Sustainability and economic governance: Reconfiguring cocoa-chocolate production networks in Indonesia



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Abstract

The concept of sustainability has recently become integrated into mainstream commercial spheres of cocoa-chocolate industries, whilst the concept remains elusive and debateable in the political sphere. The sustainability initiatives attempt to improve both farm management and farmer livelihoods by voluntarily integrating certification schemes (e.g., RA, Utzcertified, and Fairtrade) along with other initiatives. Exploring the implications of the sustainability initiatives beyond vertical industrial governance, this study contributes to the extant literature on GVCS/GPNs and provides an understanding of the extension of sustainability concept into horizontal extrafirm bargaining strategies. This study highlights the increasing industrial-centred power beyond a reorganisation of industrial activities of two case studies, Mars and Nestlé. The initiatives have resulted an increase vertical coordination with the upstream cocoa production networks, as the schemes become an instrument to minimise the supply risks. Also, the horizontal engagement through public private partnerships has created a negotiation space with extrafirm actors, yet the state participation in sustainability (keberlanjutan) discourse appeared to support local industrialists and the transnational firms to secure cocoa supply. Sustainability has strengthened the firm position in the upstream production networks, but the local actors and farmers continue struggle to overcome increasing market barriers and uneven competition. Eventually, the initiatives emphasize the economic interests, but at the expense of the cheaper productive capital supplied by the smallholder farmers and creating new processes of uneven development.

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List of Abbreviations

ACDI/VOCA Agricultural Cooperative Development International/Volunteers in Overseas

Cooperative Assistance

ACRI American Cocoa Research Institute

ADM Archer Daniels Midland

AFTA ASEAN Free Trade Agreement

AIKI Indonesian Cocoa Industry Association (Asosiasi Industri Kakao Indonesia)

AMARTA-ASKA Agribusiness Market and Support Activity-AMARTA Sustainable Cocoa Alliance

APIKCI Indonesian Cocoa and Chocolate Industry Association (Asosiasi Pengusaha Industri

Kakao dan Coklat Indonesia)

ASEAN Association of Southeast Asian Nations

ASKINDO Indonesian Cocoa Association (Asosiasi Kakao Indonesia)

BT-Cocoa Bumi Tangerang Mesidotama-Cocoa

Caobisco Association of Chocolate, Biscuit & Confectionary of Europe

CDC-CVC Cocao Development Centre-Cocoa Village Centre

CEPAT Cocoa economic cluster partnership

GPN Global Production Network
CEO Chief Executive Officer

CPQP-SCPP Cocoa Production Quality Program - Sustainable Cocoa Production Program

CSP Cocoa Sustainability Partnership
CSR Corporate Social Responsibility

CSV Create Share Value

DEKAINDO Indonesian Cocoa Board (Dewan Kakao Indonesia)

EU-CEPA European Union Comprehensive Economic Partnership Agreement

EQSI Economic Quality and Sustainability Improvement

FAO Food Agriculture Organisation
FDI Foreign Direct Investment
GCC Global Commodity Chain

GERNAS National movement (Gerakan Nasional)

GTZ German Technical Agency

GVC Global Value Chain

ICCO International Cocoa Organisation

ICCRI Indonesian Coffee Cocoa Research Institute

ICS Internal Control System

IDH Dutch Sustainable Cocoa Trade Initiative (Initiatief Duurzame Handel)

IFAD-READ International Fund for Agriculture Development-Rural Empowerment and

Agricultural Development Program

ILO International Labour Organisation
ISCocoa Indonesian Sustainable Cocoa

ISEAL Alliance International Social and Environmental Accreditation and Labelling Alliance

MCA-GPP Millennium Challenge Account -Green Prosperity Program

MCC-MCA Millennium Challenge Corporation- Millennium Challenge Account

MCSI Mars Cocoa Sustainability Initiative
MoU Memorandum of Understanding
MSI Mars Symbioscience Indonesia

NCP Nestlé Cocoa Plan

NGO Non-Government Organisation NRG National Reference Group

OECD Organisation for Economic Co-operation and Development

PISAgro Partnership for Sustainable Agriculture

PPHP (P2HP) Directorate General of Agro-industry Processing and Marketing (Ditjen

Pengolahan Pemasaran Hasil Pertanian)

PMK Financial Ministry Regulation (Peraturan Menteri Keuangan)

PP Government Regulation (Peraturan Pemerintah)

PPKB Sustainable Cocoa Development Program (Program Pengembangan Kakao

Berkelanjutan)

PPP Public Private Partnership

RA Rainforest Alliance

RSCE Roundtable for Sustainable Cocoa Economy

R&D Research and Development

UK United Kingdom

UNCED United Nations Conference on Environment and Development

UNCTAD United Nations Conference on Trade and Development

USA United State of America

USDA United State Development Agency

USAID United State Agency for International Development

SE Somatic Embryogenesis

SEEDS Social Economy Environmental Development for Sustainability
SNI Indonesian National Standard (Standar Nasional Indonesia)
SUCCESS Sustainable Cocoa Enterprise Solution for Smallholders

TMCI Tana Mas Cocoa Indonesia (Ecom Subsidiary)

WASIAT Wahana Sukases Pertanian Terpandang (Local NGO)

WB World Bank

WCED World Commission on Environment and Development

WCF World Cocoa Foundation
WEF World Economic Forum
WTO World Trade Organisation

VAT Value Added Tax

VECO VredesEilanden Country Offices (Belgium NGO)

But the net effect on increasing scale, centralisation of capit vertical integration and diversification within the corporate for of enterprise has been to replace the 'invisible hand' of the mark by the 'visible hand' of the manage	rm ket
David Harvey, Organisation of capitalist production, 19	982

1. Introduction

Mars Sustainable Cocoa initiatives. Nestlé Cocoa Plan. Mondelēz Cocoa Life. Olam Grow Cocoa. Barry Callebaut Cocoa Horizon. Cargill Cocoa Promise. These are the sustainability initiative brands that have been promoted by the global cocoa-chocolate firms since early 2010s. The firm initiatives are branding to illustrate both intention and expectation from supporting cocoa communities in cocoa producing countries including Indonesia. Banding together under a sustainability label, the firms are responding to complex territorial issues that affects the supply chain practices and structure, particularly in the most cocoa producer region including West African countries and Indonesia. In addition to the territorial issues, cocoa production also dominated by the dispersed five million smallholder farmers whose livelihood depending on the fluctuated farm gate price and uncertainty of environmental deterioration challenges. Under the somewhat ambiguous notion of sustainability, the transnational firms have (somewhat) encouraged the adoption of sustainable farming practices across the supply chain actors under different global partnership projects as well as third party certification schemes.

The complex issues in the upstream cocoa production regions and emerging firm sustainability initiatives are linking to global cocoa price, in 2000 the global price as low as US\$ 1000/ ton and slowly increase price reached more triple by 2010, but recently the global price decline to less than US\$ 2000¹ following steady increase of cocoa production in Ivory Coast and Ghana. The low-price problem hit the smallholder farmers was initially following by the emerging social issue of child labour practices in West African countries including Ghana and Ivory Coast², in addition to unstable political condition such as the emerge of 2004 civil war was in Ivory Coast³. These issues are beyond the reach of influence for leading industrial actors who based in Europe and America. Disruption of these risk environments (eg. social issues, changing political regimes, and consumer group and civil society pressures) are challenging the long-term economic growth of cocoa-chocolate industries and requiring more coordination with stakeholders minimise their risks.

From the above perspective, these sustainability initiatives are more than just philanthropic outcomes or simply showcasing the firms perceived social responsibility. Aiming to sustain their competitiveness as well as a defensive response to the emerging socio-environmental issues, they

¹ Overview of cocoa supply and demand presented by Laurent Pipitone during the ICCO Cocoa Market Outlook Conference, London, 27 September 2016 (see Appendix A).

² Mali' children in chocolate slavery, published on 12 April 2001 [Retrieved on August 2017] http://news.bbc.co.uk/1/hi/world/africa/1272522.stm; International Institute of Tropical Agriculture (IITA) report in 2002, on Child Labour in the Cocoa Sector of West Africa: A Synthesis of Findings in Cameroon, Côte d'Ivoire, Ghana, and Nigeria. Croydon, [Retrieved on August 2017] http://www.aktiv-gegen-kinderarbeit.de/files/2008/05/iita-west-afric-child_labour-study-cocoa.pdf

³ The chocolate war erupt in Ivory Coast, published on 14 May 2004, https://www.theguardian.com/world/2004/may/14/rorycarroll; Ivory Coast crisis: Impact on the international cocoa trade, published on 9 March 2011, http://www.bbc.com/news/business-12677418

attempt to promote 'a sustainable cocoa supply chain' by improving both farm management and the farmers' livelihoods. Adopting a value chain approach, transnational cocoa-chocolate firms are using the market as a governing instrument, either by enforcing self-regulation of responsible sourcing or integrating third-party certification schemes (e.g., Rainforest Alliance, UTZCertified, and Fairtrade) into their supplier standard. With a scale beyond a single state or region, these initiatives contribute to increased coordination of upstream cocoa production networks and the reshaping of rural landscapes.

The aim of this study is to broadly explore the implementation and implications of firm-led sustainability initiatives as strategic instruments for increasing vertical coordination of the production network, but which also extend an influence 'horizontally' to the broader social and political landscapes where upstream nodes are located. Comparing the strategies of two lead firms, Mars and Nestlé, this study also seeks to identify the trajectories that emerge for farm-level upgrading by actors engaged in these sustainability initiatives, and how this may be reshaping new patterns of uneven development.

