THE VALUE CHAIN FOR INDONESIAN COFFEE IN A GREEN ECONOMY

RANTAI NILAI KOPI INDONESIA PADA GREEN ECONOMY

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ABSTRAK

The global value chain for Indonesian coffee is currently undergoing significant structural changes, which offer both opportunities and policy challenges for the Government of Indonesia in its attempt to develop a national green economy. These changes include: the declining importance of coffee farming as a reliable livelihood strategy for many rural households; growth of the domestic coffee processing sector; and the increasing influence of coffee trading companies in coffee farm systems associated with the expansion of global sustainability initiatives. This paper argues that a global value chain analytical approach could be applied by the Government of Indonesia in its attempts to integrate coffee sector development within its broader initiatives to promote a national green economy.

Keywords: Coffee, green economy, global value chains, Indonesia

ABSTRACT

Pada saat ini, rantai nilai global kopi Indonesia sedang mengalami perubahan struktural yang signifikan. Perubahan tersebut menawarkan peluang dan tantangan kebijakan bagi pemerintah Indonesia dalam upaya mengembangkan green economy nasional terkait dengan menurunnya peran usahatani kopi sebagai strategi mata pencaharian yang dapat diandalkan bagi banyak rumah tangga pedesaan, pertumbuhan sektor pengolahan kopi dalam negeri, dan meningkatnya pengaruh perusahaan perdagangan kopi pada sistem usahatani kopi terkait dengan keberlanjutan perluasan prakarsa global. Makalah ini berpendapat bahwa pendekatan analisis rantai nilai global dapat diterapkan oleh pemerintah Indonesia dalam upaya untuk mengintegrasikan pembangunan sektor kopi terkait prakarsa yang lebih luas untuk mempromosikan green economy nasional.

***Kata kunci**: Kopi, green economy, rantai nilai global, Indonesia*

INTRODUCTION

The various actors involved in the Indonesian coffee industry - smallholder farmers, large plantations estates, village collectors, traders, mill operators, exporters, and coffee roasting and processing companies - are embedded within a global value chain for coffee. The economic well-being of these various individual actors, and the ability of the industry to contribute to the development of a national green economy, therefore, requires heightens sensitivity to the changing dynamics occurring within this global value chain. The paper will provide an overview of this global value chain from the Indonesian perspective, identify opportunities for upgrading within the chain, and explore synergies between value chain development and recent policy ambitions of establishing a national green economy.

President Yudhoyono was widely commended for his high-profile participation at the UN Conference on Sustainable Development in Rio de Janeiro, Brazil, or the Rio + 20 Conference, held in June 2012. A key theme of the Rio + 20 Conference was how to build a 'green economy' to achieve sustainable development and how to lift people out of poverty by charting a green path for development. While the Government of Indonesia had arguably already announced its ambitions for developing a green economy in 2010 with the second United Indonesia Cabinet, the Rio + 20 Conference provided a renewed focus for these ambitions within

Indonesia. The Ministry of the Environment has been designated as the key agency responsible for coordinating the development of a green economy, and has emphasised its current efforts on capacity building, education, innovative financial schemes and socio-entrepreneurship (Dhewanthi, 2012).

The United Nations Environment Programme (UNEP, 2011) defines a green economy as one that results in: "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities".

The idea of a green economy, however, has a much longer history in environmental thought and is commonly traced back to *A Blueprint for a Green Economy* (Pearce *et al.*, 1989). This report was published following the 1986 Bruntland Report on Sustainable Development and in preparation for the first UN Conference on Sustainable Development in Rio, 1992. To achieve sustainable development, this report highlighted three key economic policy areas that needed to be addressed and which are now generally recognised to constitute the core of environmental and ecological economics: 1) environmental valuation; 2) accounting for the environment; and 3) creating incentives for environmental improvement. The report popularised the notion that 'natural capital' was equally as important to a nation's prosperity as physical, financial or human capital. Natural capital includes both natural resources (timber, minerals, soil, fisheries etc.) as well as ecosystem services (erosion control, atmospheric control, pollination, water supply, and habitat provision). A key message of *A Blueprint for a Green Economy* was that environmental services are not, in fact, free, and it argued that: "There will be situations in which growth involves the sacrifice of environmental quality, and where conservation of the environment means forgoing economic growth. But sustainable development attempts to shift the focus to the opportunities for income and employment opportunities from conservation, and to ensuring that any trade-off decision reflects the full value of the environment" (Pearce *et al.*, 1989).

In practice, the implementation of green economy initiatives within Indonesia – through environmental valuation and market-based incentives – has often been opposed by various industry and community groups. This is evident in the resistance to the Roundtable for Sustainable Palm Oil (RSPO) and some other ecolabelling initiatives, and the periodic protests against the removal of carbon subsidies across the economy, most evident in fuel prices. As discussed later in this paper, there is also some resistance to sustainability programs within the Indonesian coffee value chain, although it is argued that these should in fact be seen as opportunities to support development of a national green economy. The analytical framework of a global value chain is a helpful way to better understand this opportunity.

What is a global value chain (GVC)? According to the Global Value Chain Initiative, hosted by Duke University, "The value chain describes the full range of activities that firms and workers do to bring a product from its conception to its end use and beyond. This includes activities such as design, production, marketing, distribution and support to the final consumer. The activities that comprise a value chain can be contained within a single firm or divided among different firms." (www.globalvaluechains.org)

GVC analysis provides a useful framework for understanding how and why economic change produces benefits for some countries and regions and not others, and how advantages and disadvantages accrue to specific actors within the chain (Neilson and Pritchard, 2009). The GVC approach was formulated and popularized primarily through the research of Gary Gereffi in the mid-1990s (Gereffi, 1994; 1996; 1999; Gereffi and Korzeniewicz, 1994), and there has been an explosion of interest in 'value chains for development' over the last decade from donor agencies and national governments (Neilson, 2014). The recent 2013 World Investment Report published by the United Nations Conference on Trade and Development (UNCTAD) is titled *Global Value-Chains: Investment and Trade for Development*, suggesting the heightened policy appeal of the value chains framework.

