocolate Sector**

According to the National Statistical Bureau, national cocoa production has increased from negligible volumes in 1967 up to 600,000 tonnes in 2016<sup>10</sup> (see Figure 4 for production estimates made by the International Cocoa Organisation). Similar to coffee, almost 98% of the cocoa beans

<sup>10</sup> Many observers, including the Indonesian Association of Cocoa Industry (AIKI) and the International Cocoa Organisation (ICCO), however, claim that this is a considerable overestimate. The ICCO (Source: Quarterly Bulletin of Cocoa Statistics, 2016) estimates that Indonesia only produced 320,000 tons of cocoa beans in 2016.

are produced by smallholder farmers whose current levels productivity are considered well below potential yields. Since the 1980s, Sulawesi has become the centre for cocoa development due to its topography, migrant labour, available forest resources, and knowledge networks linked to an earlier cocoa boom in from Malaysia (Ruf & Ehret 1996). However, Neilson (2007) described how various plant productivity issues, especially high incidences of pests and disease, were seriously threatening the long-term sustainability of cocoa supply from around 2000, prompting various interventions from both the industry and the government. Nevertheless, Indonesian cocoa production has continued to decline over the last decade, whilst grindings have increased to a point where they are import dependent (Figure 4).

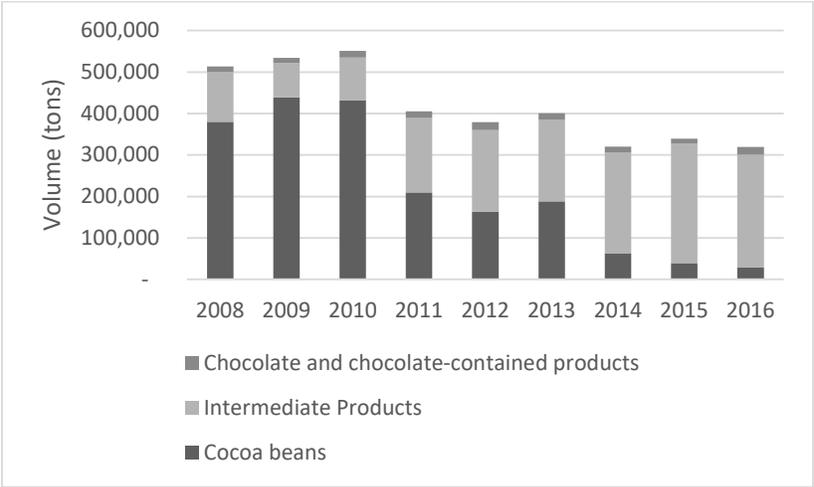


**Figure 4** Indonesian cocoa beans productions and grindings (Source: ICCO Annual Report, 2017)

Indonesia’s cocoa beans are valued primarily for their butter content, which is a result of the fact that Indonesian beans, unlike African competitors where cocoa powder is also highly valued, are generally unfermented. Fermentation, then, can be an important process to ensure higher quality cocoa powder and paste further down the value chain, such that downstream actors have an interest in upstream coordination in relation to both quantity and quality, while Indonesian cocoa farmers generally consider fermentation to be costly and financially unviable.