Acknowledging the integration of a sustainability notion into business practices raises basic questions; for example, why sustainability? How have cocoa-chocolate businesses integrated sustainability across the supply chain? Will sustainability also contribute to improved economic and social conditions for the upstream suppliers, the smallholder farmers? Or does it simply imply 'business as usual'? The economic and business scholars suggest that the adoption of a sustainability concept will both enhance economic growth and create a sustainable business (Porter and Kramer, 2011; Azapagic, 2003; Linnenleucke and Griffiths, 2010). Empirical studies have indeed found a positive correlation between economic and environmental performance (Wagner, 2005; Lo and Sheu, 2007) by integrating sustainability into regular business operations. Overall, most of the literature focuses on business management and ethics, as corporate sustainability delineates the different ways of integrating sustainability into business practice; for example, using it as a driving force to reconfigure economic value by creating social value in today's competitive global economy.

Meanwhile, the existing literature on Global Value Chains-Production Networks (GVC-GPN) emphasizes how different actors are coordinating chains (or networks) in different ways to capture greater value, and how they are becoming more competitive in the process. They recognize the markets' dominance, and the growing power of the transnational firms⁴ in terms of economic scale, which have influences far beyond a single territory and industry. But, their economic activities are not immune to the uncertainties that may lie beyond the coordinated supply chain. It may not be sufficient to simply organise and manage your direct supply chain to ensure long-term economic growth. To accomplish a long-term vison of ever-growing industries requires not only economic gain from commercial practice, but also being able to respond to social, political and environmental uncertainties. The sustainability notion of *not compromising the future generation's needs* fits well to the long-term vision of sustaining the supply chain and industry growth.

⁴ Transnational firm refers to a company that conducts economic activities in many countries

Through sustainability initiatives, transnational firms are voluntarily enforcing international socioenvironmental laws that has been lack of enforcement by the states including the biodiversity conservation standards⁵ and ILO convention on social issue (re. child labour practices). This voluntary action aims to minimise the supply risks and consumer trust as the firm integrated the laws into self-regulated responsible sourcing policy. Also, along with imposing the certifications schemes across the supply chain, transnational firms are also extending sustainability engagement across non-economic actors at different spatial scales. Despite increasing vertical coordination, the sustainability engagement also extends towards non-economic actors, such as in the form of multistakeholder 'roundtabling', i.e., providing equal standing at the negotiations table to enhance higher expectations of accountability, transparency and inclusiveness (Ponte, 2013). In effect, I will argue in this thesis that sustainability has become a mantra: (1) to increase vertical coordination with supply chain actors; (2) to develop tighter links with supplier partners; and (3) to open a negotiating space with non-economic actors; (4) to serve overall firms' interests but at the expense of cheaper productive capital supplied by the smallholder farmers. Indeed, the sustainability notion is becoming more popular and adopted as part of the firms' long-term strategic action to sustain industry growth.

To date, few studies have recognised the extended roles that lead firms play beyond their commercial sphere (Ponte, 2014; Barrientos, 2014; Selwyn, 2013; Gereffi and Lee, 2016). This study contributes to the debate surrounding the dynamic governance of GVCs and GPNs. The literature on the governance of GVC has been well documented, but greater focus is required on how lead firms seek greater value through industrial vertical coordination and upgrading. There is also a growing literature on how non-economic actors are influencing industrial governance (Giovannucci and Ponte, 2005; Raynolds et al., 2007; Barrientos et al., 2011; Ponte, 2014; Selwyn, 2013; Tallontire et al., 2011), thereby adding external pressure for the global brands to be more socially and environmentally responsible. These studies identified the dynamic modes of governance linking upstream agro-food productions that are beyond the interfirm industrial coordination.

An overemphasis of the vertical aspects of industrial governance in GVC theory has drawn criticism from the proponents of GPN approaches, who argue that global production and consumption processes construct a highly complex network structure that involves interaction of diverse actors across multi-scalar territorialities (Dicken et al., 2001; Henderson et al., 2002; Coe at al., 2008). Maintaining the leading role of global firms, this approach broadens industrial governance and highlights the interconnected roles of economic and non-economic actors. Following these intricate roles and relationships, the GPN approach perceives governance as a coordination strategy that is dependent and highly dynamic within different spatial networks. Thus, each lead firm may (or may not) apply more than a single coordination strategy reflecting their diverse independent capitalist capabilities, which will affect the (re) configuration of its production networks.

Yeung and Coe (2015) allude to the analytical causality of four dependent strategies for lead firms in the (re)configuring of GPNs based on different historical and geographical contexts: intrafirm

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⁵ Reinforcing regulations against sourcing from the forest conversion and deforestation areas, and adopted High Conservation Values (HCVs) standards.

coordination; interfirm control; interfirm partnerships; and, extrafirm bargaining. The first three strategies resemble the fivefold analytical governance as suggested by Gereffi et al., (2005), while, the extrafirm bargaining strategy is novel and remains under-explored. They argue that incorporation of an extrafirm bargaining strategy is critical for better understanding how the financial drivers of firm behaviour intersect with a wide range of non-economic issues. The intersection of these strategies is necessarily dependent upon the particular geographical contexts where the GPN touches down. Pursuant to the increasing adoption of a sustainability concept, this thesis specifically explores the incorporation of a sustainability concept into the extrafirm bargaining strategies of lead firms in the development of Indonesia's cocoa sector.

1.1 The emergence of sustainability initiatives in the cocoa sector

Speaking at the 2015 World Economic Forum in Davos, Nestlé CEO Paul Bulcke⁶ commented: 'Should business lead the social agenda? I would say very clearly, no, it should not lead the agenda, but it should be part of it. It's a nuance that's very important... You need long-term relationships...you are trying to link up with society in a positive way, and it makes business sense.'

Bulcke expressed this observation during a panel discussion on how businesses should address today's global, social and environmental challenges. It represents economic actors' expectations that their participation in meeting the sustainable development goals are simply part of the agenda, while at the same time seeking to build a set of long-term business relationships with society for positive outcomes. In effect, it is two sides of the one coin, i.e., to partially address social and environmental challenges, but also to achieve economic gain from engagement with the various challenges to sustain business opportunities. On the other hand, the traditional concept of corporate social responsibility is generally regarded as voluntary action, e.g., doing social good, but it is often disconnected from long term business strategies and regular operations. Corporate social responsibility simply presents the firm as a good citizen and does not necessarily serve their business interests.

The transnational firms' growing interest in sustainability in the cocoa sector has seen the notion gradually integrated into sourcing practices to ensure that the cocoa bean is sourced from the sustainable farming practices. The notion of the cocoa-chocolate firms participating in sustainable development in the context of sustainable cocoa farming practices implicitly linking to the economic aspect of supply risks rather than social and/or environmental aspects, as the CEO of Nestlé framing as positive long-term relationship with the society that will make a business sense. Linking to this economic aspect, the emerging cocoa-chocolate firm sustainability initiatives was following by slowly increasing cocoa price in 2000s, while growing investment and market expansion in emerging

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⁶ Nestlé Chief Executive Officer Paul Bulcke delivered a speech at the World Economic Forum (WEF) in Davos, Switzerland on Friday, January 23rd, on the role of business in society. His speech may be found at http://www.nestle.com/media/mediaeventscalendar/allevents/davos-wef-2015, [Retrieved, January 2017] and the quote from recent World Economic Forum meeting in Davos, Switzerland, published on 26 January 2015
http://www.foodnavigator.com/Market-Trends/Nestlé-CEO-Business-should-not-lead-the-social-agenda.

countries like in Asia, Latin America and Africa⁷. With the market expansion leads to increasing demand while upstream cocoa production dominated by the smallholder farmers who were facing declining yield because of the ongoing pest-disease infestation, soil deterioration, and climate change treats. Also, learning from the long record of previous experience among the cocoa communities that growing cocoa led to cocoa boom and followed by bust period after few decades. The recent bust period was experienced by Brazilian (Alger and Caldas, 1994) and Malaysian (Ruf and Siswoputranto, 1995) cocoa producers who both countries suffered from dramatic declining because of Witches Broom disease and Cocoa Pod Borer infestation, respectively.

Despite the uncertainty of supply security from the smallholder farmers and complex political-environmental, the complex supply chain structure within the cocoa producing countries also another challenge to deliver an effective sustainability interventions. While over the last decade, the growing presence of transnational traders in the producing countries offers opportunity for the local actors to improve global market accessibility and integrate into the global value chain, yet the lack of organisational and institutional capabilities has challenged this process of integration. In the other hand, the transnational cocoa traders and grinders who have established their local presence have expanded the functional capabilities and increase competition for the domestic value chains.

Following the recent re-structure of industrial cocoa production networks, the branded chocolate manufacturers slowly had distanced themselves from upstream production by applying outsourcing strategies then required a greater vertical coordination strategy to maintain their control and organise their production networks, to develop relationships with dispersed smallholder farmers. This growing trend of outsourcing strategy aligns with the emerging sustainability initiatives that focus on how to overcome the coordination and risk management issues, while also recognising the intermediate competent suppliers as key actors to connect the branded lead firms and the upstream cocoa production. Thus, to deliver sustainability initiatives, the transnational intermediate firms have been required to establish upcountry trading function and set-up their own sustainability divisions, to directly engage with smallholder farmers. Following these efforts to ensure a sustainable supply chain, few chocolate manufacturers (e.g., Mars, Hershey, Ferrero, and Lindt&Sprüngli) announced their commitment to sourcing 100% third party certified cocoa while also developing their own sustainability initiatives.