The concept of 'upgrading' has been particularly important as a policy tool adopted by development agencies and governments applying a value chains for development approach (Neilson, 2014). Gereffi (1999) described 'upgrading' as a

process of moving into more profitable or technologically sophisticated economic niches and explains how participation in a chain is often a necessary step that puts firms and economies on potentially dynamic learning curves. This idea draws primarily on the experiences of the high-performing Asian economies, whose rapid economic development in the late 20th century was made possible through specific articulations of global chains and the off-shoring of US and European manufacturing. Under this explanation, East Asian firms evolved from simple equipment assembling through to component suppliers to foreign multinationals, and then ultimately developed capacity to design, manufacture and brand their own goods for export. Further development of this notion of upgrading will be applied to the Indonesian coffee industry later in this paper.

THE VALUE CHAIN FOR INDONESIAN COFFEE

Indonesia has been a leading global coffee producer for centuries and, according to the International Coffee Organization (www.ico.org), it overtook Columbia to be the world's third largest producing country in 2008. Indonesia is primarily a producer of lower-quality Robusta coffee. While annual production levels are highly dependent on weather conditions, the ICO estimates that annual production has averaged 600 thousand tonnes over the period 2008-2012, while exports of green beans have averaged around 400 thousand tonnes. Approximately, 80% of exports are Robusta and 20% Arabica (www.ico.org). While it is difficult to obtain accurate farm-level production data in Indonesia, an indication of the relative importance of the different producing regions can be gleaned from the more precise set of export data collected at major container ports within Indonesia. Figure 1 indicates the strategic importance of the Bandar Lampung port at the southern tip of Sumatra, which exports Robusta coffee grown in the provinces of Lampung, South Sumatra and Bengkulu. Medan and Makassar primarily export Arabica coffee, while Surabaya exports both Robusta and Arabica, and is also a hub for coffee grown in the relatively minor growing regions of Bali and Nusa Tenggara.

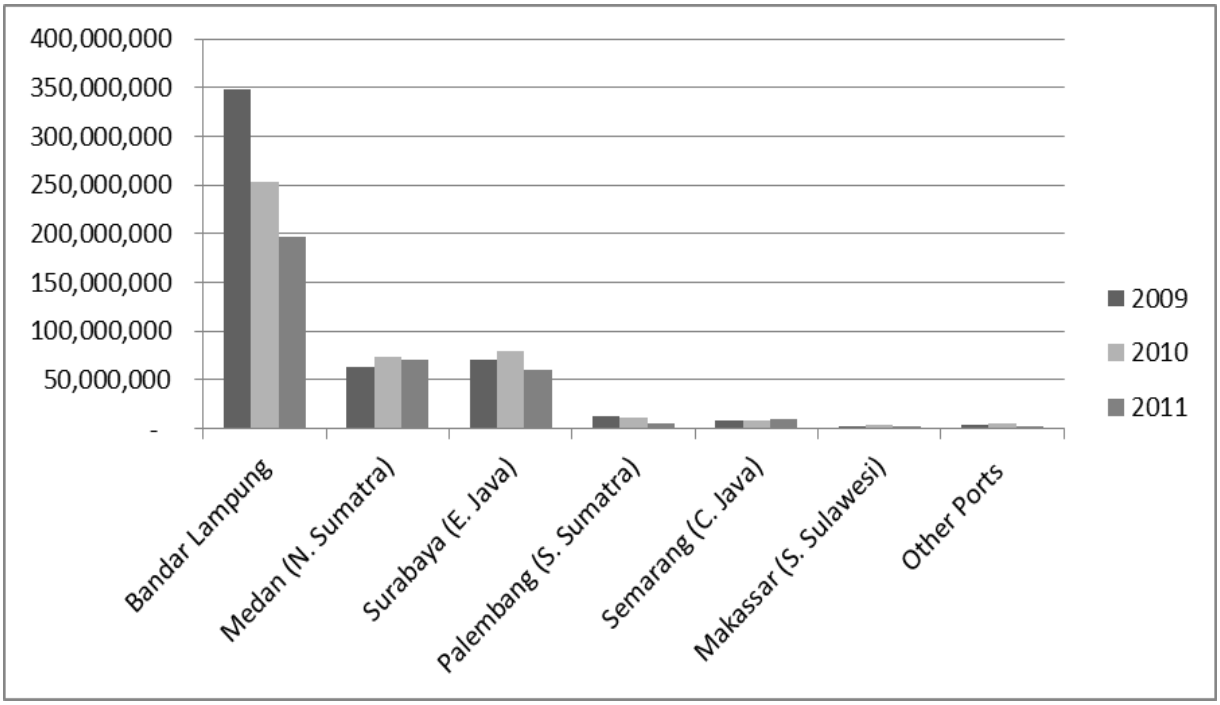

Figure 1. Coffee exports from major Indonesian coffee ports (kg/year) (Source: BPS, 2012)
Gambar 1. Ekspor kopi dari pelabuhan utama kopi Indonesia (kg/tahun) (Sumber: BPS, 2012)

Figure 1 shows that while exports were relatively stable in Medan and Surabaya over this period, exports from Bandar Lampung showed a sharp decline. While climatic factors undoubtedly played a role in the decline, it also seems probably that increasing coffee consumption within Indonesia is also an important influence. Domestic consumption competes more directly with export markets for Sumatra Robusta than it does for the higher quality Arabica coffees, which are strongly focused on exports.

The leading ten export destinations for Indonesian Robusta coffee, for each year from 2009-2011, are presented in Table 1, based on data from Bandar Lampung. For the most part, Robusta coffee is sold into world markets as an undifferentiated bulk commodity, and the volumes sent to each destination country can vary significantly from year to year (see, for example the sharp decrease in exports to the United States from 2010 to 2011 and the corresponding increase in exports to Malaysia). A significant volume of Robusta coffee from Southern Sumatra is also sold into emerging markets, including Malaysia, India, Morocco, and Algeria. These markets are generally expected to be highly competitive in terms of price, but to be less demanding in terms of quality and less likely to insist on sustainably-certified coffee. Table 1 also appears to suggest a longer term trend towards these emerging markets as key export destinations. Export destinations for Arabica coffee from Medan (Table 2), however, tend to be more stable and dominated by developed country markets, with important implications for value chain upgrading as discussed below.