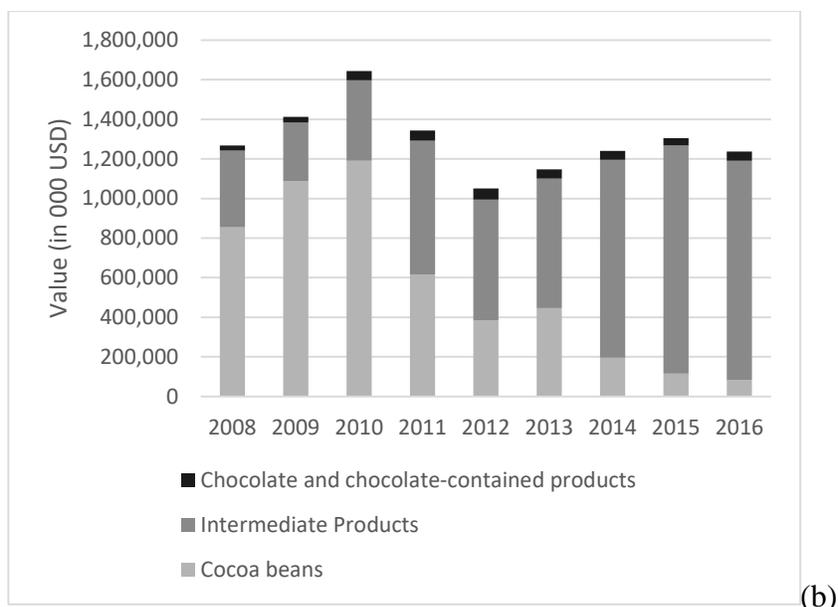
Based on data provided by the Directorate General of Customs and Excise, during the years 2002 to 2015, Indonesian cocoa beans were mainly exported to Malaysia (60%) and Singapore (12%),

although this has fluctuated annually and traditional cocoa-consuming countries like Germany, USA, the Netherlands are still important (even if declining over time), while new markets are emerging in places like Thailand and China. DITJENBUN (2016b) shows that the peak of cocoa bean exports occurred in 2006 when 600,000 tons of cocoa beans were exported prior to subsequent decline (UNComtrade data 2018, see also Figure 5). Cocoa derivative products can be divided into: intermediate products which include cocoa butter, cocoa paste and cocoa powder; and chocolate and chocolate-contained products, such as confectionary and food preparations. The largest exported derivative products are cocoa butter, fat and oil, which amounted to 114,000 tons in 2016 (UNComtrade 2018; see Figure 5 and Figure 6 in terms of value). The main export destinations for Indonesia’s cocoa butter, in 2016, were the USA (33,000 tons) and Germany (15,000 tons).



**Figure 5** Indonesian exports (in volume) of cocoa products. Source: UNComtrade Data

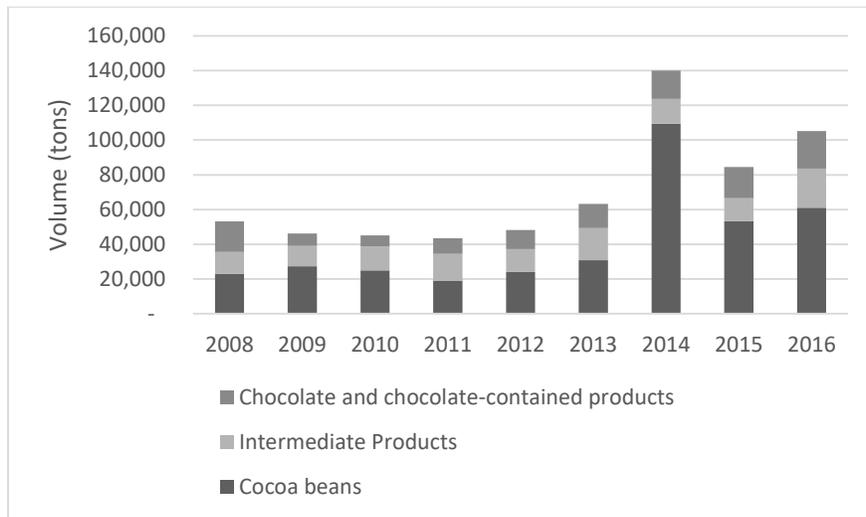
(Note: Cocoa beans HS Code 1801xxx; Intermediate products HS Codes 1803xxx, 1804xxx, and 1805xxx; Chocolate and chocolate-contained products HS Code 1806xxx)