In addition to reorganising the supply chain structure, the lead firms' engagement in sustainability initiatives have also involved entering partnerships with a range of cocoa stakeholders to sharing resources to scale-up sustainability initiatives. They are funding public private partnership programs (PPPs) and (or) sub-contracting implementation to competent and experienced organisations. The lead firm's active contributions to such partnerships has meant they have been recognised as equal partners for delivering development programs. These different forms of sustainability programs are complementing lead firm market demand for sustainable cocoa and becoming an instrument to incentivise the scaling up of sustainability initiatives across the supply chain.

pinpoints three chocolate markets in the Middle East and Africa, published on 22 July 2015 --link

5

⁷ Analysis: Where is confectionary production moving, published on 22 August 2013 –link; The ones to watch: Euromonitor

Table 1.1 shows the major transnational firms' sustainability initiatives in the Indonesian cocoa sector since the early 2010s. These ongoing initiatives have common stated goals: to achieve a sustainable supply chain and to improve the farmers' livelihoods. With their closely-related emphasis on sustaining supply by improving productivity and quality, these objectives are noticeably also pursuing the firms' interest in sustaining the industries while at the same time attempting to improve smallholders' livelihoods.

Table 1.1 The ongoing transnational firm sustainability initiatives in Indonesia⁸

Sustainability Initiatives (Commencing Year)	Slogan and Objectives	Partners
Mars Cocoa Sustainability Initiative, MCSI (2011)	'Securing cocoa's future' Achieving a sustainable supply of high quality cocoa.	Non-government organisations, International and national research institutes, Local governments of cocoa-producing areas, local universities and vocational schools,
		certification bodies, and contracted suppliers.
Nestlé's Cocoa Plan, NCP (2011)	'Supporting farmers for better chocolate'	National research institute (re. ICCRI), contracted suppliers, various non- government organisations, and
	Improving cocoa farming livelihoods and cocoa quality.	national and local governments.
Mondelēz, CocoaLife (2013)	Thriving cocoa communities and sustainable supply.	National research institute (re. ICCRI), contracted suppliers, contracted nongovernment organisations, and national and local government.
Barry Callebaut, CocoaHorizon (2012)	Boosting farm productivity, increase quality and improve family livelihood.	Contracted suppliers and buyers, local governments, certification bodies, and non-government organisations.
Olam, GrowCocoa (2012)	Achieving sustainable supply chain and development of strategic partnership to improve the livelihood of cocoa farmers and their communities	Contracted buyers, Non-government organisations, and certification bodies.
BT Cocoa, BTCare program (2012)	Transforming cocoa farming into a viable and sustainable business for smallholders through market driven approach.	Contracted suppliers and buyers, national and local governments, and non-government organisations.
Cargill, CocoaPromise (2013)	Improving bean quality and yield, raise farm productivity and income and support farming communities.	Contracted suppliers, local governments, non-government organisations, and certification bodies.

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⁸ All website of firm sustainability initiatives, [Retrieved on January 2017] http://www.mars.com/global/sustainability/raw-materials/cocoa; https://www.barry-callebaut.com/sustainability/cocoa-sustainability; https://www.btcocoa.com/about-us/corporate-responsibility; https://www.btcocoa.com/about-us/corporate-responsibility; https://www.btcocoa.com/about-us/corporate-responsibility; https://www.btcocoa-promise-in-action

The global cocoa sector is characterised by an oligopolistic global market structure with a small number of lead firms (both chocolate manufacturers and grinders) sourcing from a dispersed supply base of more than five million of cocoa farmers. This suggests a highly uneven power structure throughout the GPN. The smallholder farmers from different producing countries will compete to generate economic rent from the efficient cocoa farm production and quality in the face of highly competitive downstream production networks. The voluntary nature of market incentives to encourage 'sustainable farming practices', as defined by the major firms, appear to be undermined by these uneven power relationships, as market premiums are often left to be negotiated between smallholder farmers and downstream buyers. As the dispersed and rather unorganised farmers are connecting to the contract suppliers, the actual negotiation process is often only between the lead branded firms and the contract suppliers.

Understanding the complexities of rural livelihoods in cocoa producing countries, in addition to the uncertainty of political commitment to support the cocoa sector and the lack of formal representation of smallholder farmers, the transnational firms are instead seeking support from the North based cocoa stakeholders and organisations to support their initiatives. Through the adoption of the somewhat ambiguous notion of sustainability, these activities have received both support and endorsement from international development agencies and other stakeholders. Concurrently, partnerships with the public actors and cocoa stakeholders, e.g., Cocoa Sustainable Partnership (CSP) and the Partnership for Indonesia Sustainable Agriculture (PISAgro) have been established in Indonesia.

Since 2006, CSP (a forum dominated by well-financed transnational firms and international agencies) is playing the leading coordination role in Indonesia, but has struggled to gain Indonesian government support. Meanwhile, the government has established a board affiliated with the Indonesian Coffee and Cocoa Research Institute (ICCRI), known as the Indonesian Cocoa Board (Dekaindo). CSP, a multi-stakeholder forum, has evolved from a communication platform into a coordination forum with growing number of members from different background and interests, not limited to transnational industrial actor but also supporting firms (e.g. agro-chemical companies, research institutes, and micro-finance institutions) and civil society groups. The nature of partnership requires active participation to not only support development of the cocoa sector, but also to gain legitimacy from the local cocoa stakeholders including the government. PISAgro, also a multi-stakeholder forum, was established with the support of the World Economic Forum in 2011. PISAgro specifically identified an exclusive position for the government as a key partner to strengthen the social and political legitimacy of the forum. The government was actively enrolled alongside another thirty partners from the private sector, international agencies and civil society groups. Both CSP and PISAgro have set out their roadmap of targeted goals to be achieved by 2020, primarily focusing on farm productivity and secondarily addressing social and environment aspects.

Most economic actors have a development strategy to sustain long-term economic growth. Linked to the unstable and dispersed upstream cocoa production, and the need to ensure a sustainable supply chain and improve smallholder farmers' livelihood, this strategy requires more than a narrow platform of corporate social responsibility. Upstream cocoa production is embedded in rural livelihoods, and these complex economic and social interactions become an environmental risk for lead firms. This is exacerbated by further disruptions emerging from local political conflict,

consequences of environmental deterioration, or from unfavourable policy implemented by the cocoa producing governments. These risk environments are generated by non-economic actors beyond the conventional reach of the North based industrial firms. Exposure to such risks are affecting the production networks, which are resulting in new strategies to capture gains from the growing industries and opportunities to become market leader in the emerging countries. Minimising such risks means expanding the coordination beyond the supply chain and business to business relationships. It requires broad engagement with a range of stakeholders to work together to minimise such risks. Accordingly, sustainability has become a key concept to ensure industrial actors' interest in long-term business development, whilst also contributing to, and responding to, various social and environmental issues.

1.2 The Global Production Network for cocoa

The cocoa-chocolate value chain is generally divided into four different segments of functional activities: (1) cocoa farm production; (2) trading; (3) cocoa processing; and, (4) chocolate manufacturing. These functional activities have mostly been undertaken separately since the colonial period. Whereas cocoa production is concentrated in tropical developing countries, cocoa-chocolate manufacturing and marketing are concentrated in the developed consuming countries. Due to this fragmented distribution, the intermediate trading actors play crucial roles in connecting the separate upstream and downstream activities. Within this cocoa value chain, the value generated by the associated economic activities is mainly concentrated near the end-market, which is dominated by a few transnational firms. Upstream cocoa production, which involves lower value activities, is more laborious and primarily managed by more than five million of smallholder farmers.

The geographical production and consumption of cocoa has a characteristic North-South pattern (Barrientos et al., 2007). The Ivory Coast and Ghana contribute approximately 70% of world production, while European countries, including the Netherlands, Germany, the United Kingdom, and the US, feature among the biggest importers. Cocoa production is characterised by small scale farming with more than five million farmers depending on this sector for their livelihoods. The manufacturing of chocolate products near sites of consumption reflects the industry's historical development that has been dominated by a few transnational industrial actors, primarily headquartered in Europe and North America. The innovative industrial production has been key to these firms remaining competitive, at the same time upstream farming development continues to lag behind technologically. Farmers continue to struggle with land degradation, low yields, and the high cost of maintenance required to sustain cocoa farms.

Data gathered from the annual report of the International Cocoa Organisation (ICCO) shows growth in production of cocoa bean and processed bean over the last fifteen years (ICCO, 2014), with significant growth of cocoa production in the major producing countries. Gradually, the dominant producing countries are engaging with industrialisation policies to process raw cocoa beans, and these countries are also becoming significant grinders of cocoa beans into intermediate products. Because fewer cocoa beans are traded globally, it is fuelling competition at the upstream level. European and North America -based transnational firms, including Barry Callebaut, Cargill, ADM, and Ecom are increasingly investing in cocoa grinding facilities adjacent to (and within) cocoa producing countries, thus diversifying and upgrading the export revenues. However, the final market remains relatively undeveloped in the producing countries. At the same time, the European and North

American based firms are rapidly expanding their market into other emerging countries across different regions, for example the Asia-Pacific region, Russia, the Middle East, South America and Africa.

As consumption slowly expands, the actors behind this expansion remain dominated by a small number of transnational cocoa-chocolate firms (both cocoa grinders and chocolate manufacturers). The increasing concentration amongst intermediate actors (cocoa processors) has resulted in vertically integrated processing and trading segments, through mergers and acquisitions (see section 4.1). While global traders are becoming bulk processors, the well-established cocoa processors are also diversifying their processing activities into the production of couverture (industrial) chocolate. The latter involves the production of a wide range of chocolate products in addition to the intermediate cocoa products of cocoa butter, powder and paste (see Figure 4.5). By establishing vertically integrated processing facilities, global processing-trading firms are putting competitive pressure on small-scale domestic processors from cocoa origin countries such as Indonesia.