Table 1. Volumes of (Robusta) coffee beans exported to leading destinations from Bandar Lampung (kg/year) (2009-2011)
Tabel 1. Volume ekspor biji kopi Robusta Indonesia dari Bandar Lampung ke beberapa negara terkemuka di dunia tahun 2009-2011 (kg/tahun)

2009			2010			2011		
No.	Destination	Volume (kg/year)	No.	Destination	Volume (kg/year)	No.	Destination	Volume (kg/year)
1.	Germany	61,679,455	1.	Germany	41,626,400	1.	Japan	33,521,059
2.	United States	32,175,400	2.	Japan	29,458,124	2.	Italy	19,164,540
3.	Belgium	28,086,120	3.	United States	21,034,100	3.	Malaysia	16,749,270
4.	Japan	26,241,660	4.	Italy	17,525,800	4.	Germany	15,532,500
5.	Italy	26,169,219	5.	United Kingdom	17,065,424	5.	Belgium	12,590,040
6.	Algeria	24,475,075	6.	Malaysia	15,695,704	6.	United Kingdom	11,520,600
7.	Philippines	18,356,400	7.	Belgium	11,249,900	7.	India	9,947,900
8.	Russia	15,478,799	8.	Algeria	9,184,800	8.	Morocco	8,133,300
9.	Spain	11,126,085	9.	Ecuador	8,558,880	9.	Russia	8,013,600
10.	United Kingdom	10,987,000	10.	India	6,816,800	10.	United States	6,888,000

Source/*Sumber*: *BPS (2012)*

Table 2. Volumes of (Arabica) coffee beans exported to leading destinations from Medan (2009-2011)
Tabel 2. Volume ekspor biji kopi Arabika Indonesia dari Medan ke beberapa negara terkemuka di dunia tahun 2009-2011

2009			2010			2011		
No.	Destination	Volume (kg/year)	No.	Destination	Volume (kg/year)	No.	Destination	Volume (kg/year)
1.	United States	32,605,852	1.	United States	33,872,582	1.	United States	36,907,517
2.	Japan	8,947,959	2.	Japan	14,031,008	2.	Japan	11,180,357
3.	Germany	2,922,537	3.	Germany	4,795,540	3.	Germany	4,773,158
4.	Canada	2,376,119	4.	Belgium	2,640,398	4.	Belgium	3,853,500
5.	Belgium	2,218,188	5.	Canada	2,442,297	5.	Canada	2,758,296
6.	Singapore	1,679,360	6.	Korea	1,972,073	6.	United Kingdom	1,720,661
7.	Malaysia	1,570,285	7.	United Kingdom	1,932,035	7.	Australia	1,665,105
8.	United Kingdom	1,379,509	8.	Malaysia	1,516,372	8.	Taiwan	999,188
9.	India	1,331,300	9.	Australia	1,510,252	9.	India	917,280
10.	Taiwan	1,323,649	10.	Taiwan	1,371,730	10.	Korea	821,111

Source/*Sumber*: *BPS (2012)*

An estimated 95% of Indonesian coffee is currently produced by smallholders, while the remainder comes from large state-owned plantations and a smaller number of private estates. The main coffee belt in Southern Sumatra is found on the eastern side of the main Bukit Barisan Mountain Range, which runs parallel to the west coast of the island. In this region, and indeed in many Arabica-growing regions of the country, coffee was commonly planted on previously forested lands or integrated into pre-existing systems of swidden cultivation. It is extremely rare for coffee farmers to hold certificates of land ownership, and the formalization of state forestry lands in the 1970s has resulted in numerous land conflicts between coffee farmers and state forestry departments. Expansion of coffee growing into Protection Forest (*Hutan Lindung*) and even into some National Parks (WWF, 2007) still occurs across Indonesia, exacerbating land conflicts and social tensions. In some instances, such as in the Sumber Jaya district of Lampung, farmer groups have negotiated community forestry agreements (*Hutan Kemasyarakatan*) with the government within Protection Forest on the condition that hydrological functions are maintained through adequate shade cover (Suyanto *et al.*, 2005). Since around the year 2000, the forest estate on Java, managed by the state agency, PERHUTANI, has also been open to community forestry agreements that allow farmers to grow cultivate Arabica coffee beneath a canopy of timber trees. The community can harvest the coffee, but cannot cut the trees. These schemes have been a key factor behind the recent expansion of coffee production in West Java, producing so-called *Preanger* coffee.

The various coffee regions of Indonesia vary considerably in terms of production systems (estate versus smallholders), coffee quality, value chain structures, institutional support structures, the role of the private sector, environmental conditions and scale. As a result, it is almost impossible to talk of key characteristics for the 'Indonesian coffee industry'. Most fundamentally, the Robusta sub-sector should be considered an entirely different commodity to its Arabica cousin. At the very least, the coffee industry is comprised of six regional sub-sectors that should be considered separately. In order of relative size, these are:

1. The Southern Sumatra Robusta complex, with exports through the port of Bandar Lampung and also an important supply region for the domestic market,
2. The Northern Sumatra Arabica industry (comprising North Sumatra and Aceh Provinces), with exports through the port of Medan,
3. The East Javanese estate sector, dominated by PTPNs and with exports through Surabaya,
4. The Sulawesi coffee region (primarily Arabica), with exports through Makassar.
5. The Javanese smallholder production regions, now spread across West, Central and East Java, with exports primarily through Semarang and Surabaya,
6. The Balinese and Nusa Tenggara coffee regions, with both Arabica and Robusta coffee exported through the port of Surabaya,

While some Arabica coffee is also grown in Indonesian Papua, field observations suggest that the total volume is extremely low and certainly less than 100 tonnes annually.

The global value chain for coffee is dominated by a relatively small number of lead firms, almost all based in Western Europe or North America. This includes firms such as Mondelez, Nestle, Proctor and Gamble, Tchibo and Starbucks. Not only do these lead firms tend to be the most profitable in the chain, but they are increasingly responsible for governing the entire value chain and for imposing product and process standards that suppliers elsewhere in the chain must comply. This extended influence is critical when considering the introduction of sustainability standards into Indonesia. These large global roasting firms generally rely on international trading companies to source coffee from producing countries on their behalf. This node of the coffee value chain is dominated by multinational companies, including Ecom Agroindustrial Corp, Armajaro Trading, Olam International, Louis Dreyfus Group, ED & F Man (Volcafe), and Continaf (Ned Commodities). There has been a gradual trend in recent decades for these

international trading companies to integrate their activities upstream into producing countries, and all of these named companies are active exporters from Indonesia. As specialist supply chain managers, with vast international experience and generally with access to cheaper finance than Indonesian exporters, foreign trading companies now constitute an estimated 50% of total coffee exports from Indonesia. The capacity to successfully implement supply chain sustainability programs is an increasingly important aspect of competitiveness for these traders, and many are now actively coordinating tight supply chains back to the farm-level in Indonesia.