**Figure 6** Indonesian export (in value) of cocoa products. Source: UNComtrade Data

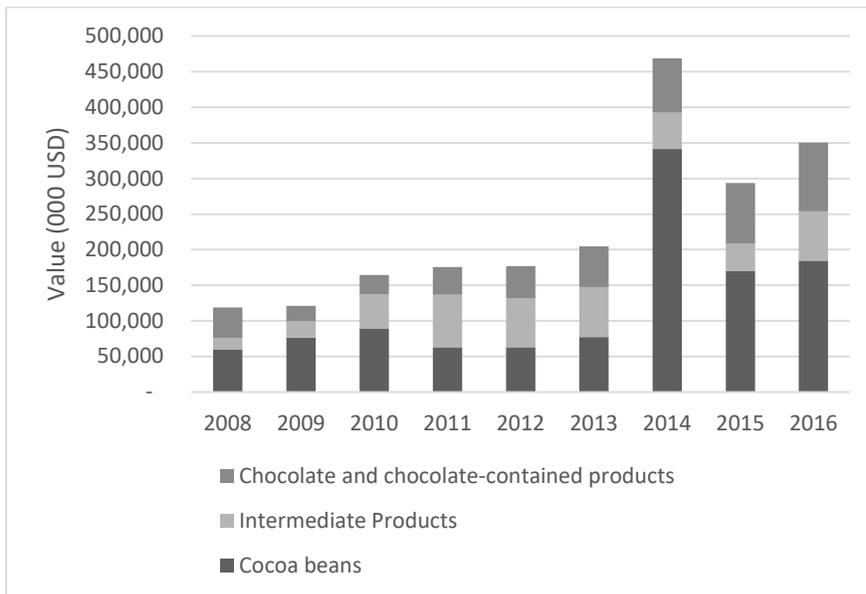
(Note: Cocoa beans HS Code 1801xxx; Intermediate products HS Codes 1803xxx, 1804xxx, and 1805xxx; Chocolate and chocolate-contained products HS Code 1806xxx)

Despite its status as a cocoa producing country, Indonesia also imports cocoa beans and other cocoa derivatives, and the volume and value of these imports has increased in recent years (Figures 7 and 8). The domestic chocolate manufacturing industry also requires a steady supply of cocoa beans from other countries due to inherent quality characteristics. In 2015, most of the imported cocoa beans came from Ivory Coast (47%), but this decreased in 2016 to 11% as import share from Ecuador increased from 10% in 2015 to 18% in 2016 (Source: UNComtrade 2018). Aside from cocoa beans, Indonesia is also a significant importer of chocolate confectionary and food preparation containing chocolate from countries such as Malaysia (28% of imports by value), Singapore (21%) and China (17%) (Figure 8, UNComtrade 2018). Despite significant chocolate manufacturing across Southeast Asia, Indonesia has been unable to successfully compete internationally in the supply of chocolate confectionary due a generally unfavourable investment climate and trade regime. High-flavour cocoa powder is another key import product.



**Figure 7** Indonesian imports (in volume) of cocoa and its derivatives. Source: UNComtrade Data

(Note: Cocoa beans HS Code 1801xxx; Intermediate products HS Codes 1803xxx, 1804xxx, and 1805xxx; Chocolate and chocolate-contained products HS Code 1806xxx)



**Figure 8** Indonesian imports (in value) of cocoa and its derivatives. Source: UNComtrade Data

(Note: Cocoa beans HS Code 1801xxx; Intermediate products HS Codes 1803xxx, 1804xxx, and 1805xxx; Chocolate and chocolate-contained products HS Code 1806xxx)

Indonesia's cocoa industry is influenced by the roles of Associations. In the 1990s, all actors in the cocoa industry were included in the Indonesian Cocoa Association (ASKINDO), which included raw bean exporters, cocoa farmers, raw bean exporters, cocoa processing industry and the chocolate industry. Because the largest retribution came from the exporters (at the amount of

Rp50/kg of export volume), ASKINDO had a stronger inclination to push for the export of raw cocoa beans. This, however, resulted in intense competition for raw beans with cocoa processors and chocolate manufacturers, and eventually a split into function-based associations; the farmers' association (APKAI), cocoa processors (AIKI), and chocolate industry (APIKCI). In 2007, the government attempted to develop an industry-wide forum that encompassed the four associations, along with Indonesia's Coffee and Cocoa Research Institute (ICCRI), by establishing an Indonesian Cocoa Board, which it was hoped would accommodate and present the various industry interests.