Since the early adoption of cocoa outside the origin region of amazon forest in Latin America, the cocoa cultivation has been recognised by the emergence of new 'pioneer fronts', that defined as large group of immigrants rapidly clearing tropical forest to plant cocoa (Clarence-Smith, 1996). Clarence-Smith (1996) argued that the from the Maya lands of pre-Columbian America to Western African countries and Southern Sulawesi, the emergence of cocoa pioneer fronts because of the social availability of forest to transform into cocoa farms. The looser regulation on the forest protection and mobility of labour through inter/intra state migration were played crucial part of emerging 'pioneers fronts' across the spatial scale and further to shift cocoa producing region from the Amazon basin region to West African countries (Clarence-Smith, 1996). Currently, only Ghana and the Ivory Coast account for 70% of global production, while approximately 10% is produced by Indonesian farmers (ICCO, 2014).

Within the downstream industry, the chocolate manufacturers have maintained an integrated production network for highly differentiated products while largely outsourcing the production of intermediate cocoa products to independent suppliers. These suppliers have conventionally maintained several cocoa processing facilities close to chocolate manufacturing sites (ie. near consumer markets). Over a period of time, the intensive commercial relationship between the chocolate and cocoa industries has improved the processed cocoa supplier capability. The processed cocoa suppliers have also invested in research and development for efficient processing function through computerised processing machinery as a response to meet the complex processed cocoa demand from the chocolate manufacturers. This commercial interaction has strengthened the cocoa processors capability and competency on supplying complex and sophisticated cocoa-based products. Fold (2002) describes the relationship between the competent suppliers and dominant buyers as a 'turn-key' relationship, suggesting that these processor/suppliers have become more concentrated and able to exert nearly as much influence over the value chain as the chocolate manufacturers themselves. By 2007, most of the major chocolate manufacturers (e.g., Nestlé, Cadbury and Hershey) had dismantled their own cocoa processing facilities and entered into negotiated long-term supply agreements with these competent suppliers, at the same time allocating more resources to the development of their core-competences (most notably branding and product innovation).

Prior to 2010, transnational trading expanded into developing countries, following the market liberalisation for most of their agricultural crops associated with a weakened role for the state in managing upstream production and capturing the export revenue from the high-value of tropical crops. Prior to this, a resource-based development strategy emphasized the significant contribution of smallholder farmers in generating national revenue. This meant it became the object of government control, particularly from dominant producing countries such as Ivory Coast and Ghana. However, as the next largest producer, the Indonesian cocoa sector received limited state interest and was relatively unregulated by government before the 2000s. A combination of a relatively liberal trading market and high global demand for cocoa nourished the growth of competitive domestic trading functions. In seeking economic rent, the international trading firms slowly established their presence in Indonesia and became competitive actors alongside the local trading firms, establishing up-country buying stations in most of cocoa producing regions, particularly in Sulawesi.

More recently, following the growing market and the branded manufacturer investment of chocolate industry in the Global South, the Indonesian government (like the major West African cocoa-producing countries) has attempted to intervene downstream in the cocoa sector. The Indonesian government publicly announced the encouragement of downstream cocoa industries (Ministry of Industry, 2010), following by implementing a tariff barrier (an export tax) in 2010. It aimed to become a highly-integrated cocoa producing and processing country. By limiting the export of raw cocoa bean, the government incentivised investment in cocoa processing. However, the growing investment in this segment has been dominated by transnational firms both through new investments and by acquisition. For example, Cargill and Olam entered functional upgrading after building cocoa processing facilities and becoming vertical integrated firms, while Petrafood disintegrated and sold their processing facilities to Barry Callebaut, and Ecom acquired Armajaro trading. These acquisitions and new investments by transnational trading firms resulted in an increasingly concentrated cocoa processing segment with a small number of major processors, with vertically integrated production networks with both cocoa trading and processing functions.

These developments, as well as changing the domestic chain structure, slowly eliminated the international trading function as a discrete activity, as it becomes more integrated with the processing function. Globally, the processing segment became more concentrated, with approximately three quarters of global processed cocoa produced by eight processors (Barometer Consortium, 2015). Forty per cent of the global chocolate manufacturing segment was now dominated by six major transnational firms. With the cocoa value chain increasingly dominated by two sets of downstream actors (processor-traders and manufacturers), a power asymmetry has evolved that tends to favour a small number of powerful buyers and continues to weaken the bargaining position of the five million of smallholder farmers.

1.3 Indonesian cocoa sector

From a territorial perspective, the Indonesian cocoa sector has developed rapidly during the last decade, and has captured the attention of the state, which earlier attempted to downstream the sector by reforming trade policies and providing incentives to invite foreign direct investment. At the same time, transnational firms have become more involved in upstream activities through delivering a range of extension services and building vertical coordination with the smallholder farmers. They have created a market for sustainable cocoa by incentivising the adoption of voluntary sustainability

certification schemes and implementing mainstream cocoa farm extension services for farmers. The dynamic role of both political and economic actors in the development of the Indonesian cocoa industry and their increased attention to upstream sustainability interventions suggests that lead firm strategies are increasingly affecting various aspects of rural and industrial development.

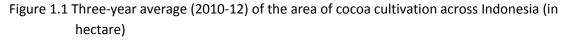
1.3.1 State role in cocoa development

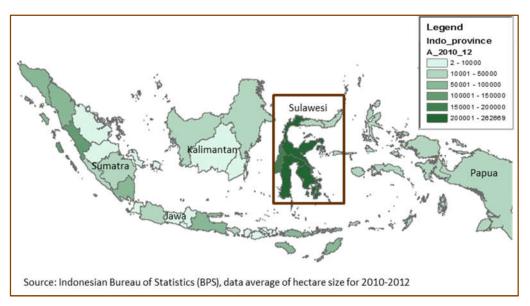
Indonesia has been a theatre of cocoa boom and bust since the colonial period, with geographic shifts of growing and trading activities, and ever-changing actors. Although, the recent development of upstream cocoa development in Sulawesi region marked a 'pioneer fronts' scenario, the abundant forest and adequate supplier of labour whereas the local migration to the Central and Southeast Sulawesi regions was dominated by the Bugis⁹ farmers from the populated Southern region. However, the emergence cocoa pioneer fronts were not new in Sulawesi region (Clarence-Smith, 1996). Cocoa was first introduced by the Spanish into North Sulawesi late in the 16th century, at a time when Manila was the main market, frequent pest and disease outbreaks have diminished farmer interest in continuing to grow the crop. During the comprehensive Dutch colonialization of Indonesia in the late 19th century, the crop was reintroduced into Java in the form of large cocoa estates owned by private Dutch firms. To support cocoa sector development, the colonial planters established a cocoa and coffee research centre along with other cash crop research centres, e.g., sugar cane, natural rubber, coconut, tea and kina. During the 1950s, following Indonesian independence, most of the private plantations became state-owned plantations. A lack of investment and poor management resulted in the new government having little impact on agriculture development, but rather showed greater interest in extractive mineral-based resources, which appeared more profitable than investment in estate crops. In a very short period of time, the development of the cocoa sector went backwards.

Although the Indonesian government plays an important role to open forest accessibility for the pioneer fronts, yet the government had limited interest to develop upstream cocoa development. During the collapse of oil price in 1980s, the government attempted to develop cash crop sectors to generate short-term export earnings from the lucrative global market including cocoa to minimise the dependency on fuel-based revenue. The central government introduced two stages of cash crops program: (1) The rehabilitation of export crops (PRPTE) program and, (2) the development of special areas (P2WK) program. Despite these efforts, the farmers showed limited interest in adopting cocoa production (Ruf and Lancome, 2004), in addition to low global market price. Not until the collapse of Malaysia's cocoa plantations in the 1990s, this was a pivotal moment when growing nearby market demand encouraged expanding cultivation across Indonesia. This led to the spontaneous and voluntary adoption of cocoa production in Sulawesi, become the major cocoa producing region as well as defined Indonesia as the third largest cocoa producer after Ivory Coast and Ghana (Figure 1.1 shows the major producing provinces and Figure 1.2 shows the dynamic development of cocoa sector in Sulawesi region).

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⁹ Bugis, also called Buginess people are the major ethic group reside in Southern Sulawesi (Celebes Island) region and extensively has migrated to less density regions within Sulawesi island.





This spontaneous adoption of cocoa originated in the relationship between farmers and traders, rather than as a direct result of government policy. The local traders and collectors played an important role in establishing the local market, as well as in knowledge exchange that enabled the smallholder farmers to establish cocoa farms. However, the diaspora of the cocoa boom in Sulawesi was more widespread than in East Kalimantan that closer to the export market (Sabah, Malaysia), because of suitable accessible forest in Southeast and Central Sulawesi, the labour migrants from populated Southern region, and connected the local market to export networks in Malaysia and Singapore. Access to abundant new frontier land, along with family networks, facilitated knowledge exchange among the migrants and the existing farmers (Ruf and Lancon, 2004: 175). Subsequent to the rapid growth of cocoa farming areas in the South, Southeast and Central Sulawesi provinces (Figure 1.2), within less than twenty years Indonesia became the third largest producer of cocoa beans after the Ivory Coast and Ghana. However, deterioration of forest rent from the 'pioneer period' creates basic problems of cocoa economies, especially for the industrial actors who have expanded the market investment and manufacturing facilities through Asia region, including Indonesia and expected supply security from the Sulawesi farmers particularly. It was only in 2008, that another large-scale intervention in cocoa farming was reintroduced by the government, through the GERNAS program that provided various direct supports to cocoa smallholders. In 2010, the Indonesian government introduced a new agenda of economic development, as it attempted to follow in the footsteps of neighbouring countries (Singapore and Malaysia), which had already developed downstream cocoa industries.