Coffee-based Livelihoods in Indonesia

There may be up to two million coffee farm households spread across Indonesia: Ditjenbun (2012b) estimates 1.88 million households and Wahyudi and Jati (2012) estimate 1.97 million coffee-growing households. Assuming at least four individuals per household, coffee farming may be a key livelihood source for up to eight million individuals across the country.

While it is extremely difficult to generalise, a typical Indonesian coffee farmer cultivates one hectare of coffee alongside other tree crops, such a cocoa, fruit trees, and pepper, and most likely continues rice production for subsistence production. Many households would receive remittances from family members working away from the farm and others would augment farm production with petty trade, or work as labourers and craftsmen. In many respects, the Indonesian coffee farmer is emblematic of what might be considered to be a rural peasant, who seeks to ensure survival through a myriad of livelihood strategies, but which rarely does this through investing substantially in coffee productivity. Record-keeping of the use of labour and inputs, and even farm-gate sales is rarely maintained by these households, such that the farm unit is not currently organised as a profit-maximising business. Assuming annual productivity of 500 kg per hectare (probably quite a generous estimate for many coffee farms – see discussion below), an average holding size of one hectare and farm-gate Robusta prices of Rp. 15.000,00/kg in 2013, then each household might obtain a gross coffee-income of 7.5 million rupiah per year (660 USD/year). At 1.8 USD /day /household (before costs), few coffee farm households are currently motivated to allocate scarce resources to coffee-growing.

Official production data (Ditjenbun, 2012b) suggests productivity of Robusta coffee nationwide to be steady between 716 and 771 kg per hectare during the years 2008-2012, and Arabica productivity is even higher (up to 920 kg per hectare). However, such data should be treated cautiously. The relative lack of annual variation seems incongruous with the expected variations in output caused by weather conditions as observed at both the farm-level and also in terms of recorded exports. Unpublished field data collected through a survey of 125 coffee farmers on recently established farms in Lampung in 2008 found a median productivity of only 500 kg per hectare (author's own primary data). In other parts of the country, such as South Sulawesi, recorded Arabica output based on 400 farmer interviews for established coffee farms is even lower at less than 200 kg per hectare (Neilson *et al.*, 2013). It is clear that smallholder coffee productivity levels in Indonesia are extremely low by international standards.

The causes of low productivity are many and varied depending on the specific producing region, but include:

1. Natural climatic factors; it appears the heavy rainfall during the dry season may be negatively affecting production in some regions, such as in South Sulawesi, where climate change models are predicting increased rainfall in the future.
2. Pests and Disease; berry borer is affecting the volume, and quality, of coffee produced in many regions and is commonly identified by farmers as their most damaging pest or disease concern. Producing regions that do not experience a clear dry season and tend to maintain production throughout the year are generally worse affected.
3. Limited use of fertilisers – both synthetic and organic – and inadequate attention towards maintain soil fertility and conserving soil resources.

4. Lack of pruning; coffee is capped and shaped in some regions of Indonesia, but is left to grow essentially 'wild' in many other regions.
5. Poor planting material and ageing stock; while some replanting occurs locally, coffee farmers do not generally have access to improved planting material and are unwilling, or financially unable, to temporarily forego income to replace ageing stock.
6. Shade-grown coffee; most coffee across Indonesia is grown under a relatively dense canopy of shade or as multistrata coffee, unlike more higher-yielding plantations in Vietnam or Brazil.
7. Diversified livelihoods; many farmers choose to invest their financial resources and labour into alternative livelihoods including subsistence food production (farmers often refer to a ratio of the price of coffee to rice as an indicator of the profitability of coffee farming and this ration tends to be decreasing over time) and off-farm employment, and so do not adequately maintain coffee farms.
8. Coffee farmers across Indonesia have generally not had access to a high-quality and reliable extension system, although it is equally questionable whether they would be willing to increase their resource allocation to coffee farming regardless.

Aggregate data, based on official estimates, suggests that the average size of coffee holdings across Indonesia is around 0.6 hectares (Ditjenbun, 2012b), whereas primary survey data across Lampung and Sulawesi suggests a slightly larger average of 1.5 hectares (probably due to the fact that major coffee producing areas were targeted in this latter survey). Coffee is frequently produced by farm households for which coffee is part of a broader livelihood strategy, and in some cases, coffee is essentially a backyard crop where a household maintains only a few hundred trees. Other sources of farm-based income can be equally important to the household livelihood. Coffee cultivation is frequently viewed unfavourably by farmers who have access to alternative income opportunities. Across the main coffee-belt in Southern Sumatra, coffee is currently being replaced by rubber at lower altitudes and by horticultural vegetables at higher altitudes, and elsewhere by palm oil.

Upgrading (value-adding) in The Indonesian Coffee Sector

The global value chain framework generally refers to what is now a widely-recognized four-fold classification of upgrading, as initially presented by Kaplinsky and Morris (2001) and Humphrey and Schmitz (2002). As applied to the coffee industry in Indonesia, the four modes of upgrading are:

1. Functional upgrading: taking on new functions within the value chain, such as processing coffee beans into instant or roasted coffee instead of exporting green beans.
2. Product upgrading: moving into new (higher-value) product lines of the same basic product, such as quality improvement and the development of specialty coffees.
3. Process upgrading: producing the same product more efficiently and more profitably (e.g. using precision-farming and other improved agricultural technologies to produce green coffee more profitably).
4. Inter-sectoral upgrading: using skills and competencies gained in one value chain and applying them to another, such as using marketing skills gained through domestic coffee processing and applying these to tea processing.

The following discussion will focus on the experience and opportunities for functional and product upgrading in the Indonesian coffee sector.