## **REASSESSING *HILIRISASI* OUTCOMES THROUGH GLOBAL PRODUCTION NETWORKS**

The following section discusses processes of *hilirisasi* in relation to some of the strategies employed by the lead firms in the two sectors resulting in particular industrialisation outcomes. *Hilirisasi* policy in this sense has a two-way relationship with lead firm strategies. Firstly, it creates a situation whereby lead firm strategies are reconfigured (i.e. policy as a trigger for lead firm strategies). Secondly, *hilirisasi* policies can also benefit from, or be hampered by, existing lead firm strategies in respect to broader market imperatives, cost minimisation or risk management (i.e. strategies such as outsourcing as a context in which industrialisation opportunities emerge).

### **Strategic coupling, *hilirisasi* and lead firm strategies: learning from the cocoa sector**

Among the set of government policies to promote *hilirisasi*, the export tariff barrier for cocoa, implemented in 2010 under the Minister of Finance's Regulation No.67/2010, is considered by many state-based actors to be a success story<sup>11</sup>. AIKI, spearheaded by a large domestic processor BT Cocoa, was actively lobbying for implementation of this tariff as early as 2002. This policy involves a progressive export tariff in accordance with international cocoa prices, in the hope that it would create a disincentive for raw material exports and a shift into processing intermediate forms (cocoa paste, liquor and powder) prior to export. Following the tariff, there has been a decrease in bean exports, with a simultaneous increase in exports of processed cocoa products and new investment (primarily foreign) in the cocoa grinding (Figures 5). Interestingly, however, the total value of all cocoa-chocolate products has not significantly changed (Figure 6). The apparent

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<sup>11</sup> <https://ekonomi.kompas.com/read/2012/05/07/14513661/Bea.Keluar.Efektif.Dorong.Hilirisasi.Kakao>

success of this policy, in terms of shifting the composition of exports has further encouraged the government to consider replicating the policy towards other commodities such as coffee<sup>12</sup>. Such an application, however, requires greater consideration of the industry-specific imperatives that determine lead firm practices and industrial outcomes in different GPNs.

The Cocoa Board (personal interview, 2017) reported that, as a direct response to the export tariff policy, several lead firms reorganised their internal structure through strategies such as:

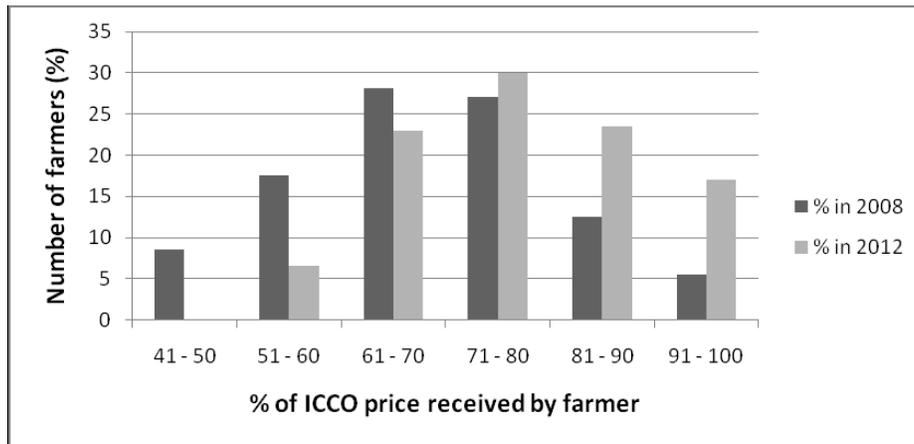
- Cargill opening a new cocoa processing facility in Gresik, East Java,
- Barry Callebaut acquiring a cocoa processing factory previously owned by General Food Industry (Ceres) in Bandung, collaborating with Garudafood to open factories, and opening a new facility in Makassar,
- Guangchong, a Singapore-based cocoa grinding firm, opening a new cocoa processing unit in Batam,
- Olam buying BT Cocoa in Tangerang, Banten, and
- A domestic investment made by Kalla Group to buy a cocoa processing factory from the local government of Southeast Sulawesi.