1.3.2 Ongoing development challenges

Cocoa production across the producing countries is dominated by smallholder farmers. In Indonesia, 90% of total annual production is produced by such farmers, with the remainder produced by state

and private-owned plantations. The expansion of cocoa farming for more than three decades has resulted in an estimated 1.66 million hectares being planted with the crop, 60% of which is located on the island of Sulawesi (Ministry of Agriculture, 2014). But, production has remained stagnant in Sulawesi since 2005 (Figure 1.2). The ongoing infestation by cocoa pod borer *Conopomorpha cramerella* (*Snellen*), black pod disease *Phytophthora palmivora*, and vascular streak dieback *Oncobasidium theobromae* (McMahon et al., 2015), together with ageing cocoa trees and soil depletion, has negatively impacted farm profitability. The yield continued to decline despite the efforts to restore the farm productivity (e.g. various donor programs such as SUCCESS Alliance, AMARTA, and the Gernas program), while available forest resources for further expansion were also scarce. The smallholder farmers found themselves facing a 'bust' phase that could only be alleviated by a shift in production, i.e., introducing new crops, simply abandoning their farms, or seeking alternative livelihoods.

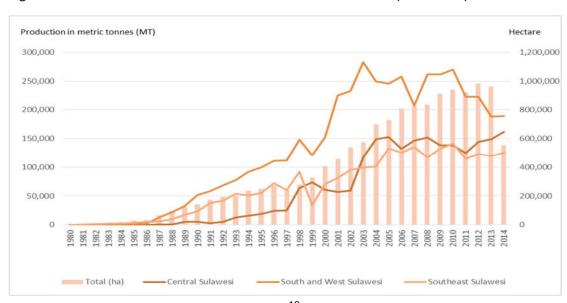


Figure 1.2 Growth of Cocoa Production on the Island of Sulawesi (1980-2014)

Source: BPS, Indonesian Bureau of Statistics 10

Farming is the prime livelihood for most of the rural communities in Sulawesi, with cocoa farming the major source of income for those households engaged in its cultivation. The cocoa farming system in Sulawesi is a mix of monoculture and intercropping depending upon the geographical location. Households often own multiple plots whose combined area is generally less than two hectares. Although every individual farmer employs a different strategy to minimise farming risk, farm production remains a risky business, as farmers are exposed to the uncertainty of outbreaks of pest diseases, weather disruption, input supply uncertainty, and market-related risk (Hazell, 1992; Moschini and Hennerssy, 2001). Considering these risks, farming has become less attractive for rural households, urging them to seek alternative livelihoods that may alleviate their vulnerability. In addition to the current development of a downstream industry, this stagnated production

¹⁰ Indonesian bureau of statistic for agriculture and mineral, sub-section estate crops, [Retrieved, October 2016] http://www.bps.go.id/linkTableDinamis/view/id/839

challenges the sustaining of the emerging cocoa industry not only in Indonesia, but also across the Asian region.

1.4 Contribution to Global Production Network Theory

During the last two decades, the global value chain analysis framework has attracted the interest of a range of powerful multilateral institutions and development agencies. This analytical framework offers systematic ways to enhance the economic actors' competitiveness and to integrate into the global economy. Notwithstanding, the framework tends to emphasize interfirm governance strategies in generating greater value from various industrial upgrading processes, giving less attention to the external actors' roles and their influence over how value is generated. Broadening the interfirm governance approach, Yeung and Coe (2015) propose a dynamic theory of global production networks. Structured upon the growing economic power of the transnational firms, the theory maintains leading actor-centred analysis, and provides novel insights into why and how the organisation and coordination of GPNs varies within and across different industries, sectors and economies.

Yeung and Coe (2015) introduced four sets of independent variables (so called casual drivers) that are interrelated and are re-shaping firm specific strategies. These are the three competitive dynamics-i.e., market imperatives, cost-capability ratios, and financial discipline, along with industry-specific risk environments. In the context of cocoa production networks, such networks are dominated by North-based transnational firms that enjoy stable and regulated business environments compared to most cocoa-producing countries' environments. However, with the growing market trending towards the Global South, and the functional upgrading occurring within the cocoa-producing countries, investment by transnational firms is facing relatively new risks, despite their capacity to manage the three competitive dynamics. Attempts to preserve long-term business strategies require a manageable and sustainable supply chain. By adopting the sustainability concept, the transnational firms are delivering a range of upstream interventions beyond their commercial sphere not only to overcome social and political instability, but also to manage other risks in order to sustain their current investments.

According to Yeung and Coe (2015), the wide range of non-economic actor backgrounds have diverse rationalities that will drive them to engage differently with production networks and to reshape inter-firm governance and the strategies of lead firms. The *extrafirm bargaining strategy* provides an analytical nexus on how economic activities intersect with noneconomic issues, in this case social justice, environmental deterioration and political instability. Yeung and Coe define the strategy as a contested two-way process of negotiating and accommodation between firms and noneconomic actors, the aim being to reach a mutually satisfactory outcome in creation and the capturing of value through global production networks (2014: 51). However, it is unclear how this process can achieve such an outcome while an individual firm approach to a non-economic actor may draw negative publicity. Considering the transnational firms' value chain intervention involving sustainability initiatives, this study seeks to discern how this symbiotic relationship is developing within the cocoa-chocolate industry. This will of necessity, require exploring and identifying different approaches to negotiating processes specifically related to upstream interventions in order to sustain the current expansion of downstream economic activity.

Regarding the motivation behind the extra firm bargaining strategy, Yeung and Coe (2015) suggest three interrelated objectives: (1) seeking market power; (2) securing proprietary rights; and (3) gaining social and political legitimacy. These three objectives indicate how to strengthen and enhance the lead firms' positions, which are linked to their core-competencies. While extra-firm bargaining has conventionally occurred in downstream segments of the chain, this study seeks to identify the main objectives underpinning increasing upstream economic engagement, and how these objectives relate to the possibility of minimising the upstream risk and value capturing from coordinated production networks.

Having observed that integration with GPNs is often driven by gain, Coe and Yeung (2015) argue that value capture is the most important dimension in developmental terms. 'Value capture' refers to the ability of individual firms to retain their surpluses by incorporating and exploiting various resources, e.g., labour, capital, technology, and knowledge into their economic activities. In the context of cocoa production networks, value capture has primarily concentrated on downstream production activities. This segment captures more value through near market innovation and production efficiency, while more laborious and low value upstream activities are often externalised to millions of smallholder farmers. However, due to the uncertainties surrounding the environmental, social and political issues on the upstream activities, this segment has attracted the interest of the transnational firms. This engagement is increasingly framed by notions of sustainability, this study will explore how voluntary sustainability initiatives are linking to value capturing and supporting the downstream activities.

This asymmetrical value capturing between the downstream and upstream actors has become the major argument in GVC and GPN literature, specifically on the ongoing production and contribution to diverse patterns of uneven spatial development. The emerging upstream interventions, however, remains open to understanding how value creation is captured through firms' sustainability initiatives. The direct involvement of transnational firms in the implementation of these initiatives has immediately enrolled smallholder producers in the global production network and consequently subjected them to increased global economic competition. With the transnational firm presence near the cocoa-producing region occurring in parallel with the government's intention to industrialise the cocoa sector, the concept of capturing value is useful for understanding the relationship between the vertical and horizontal forces that drive economic rural development. This study focuses on transnational firms' upstream economic activities, explores the development outcomes of value creation from the upstream segment, and attempts to fill the gap in the well-documented literature of industrial economic activities.

1.5 Research questions

This study broadly examines to what extent the sustainability concept has been inserted into the GVC-GPN, specifically in the Indonesian cocoa sector. It is particularly focused on the upstream segments of cocoa production networks. Drawing on the global production network perspective of multi-dimensional and multi-scalar analysis, this study addresses the following three interrelated questions:

1. How are transnational cocoa-chocolate firms defining, negotiating and governing sustainability across the global production network?

- 2. How is the Indonesian government responding to increasing upstream sustainability-linked interventions throughout the production network?
- 3. What are the trajectories of the sustainability initiatives for smallholder farmers and who captures the value of upgrading at the farm level?

Despite the vertical market coordination of sustainable cocoa, the first question looks specifically at extrafirm bargaining coordination through firm sustainability initiatives. The implementation of these initiatives has been diverse, depending on the individual production network structure and characteristics of the firms. This was not only in the sense of their position in the global production networks, but also involving the ownership, organisational structure, and product portfolio. The first question refers to the sustainability initiatives of two dominant chocolate firms, the family-owned business Mars Incorporation, and the Swiss-based shareholding corporation Nestlé S.A. Although both firms enjoy a dominant global market share, they have different characteristics - derived from historical and economic perspectives - that motivate the certain extent of engagement in cocoa sustainability initiatives.

The GVC approach has tended to over-emphasise value generation through industrial inter-firm governance and the upgrading process. This generalisation of industrial governance has drawn criticism from some GPN scholars who argue that the organisation and coordination of GPNs (or GVCs) are significantly diverse within and across different industries, sectors and economics (Yeung and Coe, 2014). The GPN approach facilitates the conceptualisation of the firm sustainability notion into the extrafirm bargaining strategy. This extrafirm bargaining strategy from the GPN perspective conceptualises as extra endeavour to not only minimises risk and uncertainty, but also elicits greater value from the complex upstream activities. Most economic activities - particularly those of the agrofood industries - intersect with noneconomic issues that involve diverse extrafirm actors (see Yeung and Coe, 2014).

For the second question, I use a case study based upon the Indonesian cocoa sector to demonstrate that cocoa, one of the country's strategic commodities, has also been subject to state intervention, and this highlights the fact that the political dimension plays an important role in GPN dynamics. Increasing upstream activities is not only filling the regulatory gap on integrating the international conventions on human rights and biodiversity conservation into sourcing policies, but also signals the increased up-country presence and vertical coordination among the transnational leading firms. Accordingly, putting pressure on Indonesia's domestic firms to remain competitive. The firms' initiatives are challenging the traditional government role of public service delivery, and it is unclear how the government can respond to these initiatives while at the same time attempt to preserving its interest on capturing the added value from vertically integrated domestic production networks.