Functional upgrading

Policy directives within Indonesia are frequently focused on functional upgrading and the downstream processing of agricultural products. The Government of Indonesia, through the Ministry of Industry, has identified the development of a 'Coffee Processing Industry Cluster' as strategically important to national development objectives (Ministerial Regulation

No. 115/M-IND/PER/10/2009). Indeed, there is much potential for the domestic processing of coffee beans into various consumer products.

At the 2010 census, Indonesia's population was nearly 238 million. Whilst accurate data on domestic coffee consumption is difficult to obtain, this vast population presents a lucrative market for roasted and processed coffee products, and Indonesian-based coffee companies have tended to concentrate on this market. According to USDA's 2013 Gain report for Indonesian coffee, 154.8 thousand tonnes (possibly a quarter of total production) will be required for domestic consumption in the financial year 2013/2014. The Surabaya-based Kapal Api Group (Santos Jaya Abadi), with leading brands like Kapal Api, ABC and Good Day, has long been the leading player in the domestic market. Other leading players in the domestic market include PT Mayora Indah (Torabika coffee), PT Nestle Indonesia (Nescafe), PT Jaya Internasional Indonesia (Indocafe), and more recently Wings Corporation (Top Coffee). Indonesian companies have pioneered the development of so-called '3-in-1' coffee products, with premixed sachets of instant coffee, sugar and milk. The value of imported instant coffee products has been relatively insignificant in recent years (Figure 2). Domestic coffee manufacturers, however, have successfully leveraged their experience in the domestic market to successfully launch export products, as reflected in the continued growth of exports of instant coffees from Indonesia since 2008 (Figure 2). These products have been primarily successful in penetrating other emerging markets such as Egypt, South Africa, Malaysia, Philippines and Singapore. Over the last decade, the international trade in instant coffees has grown at a faster rate than trade in both green beans and roasted coffees, and there has been a trend towards the production of instant coffees within producing countries (Sendall, 2013). It should be noted that the volume of higher quality roasted, non-instant, coffee (which is not shown in Figure 2) imported into Indonesia is only 8% of total processed imports and 1% of total processed exports (www. uncomtrade.un.org).

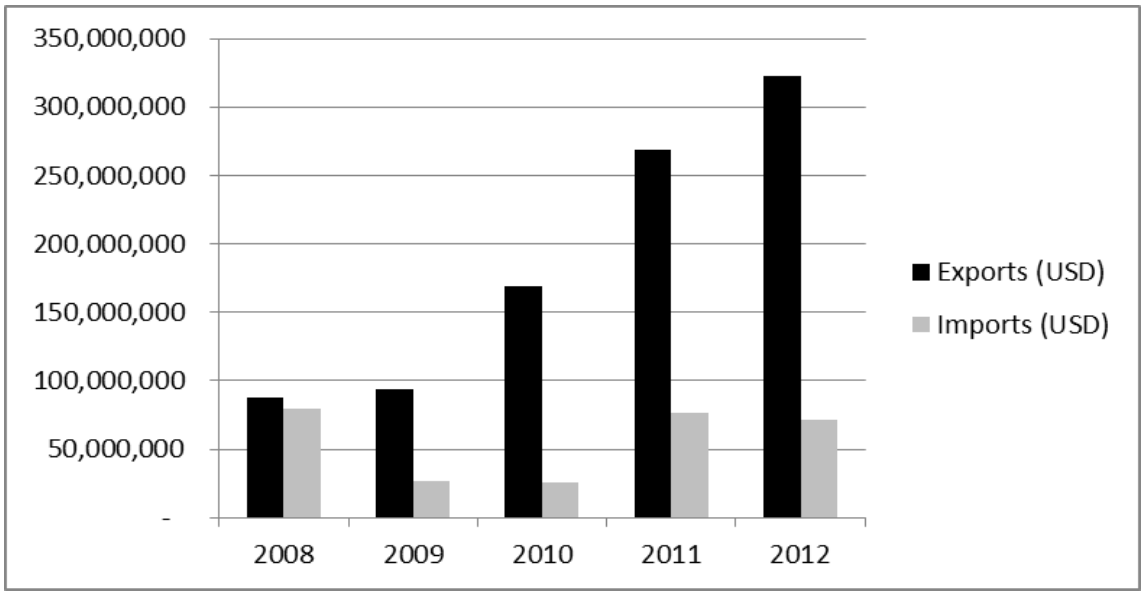

Figure 2. Value of international instant coffee trade (HS Codes 210111 and 210112) to and from Indonesia (USD) (Source: UN Comtrade, 2013)

Gambar 2. Nilai perdagangan internasional kopi instan (HS Codes 210.111 dan 210.112) ke dan dari Indonesia (USD) (Sumber: UN Comtrade, 2013)

In line with broader development objectives to proactively support the downstream processing of Indonesian natural resources as a means to increase the value-added content of exports, the government may be considering restrictive trade measures in the future to further enhance the competitiveness of domestic coffee processing. Industrial policy initiatives, such as export taxes and bans, have been imposed on other raw materials such as cocoa beans, rattan and minerals in recent years. At least domestically, these initiatives have generally been felt to have been successful, especially in a political sense. As presented in Figure 2, however, the Indonesian coffee industry appears to be already expanding into export markets without the need for protective measures.

It is equally important to emphasise that significant export potential exists specifically in the global instant coffee and ready-to-drink market segments, which Indonesia is already exploiting. There are, however, several serious constraints for processing and exporting whole bean, and roast and ground, coffees from Indonesia. Coffee roasting firms globally, particular in the high quality specialty markets, have tended to locate proximate to their consumers and to modify product characteristics to satisfy rapidly changing consumer tastes. Leading coffee brands will attempt to standardise taste profiles year after year, and this can only be achieved by skilfully blending different origins from across the coffee-producing world. This requirement for origin blending can also impose limitations on the producing country processing unless an open trade regime is maintained for green bean imports. Some destination markets, such as the EU, may also impose escalating tariffs on processed products affecting the competitiveness of Indonesian roasted coffees.

Indeed, the potential for further growth in this instant coffee sub-sector is supported by broader trends in global coffee consumption. Overall coffee consumption in the established markets of the USA, Japan, and the European Union, has not dramatically increased since 1990, while coffee consumption in the emerging markets, particularly Brazil, Russia, and Indonesia, has increased more significantly (Figure 3). Furthermore, while total coffee imports into China remain at less than 1% of world consumption, they have increased nearly five-fold between 2000 and 2012 (ICO, 2013), and are expected to increase further in the years ahead.