The impact of the tax on farmers and farm production has been widely debated. In a paper prepared for the Indonesian Ministry of Trade prior to the introduction of the tax, Marks et al. (2005) argued that an export tax would significantly lower farm-gate prices in Sulawesi. Similar effects were predicted by Arsyad (2007). However, empirical evidence of the farm-gate effects following the introduction of the tax is far less conclusive. Neilson et al. (2014) reported on a field survey of 200 farmers across eight sub-districts in Polewali-Mandar district two years either side of the policy change (in 2008 and 2012), finding that, as a percentage of prevailing international prices, farm-gate prices had actually increased following the tax (Figure 9). Similar empirical findings were reported in Sulawesi by Rifin (2012). This apparent farm-gate price increase was associated with increased upstream activity by cocoa exporters and processors, including the introduction of sustainability programs to farmers, which consequently diminished the profits of middle-men over the same period. The policy appears to have been associated with a supply chain restructuring response from lead firms in the scramble for raw materials, which indirectly (and unexpectedly)

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<sup>12</sup><https://katadata.co.id/berita/2018/02/23/kemenperin-dorong-penerapan-bea-keluar-flat-15-untuk-produk-agro>

benefitted Sulawesi cocoa farmers. This situation demonstrates that the tariff policy, coupled with lead firm strategies, influenced regional cocoa development at the upstream level. The positive (or at least negligible negative) impact on farm-gate prices, then, seems an unlikely cause of the constant decline in farm-level cocoa production that has coincided with the tax.



**Figure 9.** Farm-gate price as a percentage of ICCO world price

Source: Neilson et al. (2014)

Direct engagement by lead firms with farmer development activities in Indonesia has been driven by broader concerns about global cocoa supply risks and the need to demonstrate ethical sourcing to discerning consumers. This already emergent mode of interfirm control exerted by lead firms, who had been engaged in various attempts to stimulate cocoa production and improve quality since at least 2005, was synergistically triggered by the export tariff. Global lead firms, such as Mars, Mondelez, and Nestle, are leading these initiatives. Mars, for example, has been a key driver behind the establishment of the Cocoa Sustainability Partnership, and has built their own network of Cocoa Development Centres, Cocoa Village Clinics and a Cocoa Academy, to deliver services to farmers. Nestle has also supported cocoa farmers, mainly indirectly through grinding firms, including BT Cocoa in the past, and through the PisAgro initiative.

Based on our interview with AIKI, the export tariff policy has not solved the broader challenges affecting the chocolate processing sector in Indonesia, due to a confluence of factors. The first relates to product quality. The unfermented nature of Indonesian cocoa means that the quality of cocoa powder is generally poor, and so imports of this intermediate product for the food processing

sector (primarily from Singapore and Malaysia) remain high despite increased domestic grindings<sup>13</sup>. The second factor relates to overcapacity. Government waivers on import tariffs for cocoa processing machinery contributed to an increase in grinding capacity up to 800,000 tons/year, while ICCO data (2018b) suggests that Indonesia's total production was only 382,000 tons/year in 2016. Despite the success of the tariff in encouraging investment in cocoa grinding, serious constraints remain in the Indonesian food processing and chocolate manufacturing sectors, which have resulted in limited growth further downstream. It should also be noted that the policy has resulted in a situation where the Indonesian cocoa grinding sector is increasingly dominated by the big three global firms - Olam, Cargill and Barry Callebaut.