Finally, what will be the trajectories of value capture resulting from the firm sustainability initiatives for the rural smallholder farmers? By unpacking the implementation of sustainability initiatives of two lead firms provides, I will develop an understanding about the extent to which initiatives affect participating smallholder farmers. The third question will contribute to previous debates of industrial and uneven development, as the value capture embedded in sustainability initiatives were following by different type of farm-level upgrading process.

1.6 Structure of thesis

Following the introduction to the thesis, Chapter 2 develops a theoretical framework to inform this study. The chapter reviews contemporary theories of global production networks-global value chains and how the emerging concept of sustainability is integrated into corporate business practices. Despite ongoing debate over the elusive meaning of the term, the adoption of sustainability concepts through the value chain not only broadens the economic actor roles beyond the economic domain, but is also reconfiguring the structure of cocoa-chocolate production networks.

Chapter 3 explains the methodologies applied to explore the changing nature of firms and their production networks in the cocoa sector. The study is based on a case study of two market leaders, Mars and Nestlé. It uses both firms' production networks as the unit of analysis, with data primarily collected from interviews undertaken across the firms' supply partners and stakeholders. I also explain other methodologies, including content analyses of firm publications and online media-related reports, the collection of secondary information from legitimate organisation and media websites, my engagement as a participant-observant in various multi-stakeholder meetings, workshops and conferences. The application of different research methods enhances the validity of the research findings, and triangulation is introduced to generalise reliable findings from the analyses of detailed information based on individual firm's stories and experiences.

Chapter 4 overviews global dynamics in the development of cocoa-chocolate industries with a specific focus on emerging market development in the Asia pacific region. Linked to this development, I discuss the leading roles of chocolate branding manufacturers in the (re) configuration of global cocoa-chocolate production networks that has resulted in more concentrated downstream networks and vertical coordination across the supply chain. Responding to this development, further discussion focuses on the capitalist competitive dynamics affecting lead firms, and how these are affecting their capability to manage the risk environments in order to sustain their global market dominance. These causal drivers have led to different strategies applied by Mars and Nestlé to govern and organise their production networks, and to manage upstream risks through extra-firm bargaining.

Chapter 5 presents the increasing market demand for 'sustainable cocoa' after the lead firms announced their public commitment to source cocoa beans from sustainable sources, and how this has affected their supply partners. This is followed by a presentation of different governance strategies and the state of sustainability initiatives in Indonesia, as implemented by Mars and Nestlé. The chapter compares both firms' engagement in domestic sustainability initiatives that are accompanied by increasing vertical coordination with the upstream actors and extension of horizontal coordination with the extra-firm actors.

Chapter 6 discusses how the state is responding to the emerging firm sustainability initiatives, while transforming and industrialising the Indonesian cocoa sector. This chapter explores the national perspective of the dynamic role of extrafirm actors in the GPN, and how the Indonesian government has responded to the ongoing sustainability intervention by introducing cocoa affiliated policy and regulation. The territorial based analysis discusses the dynamic interactions between the changing policy incentives and the orientation of transnational firms, which collectively influence the local production network structure. This chapter will identify the strategies and initiatives undertaken by the Indonesian state as a response to increasing upstream interventions and the growing dominance

of transnational trading firms in supply production and distribution. This chapter shows how the government is attempting to protect a few group of domestic firms against the more competitive transnational firms.

While the previous chapters have shown the implication of sustainability initiatives on configuring the cocoa production network, Chapter 7 focuses on farm level trajectories and value capture as types of upgrading are introduced to the smallholder farmers. This focuses on different forms of farm-level upgrading under two distinctive programs: the increasing adoption of certification schemes and the Mars CDC-CVC business extension model. Unpacking different forms of upgrading introduced from both interventions emphasises the significance of capitalist capabilities in obtaining the upgrading and continuing participation in the lead firm production networks.

Following the discussion on value creation and capture at the farm-level, Chapter 8 discusses further implications of value capture on regional development. Focusing on the island of Sulawesi, this chapter analyses the interplay of value trajectories and regional asset accumulation, between the state-led strategic coupling via industrial policy and transnational firms' capitalist decisions via improving economic scale-scope of production. To understand the aggregate effects of value capture on strengthening Sulawesi' supply-based assets, this chapter structurally identifies the increased role of transnational firms on improving regional assets and further contributing to regional development. This chapter highlights the increasing regional dependency on transnational forms and emerging patterns of uneven development, and the exclusion of less competitive actors from cocoa production networks through lead firm sustainability initiatives. Finally, the conclusion highlights the link between the lead firm sustainability initiatives and emerging pattern of uneven development.

2. Theoretical framework: Corporate Sustainability and Global Production Networks (GPNs)

The focus of this study is upon on the emergence of cocoa-chocolate transnational firm engagement with notions of sustainability in the contemporary world economy. This literature review identifies the growing interest in sustainability as a governing concept, and the recognition of transnational firms as key partners contributing to sustainable development. Despite the debate inspired by the elusive meaning of the term, the adoption of the sustainability concept into the emerging firms' upstream value chain interventions has extended the economic actors' roles well beyond the economic domain. From a development perspective, value chain analysis has emerged as a prominent contemporary analytical framework for understanding power relationships and value capture that can result from involvement in the global economy.

Over the last two decades, this framework has been adopted by a range of powerful multilateral financial institutions and international development agencies (UNCTAD, 2013; Neilson, 2014; OECD and WB group, 2015). In addition, this period has seen the growing power of civil society groups' attempts to incorporate private regulations and voluntary sustainability certification schemes into the GVC-GPN. Their interventions have led to increased external pressure to address socioenvironmental issues. Thus, in addition to conceptualising the integration of the sustainability concept into production networks, this review seeks: (1) to identify the limitations of the overemphasis on industrial governance and economic upgrading in the GVC literature and the need to accommodate growing horizontal forces; and (2) to contextualise current understanding of the upstream extra-firm bargaining strategies employed by lead firms to facilitate sustainability.

2.1 Sustainability and Corporate Social Responsibility (CSR)

2.1.1 Sustainability as a concept

Sustainability reflects to the idea of sustainable development that was articulated in 1987 as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. While the term sustainable development has been criticising as an oxymoron, or at best as ambiguous and distorted definition (Johnston et al., 2007), the growing interventions framing into 'being sustained' by a range of actors, thus the term also has become a synonymous with 'sustainability'. They argued that Sustainable Development perceived as vehicle to perpetuate the corporate and institutional interests whilst simply framing the impression of adherence on environmentally-sound principles, thus this weaken interpretation also extends to sustainability.

With increasing interests from the corporations to incorporate sustainability idea into their organisation and eventually considered as strategy to drive the economic growth (Baumgartners and Ebner, 2010) that recently called corporate sustainability. The concept of corporate sustainability has reoriented the transnational firms' interest towards the broader aspects of their responsibilities that beyond social dimension and adding economic and environmental dimensions, together they are integrating into business activities. Because the broader context invites greater openness for interpretation, the adoption of the concept is moving away from simply engaging with the altruistic aspects of corporate social responsibility or initial idea to sustain the earth carrying capacity.

Recognising the importance of the economic actors' contribution to sustainable development, in 1992 the Secretary General of the United Nations Conference on Environment and Development (UNCED) created a forum called the Business Council for Sustainable Development (subsequently renamed the World Business Council for Sustainable Development (WBCSD). The global acknowledgement that a firm has a responsibility to pursue 'sustainability', once regarded as the domain of philanthropic individuals and organisations, marked a shift within mainstream corporate social responsibility (CSR) towards broader aspects of responsibility to the economy, society and environment. The firm's interest in the concept of sustainability was linked to the earlier idea of 'sustainable development', which had a nuanced longer term vision of meeting present needs without compromising future needs. From a business perspective, this was soon reflected in a desire to sustain both current and future business needs.

Nowadays, the sustainability concept has become popular among business leaders competing for international and regional sustainability awards that recognise their commitment to 'sustainable business practices'. For example, since 2010, the World Economic Forum (WEF) has been seeking 'new sustainability champions'. Recently, ASEAN awarded ASEAN corporate sustainability awards to companies that had demonstrated and promoted a sustainable development agenda. Such awards recognise the economic actors' endeavours to implement 'environmentally (sound) sustainable business practice' as part of their core business competencies in the absence of well-developed and enforced international standards for environmental and social issues.

2.1.2 Sustainability in corporate practice

Historically, the concept of sustainability was driven by concern over the limits of the earth's carrying capacity to support the ecosystem (Meadows et al., 1972). As the concept became popular, almost every project or initiative adopted the term, partly because its value was open to definition rather than it being an empirical concept. Its value can be different for individuals, organisations, or communities (Harvey 1996). Banerjee (2008:64) has argued that the discourses surrounding sustainable development are becoming increasingly corporatized. The notion of sustainability is increasingly constructed, manipulated and represented in popular business media in addition to the academic literature. For example, the Dow Jones report on Sustainability Group Index, based on a survey of 500 companies, identified corporate engagement in sustainability as aimed at increasing long term shareholder value by integrating economic, environment and social growth opportunities into their corporate strategies (Banerjee, 2008). Moreover, he argues, sustainable development discourse has shifted focus to corporate sustainability to sustain (long term) growth opportunities, displacing the initial focus from caring about planetary limits as stated in the Brundtland report (Banerjee, 2003). Recognising the importance of the corporate contributions to reifying the path to sustainability using market exchange to achieve global sustainability implied promoting sustainability as business as usual, rather than fundamentally changing business practices to work within social and ecological limits.