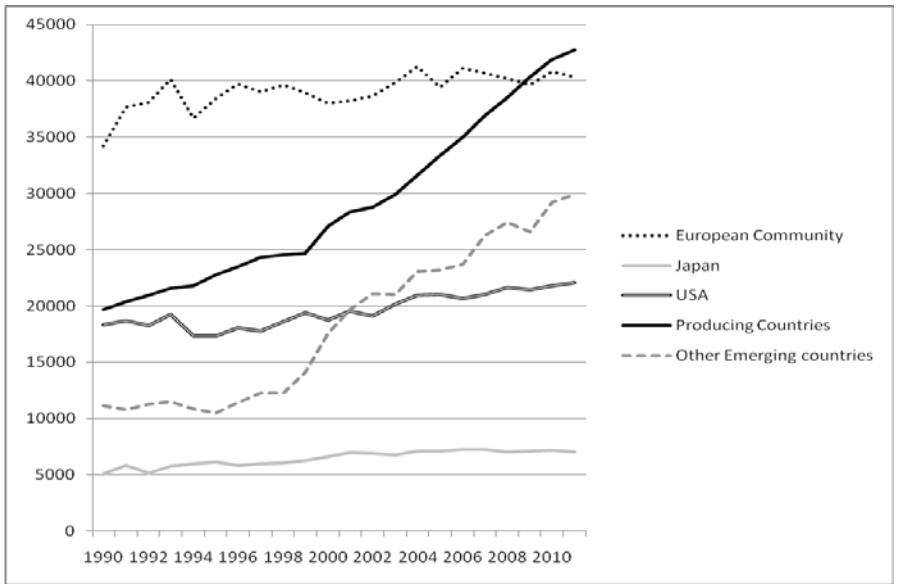

Figure 3. Global coffee consumption (1990-2009, in thousands of 60 kg bags)
Gambar 3. Konsumsi kopi global (1990-2009, dalam ribuan dari 60 kg)
Source : Compiled from ICO (2013).). 'Other Emerging Countries ' refers to all other markets (includes the former Eastern Bloc, North Africa and much of non-tropical Asia)
Sumber : Disusun dari ICO (2013). 'Emerging Markets' mengacu pada semua pasar selain Uni Eropa, Jepang dan Amerika Serikat

In the larger urban areas of Indonesia, out-of-home coffee consumption in cafes and shopping malls has grown rapidly over the last decade. This has involved the emergence of a cafe-culture, an appreciation of higher quality coffees, and a boom in both independent cafes and larger roaster-retailer chains. International roaster-retailer firms, such as Starbucks (with 147 stores across Indonesia[1]), Coffee Bean and Tea Leaf (47 stores), and Black Canyon Coffee (31 stores) have now established a strong presence in Indonesia alongside domestic coffee chains, such as J. Co Donuts and Coffee (owned by the Johnny Andrean Group with 135 stores) and Excelso (owned by the Kapal Api Group, with around 100 stores). Some smaller independent cafes in cities such as Jakarta, Bandung and Surabaya, are also seeking to source high quality coffees direct from producing regions and competing with export-oriented supply chains that have traditionally dominated in these specialty regions.

Product upgrading

Product upgrading (quality improvement) can also significantly contribute to domestic value-adding, and may even have greater pro-poor implications than functional upgrading in some cases. The average per unit value of instant coffee exports from Indonesia during 2011 was $3.5/kg (www.uncomtrade.un.org). This constituted substantial value-adding compared to the average price of green bean exports of Robusta coffee from Lampung in 2011 of only $2.02/kg (BPS, 2012). However, it is interesting that these processed coffees were still valued less per unit than higher quality Arabica coffee exported into the US specialty market from Medan or Makassar, the former of which averaged $6.6/kg in 2011 (BPS, 2012).

Unlike Indonesian Robusta coffee, Indonesian Arabica coffee has a strong international reputation for high quality. The diversity of growing environments across the archipelago results in a number of internationally-renowned Arabica coffees for the specialty market. Global demand for specialty coffee is growing, providing an opportunity for smallholder farmers in Indonesia to upgrade the quality of the coffee they produce and to become linked in to these higher-priced value chains. In the USA, specialty coffee is now estimated to represent 50% of the national coffee market by value share (SCAA, 2012). This has increased from an estimated 30% market share by value in 1999 (SCAA, 1999).

The production of specialty Arabica in Indonesia is currently concentrated in Northern Sumatra across the two provinces of North Sumatra and Aceh, from where coffee is commonly traded internationally under the trade names of *Gayo, Lintong*, and *Mandheling.* Other important Arabica-growing regions include Central and East Java, dominated by the government-owned estates of *Kayu Mas*, *Dampit*, and *Belawan* along with smaller volumes of smallholder coffee in regions such as the Situbondo district. Other small Arabica-growing regions (each producing less than five thousand tonnes annually) include South and West Sulawesi (*Toraja, Kalosi* and *Mamasa),* Bali *(Kintamani)*, and Flores (*Bajawa*). Despite producing relatively small volumes of coffee, these origins have established reputations in international specialty coffee markets, and can be highly sought after by specialty buyers. Coffee production is also locally important in terms of livelihoods. The Government of Indonesia has moreover recognized the development potential of specialty coffee through the establishment of 'Specialty Coffee Development' Programs (Ditjenbun, 2010; 2012a).

Some farmer organisations across Indonesia have, moreover, been able to successfully develop trade relationships with international and domestic coffee roasting firms operating in the specialty coffee sector[2]. These 'relationship coffees' in the specialty market can be particularly advantageous to farmers who receive elevated prices, and who receive technical input and advice about how to successfully upgrade the quality of their coffee. These buyers are also frequently willing to provide

[1] Store numbers are based on company websites, accessed September 15, 2013.

[2] For example, refer to www.fivesenses.com.au/coffee/single-origins/bali-kintamani or www.camposcoffee.com/our-coffee-producers/benteng-alla-village.aspx. for Indonesian examples of 'direct-trade' or 'relationship'coffees.

in-kind support directly to the farmers in the form of processing facilities and drying equipment. While there are certainly costs for farmers engaging in these trade relationships, there are also benefits. In some situations, there may well be a powerful pro-poor policy argument for facilitating and enhancing the capacity of farmer organisations to directly participate in these specialty markets.