While *hilirisasi*, particularly the export tariff policy, stimulated various responses from the lead actors in terms of the strategies they employed (and the type of extra-firm bargaining national firms engaged in through their associations), we also contend that global lead firms were already employing outsourcing strategies prior to these policy changes. The degree to which particular national or regional policy settings and institutions are synergistic with the strategies of lead firms is referred to as 'strategic coupling' (Yeung 2009). Explaining industrial outcomes need to be understood in this broader GPN context rather than as a direct outcome of policy alone. In the Indonesian cocoa sector, the policy complemented the existing lead firm strategies towards the outsourcing of intermediate products, origin grindings and enhanced supply chain traceability and farmer development, all of which contributed to new investments in cocoa grinding facilities (but not chocolate manufacturing). This has important implications for the application of similar policies to other commodity sectors.

Despite suggestions that similar export restrictions could be applied across various agri-commodities, including coffee, in an attempt to encourage *hilirisasi*, such a policy appears to have limited support from within the coffee industry. AEKI, with interests akin to ASKINDO, is concerned that without an increase in upstream coffee production, domestic competition for raw materials would become problematically intense and the policy would be ineffective. International demand is generally stronger for green beans partly because of the more limited shelf-life of

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<sup>13</sup> From the Directorate General of Plantation, the import volume of cocoa powder has not been declining as compared to other cocoa derivatives (11,000 tons in total), and it contributes to 78% of the total import volume for cocoa intermediate products

roasted coffee (but this is less important for soluble coffee). Another constraint is that lead firms such as Starbucks and Nestle seek to hold on to proprietary knowledge in roasting and blending coffee to create their own signature taste. There is no equivalent to the intermediate cocoa products in the roasted coffee value chain, thus presenting significant structural challenges. At present, lead firm strategies, driven by cost-capability ratios and market imperatives, are not strongly synergistic with a trend towards supporting further coffee roasting in producing countries like Indonesia.

Over the last ten years, the growth of the Indonesian coffee industry has, however, been characterized by two important developments: the development of soluble processing technology on the one hand, and the growth of small to medium scale industry in the form of specialty coffee shops on the other. The development of packaging and processing technology in the coffee manufacturing industry, particularly that of freeze drying and spray drying, has paved the way for the increase in domestic consumption. In contrast to the roasted coffee sub-sector, there do appear to be opportunities for soluble coffee processing and export in Indonesian, as this activity constitutes a somewhat equivalent intermediate function to cocoa grinding.

The highest added value for instant coffee is still captured by the downstream branded coffee manufacturers, whose capacity to control quality conventions results in unequal power relations with upstream supplier firms and farmers. As a result, the structure of the coffee processing industry is dominated by only a handful of large-scale actors. Within Indonesia, Santos Jaya Abadi is a lead firm with the highest market share for instant coffee, mainly due to its ownership of advanced processing technology and marketing abilities, and is able to successfully compete with global lead firms like Nestle. However, at the same time, Indonesia has increased exports of bulk soluble coffee as an intermediate product that is subsequently rebranded in other countries. Furthermore, Table 2 suggests that the key markets for this intermediate product are not the traditional coffee consuming countries in North America and Western Europe, but rather emerging markets in Asia and the Middle East. None of these countries possess a significant coffee production base of their own, suggesting that Indonesia's comparative advantage in this industrial activity may also be linked to its access to raw material supply.

**Table 2.** Value of coffee extracts from Indonesia to key destinations – annual average (2013-2017) (HS Code 210111) Data source: (UNCOMTRADE 2018)

	<b>Country</b>	<b>Value of exports (USD)</b>
1	Philippines	245,846,615
2	Malaysia	33,208,866
3	China (ex. Hong Kong)	12,240,377
4	UAE	11,912,851
5	Singapore	9,671,752
6	Iran	6,802,452
7	Lebanon	5,924,348
8	Russia	4,221,964
9	Japan	3,198,676
10	Hong Kong	3,154,406
	Other	21,622,228
	<b>World (total)</b>	<b>357,804,534</b>

In the upstream part of the higher-valued Arabica coffee value chain, which supplies important specialty coffee markets, lead firm engagement with producers is widespread. Lead firms such as Starbucks perform a critical role in this regard, partly through direct engagement as with their North Sumatra farmer training centre, but more commonly through inter-firm partnerships with key suppliers and the enforcement of CAFÉ Practices, their internal sourcing program. Global commodity traders, such as Ecom, are often best placed to meet stringent traceability requirements, but a number of Indonesian firms have also assumed this supply role, including Sari Makmur, one of Indonesia’s largest coffee exporters, which operates in West Java, North Sumatra, and elsewhere. While opportunities for functional upgrading and downstream industrialisation for global markets appear to be limited in the specialty sub-sector, suppliers can move into preferred supplier relationships and gain access to higher-priced markets as a result.