The adoption of sustainability by the corporate actors in the cocoa-chocolate sectors is often referred to as a cocoa sustainability program or initiative. The former Hershey vice president director of CSR (Long, 2008: 317) argued that,

'CSR is not synonymous with sustainability, which may form just one part of a company's broader CSR program, although it should be a key ingredient of the overall policy. Instead the strategy sessions made it clear that sustainability links most directly to two key areas of Hershey's business: supply-chain management and environmental stewardship practices, both of which are common to many other businesses'.

Although this actor suggests that the adoption of sustainability should fall under CSR, recently the sustainability concept has become more integrated with firm value principles, such as 'well-being' (Mondelēz) or 'creating shared value' (Nestlé), or a direct social response to supply chain practices (Mars and Lindt &Sprüngli)¹¹. It suggests that the adoption of the sustainability concept means going one step further than the altruistic concept of social responsibility.

Within the global cocoa sector, the concept of sustainability has gained the interest of various industry stakeholders. Multi-stakeholder partnerships have been established to promote the integration of the concept into business practice, bridging the chocolate consumer and supply countries. The establishment of a Roundtable for Sustainable Cocoa Economy (RSCE) in 2007 aimed to build a consensus of defining a measurable concept to achieve a sustainable world cocoa economy with the support of the major European cocoa consuming countries (most notably the Netherlands), and cocoa producing countries (particularly Ghana). The main agenda for a sustainable world cocoa economy included establishing sustainable supply chains from cocoa production to consumption, and building a collaborative institutional framework to promote sustainable practices across geographical scales.

Transnational cocoa-chocolate firms have been developing sustainable (responsible) sourcing standards and codes of conduct since early 2010. Voluntary enforcement has extended to other supply chain actors, despite having implemented self-design sustainability initiatives (as presented earlier in Table 1.1). Before officially launching their sustainability initiatives, Mars engaged with a range of sustainability-affiliated partnerships and programs in an attempt to address cocoa supply challenges (Shapiro and Rosenquist, 2004). According to Mars, partnerships offer various ways to engage with government, research and development institutions, and conservation agencies. They encourage the development of a holistic and integrated approach to both environmental and economic sustainability, including a commitment to private sector-led growth in rural areas. The usage of the notion of sustainability has allowed firms to expand their interaction and to engage with noneconomic actors, with a specific aim to address supply challenges. A similar notion of partnership approach was proposed by the President of Blommer chocolate who stated: '[W]hat we created was a sustainable commercial system, linking the end buyer with the farmer, to drive value for both farmers and end users' (Blommer, 2011: 22). Linking to the framework of 'commercial sustainability', he suggested direct markets between smallholder farmers and cocoa traders and processors would enable farmers to capture greater value.

http://www.mondelezinternational.com/well-being; http://www.Nestlé.com/csv; http://www.marschocolate.com.au/sustainability/sustainability/; http://www.lindt-spruengli.com/sustainability/ [Retrieved on January 2017].

From these lead firm perspectives, the primary motivation driving engagement with sustainability was to ensure social responsibility (or social legitimacy in the minds of consumers) and to overcome supply challenges. This appears to imply a shift away from the original concept of sustainable development, and its concern over the earth carrying capacity. As a concept that has been integrated differently with the business culture at different levels of engagement, this growing recognition has been incorporated into firm supply chain strategies. Not only from the incorporation of international labour and environmental law into the industrial sourcing policies, but also in the form of delivering various sustainability programs.

2.1.3 Debating corporate sustainability

The UN's endorsement of transnational firms as key partners to achieve sustainable development goals opened a window of opportunity for firms to gain positive recognition and make contributions to the UN agenda that was previously introduced through a public policy agenda. As the concept became more popular, various interpretations emerged of the terms "sustainable" and "development" (Elliott, 2012; Williams and Millington, 2004). Some critics commented on how the term had been used in a variety of ways depending upon the organisations' interest in justifying or embellishing their actions, and rendering it as an oxymoron (Johnston et al, 2007: 60; Redclift, 2005:213; Christen and Schmidt, 2012; Connelly, 2007). However, in the commercial sphere, the concept of corporate sustainability continued to be linked to the popular Brundtland slogan (WCED, 1987) referring to the enduring satisfaction of human needs across generations (Banerjee, 2008); Dyllick and Hockerts, 2002; Bansal, 2005; Sharma and Henriques, 2005).

Literature focusing on business management and ethics has explored the integration of 'sustainability' within business culture (Banerjee, 2008; van Marrewijk, 2003; Wilson, 2003) and the development of distinct criteria and strategic approaches to the adoption of corporate sustainability (Dyllick and Hockerts, 2002; Benn et al, 2007; Young and Tilley, 2006; Baumgartner and Ebner, 2010; Porter and Kramer, 2011). Further studies then focused on developing normative assessment tools for corporate sustainability such as effective measurement and reporting (Knoepfel, 2001; Wheeler and Elkington, 2001; Salzmann et al, 2005; Atkinson, 2000; Perrini and Tencati, 2006; Burritt and Schaltegger, 2010), prescriptive guidelines for sustainable businesses (Azapagic, 2003; Linnenluecke and Griffiths, 2010; Orlitzky et al., 2011), and empirical analyses of the positive correlation between economic and environmental performance (Wagner, 2005; Lo and Sheu, 2007). Overall, these contributions highlighted the different ways through which the concept has been incorporated and institutionalised into business practice as an instrument to sustain long-term industry growth.

With respect to the business literature, Porter and Kramer's (2006, 2011) studies captured the interest of business and management scholars by introducing the concept of Creating Shared Value (CSV). Linking strategic corporate social responsibility (CSR) with the company' competitive advantage, they introduced strategic CSR that moved beyond generic social impact towards shared social values (Porter and Kramer, 2006). They argued that by investing in social capital and building symbiotic relationships, the success of both the company and the community would become mutually reinforcing. For example, Nestlé's commitment to investing in local dairy infrastructure in India enabled the company to obtain a stable supply of high-quality fresh milk, whilst eliminating the extra costs of middlemen. From a CSV perspective, the value is more than just doing good by changing sourcing practices, but in further exploring how the firm could reconfigure its operations to

generate economic value by creating social value and driving growth in the competitive global economy. Finally, they argue that shared value is defined as a total pool of economic and social value, rather than as simple redistribution of revenue introduced by third party certification schemes in the form of a market incentive (Porter and Kramer, 2011).

Critiques of incorporating the sustainability concept into business practice pertain to the over-emphasis of corporate interest in value creation as a strategy employed at the expense of other segments of society. As Banerjee (2008) argues, such strategies are zero sum games in the sense that the nature of corporations are inherently driven by an economic rationale (such as a shift to greener energy or zero waste practices leading to cost saving and increased efficiency). Ensuring social welfare remains the basic role of governments, a role that will presumably never be entirely usurped by corporations. Banerjee (2008) further suggests that corporations' self-decisions to relocate their production facilities to other locations due to increasing labour costs are clearly not considered in the interest of societies and livelihoods reliant on the corporations. The latter's strategies are independently employed to increase shareholder value and financial returns. They are not designed around social justice or morality. A similar argument was directed towards environmental elements, where reframing nature as a market commodity dependent upon corporate sustainability tends to corrupt the social good of the environment rather than protect it (Nyberg and Wright, 2013).

Incorporating sustainability into strategic business development, however, does signal a changing corporate culture. The various emerging corporate sustainability initiatives, including public reporting of their ethical and social performances, was in effect moving beyond philanthropic CSR. This initiative has remained voluntary and is often imposed by firms operating at the consumer interface of the value chain. The extent to which these self-enacted private regulatory attempts to fill the missing gap in public regulation are actually re-shaping governance regimes across the supply chain remain under explored in the literature. Global acknowledgement by international development agencies of lead firms as key partners in development supports their claims to contribute to the development of rural communities under a commitment to sustainability. The implications, for less efficient upstream economic actors (including smallholder producers) and rural development, of these emergent corporate discourses also remain uncertain.

2.2 Lead firms and the global economy

The emergence of corporate sustainability has occurred at the same time as the global economy has continued to be fundamentally restructured towards networks of spatially dispersed economic functions coordinated by dominant lead firms. Business and management scholars argue that incorporating the sustainability concept makes business sense as it will help build mutual relationships with other actors that extend beyond generic altruistic and social impact motives. At the same time, critical sociology and economy geography scholars have tended to argue that the strategic decision of economic actors to adopt sustainability is motivated by economic interest, not primarily by social or moral justice. Recognising the implementation of sustainability across the supply chain in the form of increasing global private regulation is linked to increasingly diverse upstream value chain interventions by lead firms. The following literature review explores the theories of Global Value Chains and Production Networks (GVC-GPN) as a way of making sense of current global economic organisation and firm strategies.

2.2.1 Global Value Chains (GVCs) and Global Production Networks (GPNs)

Over the last few decades, the GVC-GPN approach has drawn the attention not only of academic scholars, but has also been extensively adopted by various multilateral economic development institutions and donor agencies including the WTO, UNCTAD, OECD, and USAID. The structural framework proposed by the GVC inspired the development agencies to deliver programs which they introduced as 'value chains for development' (Neilson, 2014). They advised how to incorporate local economic activities into the global economy, and how to gain economic benefit from higher value and market accessibility. The development practitioners recognise that the GVCs are becoming a key driver for long term structural development (UNCTAD, 2013; Neilson, 2014; OECD and WB group, 2015). From an academic perspective, this approach provided an analytical framework for understanding the distribution of power and value across the chain, including how a firm can gain from *plugging-in* to the global supply chain. However, given global oligopolistic market structures in sectors such as cocoa, market power rests with a few powerful transnational actors who maintain asymmetric power relationships with millions of unorganised small producers. This remains a problematic concern.