A more recent attempt to increase the value-added retained in producing regions across Indonesia has been through the establishment of Geographical Indications (GIs), a form of collective intellectual property held by the producing region. GIs have now been approved for coffee from Kintamani (Bali), Bajawa (Flores), Gayo (Aceh), and Kalosi (Sulawesi), and other regions have also been proposed or nominated. There is, however, little evidence to date to suggest that these GIs have had a significant impact on demand, quality control, or prices in these regions, and their imp[act requires further research.

The leading ten export destinations for Indonesian Arabica coffee from Medan, for each year from 2009-2011, were presented in Table 2. Export markets for Indonesian Arabica tend to more stable than Robusta, and are dominated by developed markets in North America (especially the United States), Western Europe, and Northeast Asia (especially Japan). In the foreseeable future, these markets are likely to remain the most important for higher quality coffee from Indonesia. These are also the critical markets engaging most forthrightly with the various sustainability programs initiating along the value chain for Indonesian coffee.

SUSTAINABILITY PROGRAMS IN THE INDONESIAN COFFEE SECTOR

Over the past five years, the global coffee industry has witnessed the explosive expansion of supply chain sustainability schemes that monitor the social and environmental performance of producers. The world's coffee regions are now awash with farmer cooperatives maintaining complex documentation matrices concerning their members' farm practices, often with the assistance of international donors and NGOs, and complemented by a network of inspectors and auditors ensuring compliance to sometimes rigorous production standards. Trails of traceability then link these farmer organisations with consumers in Western Europe and North America. In many cases, these schemes are no longer an alternative to the mainstream - they are the mainstream.

Consumer demand for sustainable coffees is rising by 20-25% a year as opposed to just 2% in the conventional market, and whereas certified coffees were just 1% of market in 2001, they were 8% by 2010 and are predicted to be 20% by 2015 (Pierrot *et al.*, 2010). Nestle has estimated that they will require an additional 90,000 MT of Rainforest Alliance certified coffee by 2020. Sara Lee is committed to purchasing at least 350,000 MT of UTZ certified coffee by 2016 (20% of their total coffee purchases). UTZ certified, Rainforest Alliance and FLO have all declared their intentions to rapidly increase the amount of coffee they certify: UTZ to 1.3 million MT by 2020; FLO, to 500,000 MT by 2015; and Rainforest Alliance to 750,000 MT by 2020. Starbucks aims to buy 100% of its coffee from certified/verified sources by 2015, and Kraft (Mondelez) plans for 100% of their European coffee brands to be sourced from sustainable sources by 2015.

The key question posed by these schemes is whether they can genuinely deliver improved sustainability and ethical outcomes for farmers. Certainly, they provide core benchmarks of ethical and sustainable production, and usefully codify an exceedingly complex set of issues related to poverty alleviation and sustainable resource management into a recognisable mark that can be used to add-value to precious brand assets. However, there is a tension between their need to provide clear and simple messages to consumers, and the highly disparate contexts in which coffee is produced in various countries of Latin America, Africa and Asia.

The first 'certified' coffee in Indonesia (Mawardi, 2002) was an organic coffee from the Takengon region of Central Aceh, which in 1992 was marketed as *Gayo Mountain Organic Coffee*. This coffee was initially produced by a government-owned mill, but which was subsequently purchased by a US-based coffee trading company, adding both

Fair-trade and Utz certification. This mill directly supports an associated farmer organisation, both financially and through capacity building, and has set the basic model for certification activities across Indonesia. Under this model, the certificate is effectively held by an exporter in partnership with a smallholder production base. The exporter absorbs the costs of developing a farmer's organisation (sometimes, but not always, formalised as a cooperative) and managing an Internal Control System (ICS). One of the largest certified cooperatives in Aceh was established in 2005 as part of a post-tsunami USAID project, with a mill in Takengon managed by the National Cooperative Business Association (NCBA), and focusing on producing fair-trade, organic coffee, and now covers some 8000 members.

The Northern Sumatra Arabica industry has remained the primary focus of certification programs across Indonesia, with nearly two-thirds of all Utz and Rainforest Alliance coffee programs in Indonesia coming from this region (Table 3). This is despite the fact that this region is responsible for less than 20% of all coffee exports. In contrast, more than 60% of exports are from Bandar Lampung, and yet only 12% of coffee programs are found in Southern Sumatra.

The Starbucks Coffee Company is a major buyer of Indonesian Arabica coffee, from both Northern Sumatra and from Sulawesi, where it is estimated that the company is responsible for purchasing nearly half of all exports. Starbucks has made a commitment to ensure that 100 % of their coffees are sourced from 'ethical' sources by 2015, with 93% of their coffees already satisfying this requirement in 2012 (Starbucks, 2013). Starbucks relies primarily on their in-house ethical sourcing program - Coffee and Farmer Equity (C.A.F.E.) Practices – where the compliance of local supply chains (not necessarily producers) are verified by third-party auditors, which are overseen by SCS Global Services.

The combined effect of Utz Certified, Rainforest Alliance, Organic, fair-trade and Cafe Practices in both North Sumatra and Aceh is therefore substantial, and there is significant competition amongst exporting firms to establish relationships with producer organisations in the region. There have been far greater incentives to certify higher quality Arabica coffee compared to Robusta in Indonesia. This is probably due to the greater willingness of specialty buyers to pay a premium for certified coffee, but may also be due to the greater dominance of both emerging markets and the domestic Indonesian market for the Robusta-growing regions of Southern Sumatra.

The exception to this Arabica focus is The Common Code for the Coffee Community (4C), which currently lists fourteen 4C-compliant units with Indonesia, thirteen of which are based in Southern Sumatra (www.4c-coffeeassociation.org). While foreign-owned trading companies tend to be more active than Indonesian-owned exporters in most certification programs across Indonesia, they are particularly dominant within the 4C units, where they are responsible for ten of the fourteen units.