### **The challenges of producer-driven *Hilirisasi***

The preceding discussion has emphasised how successful outcomes for *hilirisasi*, and other forms of quality upgrading, frequently occur when there is a strong aspect of strategic coupling between the strategies of lead firms and the regional and national settings within Indonesia. In contrast, attempts to drive *hilirisasi* through policy without due consideration of lead firm strategies offers far less sanguine prospects, and Indonesian policy-making in this regard presents a number of less successful, producer-driven initiatives.

In an effort to support downstream value-adding of cocoa in South Sulawesi, the Industry Minister collaborated with the Government of South Sulawesi in 2009 to establish a ‘cocoa industrial cluster’ through a public investment in a state-owned chocolate manufacturing factory (ie. not just a grinding facility) in the newly-established Gowa Industrial Estate. However, nearly 10 years after the factory was built, at an estimated cost of 20 billion IDR to the provincial government, the facility has yet to commence operation and is unlikely to do so in the future<sup>14</sup>. The clear failure in this case has been variously attributed to poor planning, corruption, or the wrong location (according to some it should have been in a cocoa-growing district, while others believe it should have been in the established Kima Industrial Estate). However, it seems to us that the fundamental cause of failure can be more accurately interpreted as due to the lack of strategic coupling with lead firm interests, none of whom were interested in the key product and so the factory lacked intra-chain access to technology know-how and markets.

Similarly, a nationwide government initiative to boost cocoa farm production (known as Gernas Kakao) was launched in 2008, with the intention to support improvements to 450,000 hectares of cocoa smallholdings and to increase production for export and industrial supply (Direktorat Jenderal Perkebunan, 2012). The falling levels of Indonesian cocoa production (Figure 4) since the Rp 3 trillion program was implemented suggest a systemic failure of this production-oriented program to meet its own stated ambitions<sup>15</sup>. Again, the public investment missed an opportunity to strategically couple with initiatives already being pursued by lead firms to increase agricultural production in Indonesia through various sustainability and farmer development initiatives, and instead insisted on a state-based program delivery model.

Other recent producer-driven *Hilirisasi* programs in Indonesia include various initiatives to establish value-adding at the farm-level through the distribution of cocoa and coffee processing machineries. The general failure of such initiatives to remain viable in the medium term is due to technological constraints (in cocoa processing for example), inadequate economies of scale, lack

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<sup>14</sup> <http://radarsulsel.com/read/2017/09/27/25829/habiskan-20-m-pabrik-kakao-di-gowa-hanya-jadi-monumen-saja> (February 2018, accessed 21 August 2018)

<sup>15</sup> <https://industri.kontan.co.id/news/gernas-kakao-tak-wariskan-lonjakan-produksi> (February 2018, accessed 21 August 2018)

of market knowledge, poor infrastructure and the lack of synergy with existing buyer strategies. Small urban-based businesses across Indonesia have tapped into specialty markets for both coffee and chocolate, the latter including *Chocodot* (Garut, West Java), *Cokelat Monggo* (Yogyakarta), *Primo Chocolate* (Bali), and *Kampung Cokelat* (Blitar, East Java), although volumes remain insignificant compared to lead firm activities. Even at smaller scales, however, it is relationships between urban-based specialty roasters in Indonesia and supply regions that appear to offer the most likely prospects for future upgrading, rather than attempts to supply farmer organisations with processing facilities. Linkages between producers and local lead firms can still be advantageous for producers, who are further saved the considerable cost of marketing and product branding.