Table 3. Location of major certification programs in the Indonesian coffee sector
Tabel 3. Lokasi program sertifikasi utama di sektor kopi Indonesia

Region	Utz certified		Rainforest alliance	
	Producer	Trader	Producer	Trader
Northern Sumatra	7	8	27	25
Southern Sumatra	1	3	5	4
Java	2	3	3	8
Sulawesi	1	-	1	2
Flores	-	-	3	-
Bali	1	-	1	-
Papua	-	-	1	-
Total	**12**	**14**	**41**	**39**

Source/*Sumber*: www.utzcertified.org and www.rainforest-alliance.org

Only 7 of the 41 listed 'producers' of Rainforest Alliance coffee, and only 1 of the 12 list 'producers' of Utz Certified coffee in Indonesia can be identified as farmer organisations. With the exception of two Utz Certified plantation estates, the remainder are all exporting firms, confirming the ubiquity of the exporter-led model in Indonesia, as described above. Even those producers identified as farmer cooperatives are likely to be directly supported and even established by exporting firms. This phenomenon has encouraged a shift in local value chain structures, whereby exporters are forced to engage directly with farmers and frequently develop up-country direct-buying stations rather than relying on extended trade networks to deliver coffee to warehouses at the major ports. At least initially, exporters are required to offer price incentives to farmers in return for their participation in the schemes. Otherwise, farmers frequently report little direct benefit from participation.

The introduction of global sustainability programs has been contentious politically within Indonesia, with several concerns and objections voiced both by the government as well as by leading industry associations. The key tenet of these objections is a 'neo-colonial' imposition of foreign standards as an entry barrier for coffee being sold into key destination markets. Indonesian-owned exporters, many of whom are already struggling to outcompete with foreign traders and their access to low-credit finance, perceive these schemes to be a technical, non-tariff, barrier to exports. It is generally felt that the additional costs of implementing certification programs are not being compensated adequately through price premiums in the market, and are instead being borne by traders and – it is argued - ultimately farmers (GAEKI, 2012). Local exporters view certification as a kind of 'quota' system that allows preferential rent-seeking by foreign traders. The penetration of foreign traders into growing regions and the establishment of direct-buying relationships with farmers are frequently presented – according to this narrative - as neo-colonial exploitation of poor farmers reminiscent of the practices of the VOC (Dutch East Indies Company). The domination of foreign NGOs and standard-setting organisations is seen as further evidence of this collusion, and has fuelled calls for establishment of a local standard domestically within Indonesia.

It is possible that the Indonesian government may proceed with plans to establish a national coffee standard as an alternative form of certification. A workshop held in Jakarta, hosted by the Ministry of Agriculture in September 2012, agreed to draft a national standard and its certification system for sustainable coffee in Indonesia. Indeed there is some precedent in Indonesia for doing so in other commodities. Since 2010, the Indonesian government, under pressure from powerful agribusiness interest groups in the country, have been developing a national program - the Indonesian Sustainable Palm Oil (ISPO) – as an alternative certification scheme to the Roundtable on Sustainable Palm Oil (RSPO), of which they had been highly critical (www.ispo-org.or.id). Similarly, a National Reference Group for Tea was formed in 2008 with strong government support and subsequently established a national certification standard – *Teh Lestari* - in 2010 (www.tehlestari.com). In the cocoa sector, a National Reference Group took a slightly different approach and developed 'National Indicators for Sustainable Cocoa Certification' in 2010, which were designed in partnership – rather than competition - with existing programs such as Utz Certified and Rainforest Alliance.

In the coming years, immense pressure will undoubtedly be placed on these sustainability models to deliver and demonstrate real benefits in areas of principal concern to growers, such as access to finance, access to risk management tools, improved technical knowledge regarding agronomic and pest management matters, access to agricultural inputs, and ultimately, improved profitability. Of equal importance will be to ensure that the high transaction costs frequently associated with implementing supply chain traceability do not result in benefits to auditors, cooperative managers and exporters, but depressed prices at the farm-gate. A final challenge to the current system will be to incorporate a place-based sensitivity to the unique environmental, social and agronomic issues facing each producing region rather than the

current approach of benchmarking performance against a pre-determined compliance checklist.

Despite these challenges, the introduction of international sustainability programs in the Indonesian coffee sector provides a clear mechanism for encouraging the coffee value chain to support development of a green economy. These programs offer new modes of delivery for farmer support activities that might allow "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". It is clear that enhanced value chain monitoring and enforcement provides an opportunity to introduce key aspects of a green economy, such as environmental valuation and incentives for ongoing environmental improvement.

CONCLUSIONS

The global value chain for Indonesian coffee is undergoing significant structural changes, which offer both opportunities and policy challenges for the Government of Indonesia. Even in key coffee-growing regions, coffee farming is increasingly perceived to be an unreliable livelihood strategy for many households, whose limited resources are instead being directed elsewhere. The domestic coffee processing sector appears to be experiencing strong growth in recent years, with many firms successfully upgrading into more competitive export markets. It is important to emphasise that the policy interventions required to further stimulate functional upgrading (downstream processing) in the coffee value chain will be different to those required to facilitate product upgrading (quality improvement and engaging with specialty markets). And indeed, attempts to support the former (for example through protective export restrictions on raw beans) may in fact work against the benefits of product upgrading at the farm-level. Experience elsewhere (UNCTAD, 2013) suggests that integration within global value chains, for example through foreign investment in domestic processing activities, will lead to greater capture of value-added in the long-term.

Many coffee trading companies are now actively involved in the development and expansion of international sustainability initiatives, which is driving their increased upstream involvement in farmer support programs. In addition to creating incentives for enhanced environmental performance (ie. supporting a green economy), these programs offer considerable potential to evolve new mechanisms for delivering much-needed services to coffee farmer (such as access to finance and as conduits for knowledge about improved agricultural practices). They also lead to restructured supply chains and have even encouraged the emergence of more effective farmer organisations. Through the lens of global value chains, sustainability programs offer possibilities for product and process upgrading at the farm-level by establishing new information flows between chain actors, and so could be better harnessed through supportive government policy as a mechanism for addressing farmer well-being and poverty alleviation.

The observed declining interest in coffee farming across Indonesia suggests that new modes of farm-level intervention, potentially through sustainability programs, are required if the coffee sector is to retain any strategic importance for either industrial development or poverty alleviation and improved well-being within modern Indonesia.

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