## CONCLUSION

This article has analysed the implementation of various forms of *hilirisasi* policies in the Indonesian coffee and cocoa industries. We have assessed the outcomes of these policies in the context of prevailing lead firm strategies in broader global production networks and have suggested that the success or failure of this policy framework depends primarily on the intersection of these policies within regional institutional settings and lead firm strategies. The opportunities for resource-based industrialisation are still determined by the competitiveness of supplier firms in terms of their ability to deliver quality products in a timely manner to lead firms. The structure of the global production network and its specific technical requirements are critical here. Opportunities seem most likely to emerge when the network can be easily segmented into discrete stages of production with storable products (such as bulk soluble coffee and the intermediate cocoa products), and when the various competitive dynamics on lead firms (including high cost-capability ratios and higher levels of financialisation) are incentivising the outsourcing of these industrial activities. At the same time, lead firms tend to retain core activities such as branded final manufacturing and marketing, where opportunities for upgrading of supplier firms are currently more limited and costly.

While national lead firm coffee roasters in Indonesia have been advantaged by the large domestic market, where they can readily sell final consumer products, they have been less successful in penetrating export markets (with the exception of relatively small volumes currently sold to

Malaysia, Philippines and Singapore). The opportunities of regional integration with other Southeast Asian economies are considerable, and yet the successful penetration of Indonesian consumer products would probably require a more liberal attitude towards the import of raw and intermediate materials. This is most evident in the case of cocoa powder and sugar imports for chocolate manufacturing and other processed foods, and for raw coffee for blending purposes. Developing export competitiveness through intermediate processing appears to be a highly prospective strategy prior to targeting final products in national and regional markets, and before developing the capacity to meet the stringent requirements of the Northern markets. This requires a staged, long-term approach, rather than attempting to make quick short-term wins on high-profile products.

The export tariff for cocoa can be seen as a partial success story, but this is as much to do with the internal dynamics of the GPN itself as with the actual policy. Although the implementation of the policy resulted in a significant decline of export of raw cocoa beans and was followed by an increase in the export of intermediate products, the formula is not as straightforward as one might assume. The success was also the result of lead firm strategies to invest in the cocoa processing sector in Indonesia due to considerations such as market imperatives and cost-capability ratios. However, the inability of the government to accurately identify this opportunity resulted in inefficiencies related to the establishment of excess processing capacity, increased foreign control and the ongoing decline in agricultural production. Policy-makers need to be ever alert to interventions that might inadvertently risk disrupting the very supply base that offers a potential comparative advantage for *hilirisasi* pathways.

The implementation of similar export restrictions in the coffee sector would involve considerable risks, and would need attentive consideration to prevailing industry structures and market imperatives. This would include accounting for the distinct GPN structures that exist between specialty coffee chains (relatively dispersed roasters with strong market imperatives to retain roasting as a core competency and fairly tight control over suppliers), and instant coffee manufacturers (strong marketing requirements and higher technological requirements leading to higher levels of concentration amongst a few global lead firms, but with increasing outsourcing of bulk soluble coffee processing in emerging markets). Critically, access to the know-how and skills

necessary to compete globally in all of these networks can be seen to be most effectively developed through tighter integration with global lead firms.

In both the coffee and cocoa industries, public investments in supply-side interventions such as providing facilities for farmers and small-scale processing units may need to be reconsidered. The effectiveness of such programs depends heavily on the capability of these farmers and processing units to satisfy the priorities of downstream lead firms, and this is currently limited. This is particularly true for cocoa, where farmers do not have the capacity to produce good quality intermediate products.

Finally, this article posits that re-examining *hilirisasi* through a GPN framework helps to identify which policies and policy instruments can be considered effective in promoting industrialisation, and how the government should adjust these instruments according to the strategies taken by which lead firms. The key challenge is how to encourage dynamic ‘strategic coupling’ between these lead firms and regional and national governments and institutions. From the government’s standpoint, formulating policies that are knowledge-based, able to expand beyond existing regional assets, and support access skills and technology from within the network to create, enhance and capture value will be a critical task.

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