Early studies of GVC-GPN drew upon world-system research seeking to understand capitalism's territorial scope, and how the chain structure reproduced a stratified and hierarchical world-system. Hopkins and Wallerstein (1977; 1986), who introduced the commodity chains concept, referred to a network of labour and production processes across multiple states resulting in a final product. Their analysis focused on the historical reconstruction of industries in the sixteenth century. They highlight state-centred power in the forms of industrial and trading regulations that shaped global production systems and economic flows between states.

Then, Gereffi and Korzeniewicz (1994) claim that the emergence of globalisation and trade liberalisation in 1990s, shifted the focus from state-centred development to firms, framing the power and control exercised within the global supply chain (which they referred to as Global Commodity Chains-GCCs). The rise of the transnational firms' leading role recognised the importance of globalisation processes, particularly how participation in commodity chains facilitated the upgrading of industries in developing countries. With a focus on the power dynamic within the capitalist world economy, this broad approach was subsequently embodied within various terminologies, including 'value chains' (Kaplinsky and Morris 2001), 'Global Production Networks' (Henderson et al., 2002), 'cross-continental food chains' (Fold and Pritchard 2005), and as 'Global Value Chains' (Gereffi et al., 2005). Overall, these approaches provided a structural analysis of the nature of power relationships across space and their implications for uneven regional development.

Earlier, the GCC approach introduced a producer-driven and buyer-driven commodity chain governance framework. While, the producer-driven governance was characterised by capital and technological-intensive industries (e.g., automobiles, electronic appliances) and the lead manufacturer had a central role in controlling a production system comprising several tiers of distributors who were vertically coordinated. The buyer-driven chains were characterised by labour-intensive industries (e.g., apparel and agricultural crops) and the subcontracting suppliers were coordinated with a certain degree of control exercised by retailers or brand-design merchandisers.

The buyers drive what product to produce without necessarily produce because they had the market capacity to create the market and sell the branded products.

Although the buyer-driven chains were more resembled to the labour- intensive industries, not all the agro-commodities were following this approach, particularly the colonial crops such as cocoa, coffee, cane sugar and natural rubber. In cocoa, Gibbon (2001) identified the major horizontal coordination role played by the state' firm such as monopoly of domestic marketing function like in Ghana and Ivory Coast before 1990s. Both states were playing coordination roles from delivering extension services, supplying inputs, maintaining quality control, and recovering credit to control over the farm gate price. As the state marketing board monopolised the upstream market, the vertical coordination with the lead buyers performed by few international trading and brokering companies (Gibbon, 2001; Fold, 2001). Within the context of West African cocoa production, the chains were not driven or dictated by the transnational lead buyer, but the producer countries also were actively in setting the rules of the game, both in price and quality terms, (Gibbon, 2001). While at the industrial production, Fold (2002) identified 'turn-key' (or modular) chain structure where the branded chocolate manufactures established vertical coordination with the capable chocolate-cocoa producers to deliver specific characteristics and quality credentials of industrial chocolate and cocoa products, depending on the spatial market demands, specific brands and functional characteristics.

Following the improvement of information and technology, and the increased outsourcing strategy of manufacturing firms, more diverse market demands (e.g. organic, fair-trade, less sugar, high flavanol, the dyadic typology of governance was unable to accommodate the emergence of more complex patterns of chain governance. As supplier capabilities in exporting countries improved and vertically-integrated industries were dismantled, the introduction of a more dynamic analysis of inter-firm governance was accompanied by the replacement of the term 'commodity' to 'value'. The term 'commodity' suggested undifferentiated products, and the term 'value' reflected the increasingly popular notion of value-added (Sturgeon, 2008). The formalisation of the terminology into global value chains, Gereffi et al., (2005) extended the dynamic governance structure to five types that specifically describe how suppliers relate with lead firms: (1) market; (2) hierarchy; (3) modular; (4) captive; and, (5) relational. The structure provides a framework for firms in developing countries to demonstrate how to improve their position within the chain by generating and retaining value added. This approach has shifted away from the traditional world system approach, as Bair (2005) argues, much of the chains literature opposed the previous macro and holistic perspective of a world-system approach, and GVCs have increasingly focused on the meso level of sectoral dynamics and the micro level of firm upgrading.

Dismantling cocoa marketing boards in Ivory Coast and (partially) following by Ghana has weaken the state horizontal function and emerging the voluntary sustainability certification schemes to pressure the dominant transnational firms to taking responsibility on social and environmental issue have also contributing to more dynamic governance of global cocoa value chain. Defining quality credential as common rules of the game expanded for not only measuring the cocoa bean quality credentials, but also including all the process of farming practices and supply chain practices. While the recent development in global cocoa production networks shows an integrated trading-processing function and growing concentration of supply capacity of few transnational chocolate-cocoa producers beyond the five-fold categorising of governance. With more concern over

sustaining the cocoa industries, the international traders are also cocoa and chocolate producers adds another inter-firm challenge for the branded chocolate manufacturers on how to maintaining their control over the first-tier suppliers and the upstream smallholder farmers. Thus, integrating sustainability into the current trend of outsourcing supply strategy plays crucial role in maintaining the lead firm control over the industrial chocolate-cocoa and upstream cocoa production. Thys study contributing to dynamic governance of chocolate-cocoa production networks related to the growing trend to incorporating sustainability concept into the firm strategy. Also, this study filling the gaps over dominant study that focus on West African Countries and offers different geographic context of local chocolate-cocoa production networks in Indonesia.

Overemphasis of the linear and vertical metaphor of the GCC-GVC approach to the conceptualisation of complex global production and consumption process also drew scholarly criticism from the proponents of global production networks (GPNs, Dicken et al., 2001; Henderson et al., 2002; Coe at al., 2008). Henderson et al., (2002: 442) argue that:

...[S]uch processes are better conceptualised as being highly complex network structures in which there are intricate links -horizontal, diagonal, as well as vertical -forming multi-dimensional, multi-layered lattices of economic activities.

GPN scholars make reference to the complex network of structures underpinning the global economy. This network involves the interaction of diverse actors, institutions and interest groups from economic, political, social and cultural spheres. Their actions are embedded in multi-scalar territorialities of asymmetrical power relationships that inherently produce diverse spatial outcomes. This argument has become the main foundation supporting the construction of the initial GPN framework that specified the three interrelated conceptual categories of value, embeddedness and power. Yet, the conceptual approach remains inadequate for developing a theory of GPN due to its explanatory and causal limitations, which led to a more recent, dynamic configuration of global production networks (Yeung and Coe, 2014:31-32).

In a quest to reframe existing generalisations at the industry level, Yeung and Coe (2014) introduced a new GPN model (which they refer to as GPN 2.0) to introduce causal mechanisms of independent capitalist dynamics that shape actor-specific strategies, which in turn drive the dynamic reconfiguration of production networks within specific industries and localities. They define global production networks as 'an organisational arrangement comprising interconnected economic and non-economic actors coordinated by a global lead firm and producing goods and services across multiple geographic locations for worldwide markets' (Yeung and Coe, 2014: 32). This definition broadens the previous GVC definition that tended to focus more upon the industrial process, and coordination of the conception of a product or services towards the near end market (Kaplinsky and Morris, 2001; Gereffi and Fernandez, 2011). However, both the GVC and GPN approaches emphasise the key roles of lead firms that own a certain degree of power and authority to govern the chain or network. GPNs, however, emphasize the diverse interconnected roles of economic *and non-economic actors* within the spatial network rather than merely considering them as external forces that influence the networks.

GPN 2.0 theory introduces broader capitalist dynamics, as independent variables, as the *raison d'être* for global production networks, which combine with the prevailing risk environment to drive firm practices and strategies. GPN 2.0 introduces three dynamic forces as causal conditions that determine specific lead firm strategies: (1) cost capability ratios; (2) sustaining market development; and, (3) financial discipline (Yeung and Coe, 2014). While, these dynamics drive the value capturing activities of economic actors, this is combined with their ability to manage risk environments. Notwithstanding the inherent uncertainty of these external forces, Yeung and Coe (2014) suggest five different forms of risk: economic, product, regulatory, labour and environmental. While the risks related to individual firm capabilities tend to be manageable, the risk associated with non-economic actors can be unpredictable and unprecedented, although this risk is negotiable (Yeung and Coe, 2014). In an attempt to bridge this gap in the literature, this thesis looks at how firms use their economic power to persuade and extend their coordination with non-economic actors to minimise risks that could impede their determination to capture maximum value from particular production processes, and how 'sustainability' is employed to this end.

A combination of these capitalist competitive dynamics defines the firm's strategy to reconfigure global production networks. Regarding dependent variables, Yeung and Coe (2014) suggest the following three industrial strategies (akin to governance types): intrafirm coordination, interfirm control and interfirm partnerships, along with an extra-firm bargaining strategy. The inclusion in this model of an extra-firm bargaining strategy is a departure from previous governance models in the GVC literature. Indeed, the diverse interests of emerging global rulers, the growing presence of civil society groups (including certification bodies for sustainability), and policy interventions by the state have significantly influenced the creation of value-added in particular production networks. In their attempt to move beyond the over-emphasized intra and inter firm governance strategies, Yeung and Coe (2014) argue that economic processes are interrelated with non-economic issues that are produced by diverse non-economic actors. Thus, extra-firm bargaining strategies are crucial to providing this analytical nexus.

2.2.2 Extra-firm bargaining strategies

There is thus an increasing recognition of the significant roles of non-economic actors and the unpredictability of risk environments that could possibly lead to disruption of economic process. Reflecting the under-exploration of this uncertainty in the literature, my thesis explores the extra-firm bargaining strategies within upstream production networks. The emergence of corporate sustainability discourses and initiatives appears to reflect such strategies. Yeung and Coe (2015) categorise extra-firm actors based on their functional roles and spatial impact on the production networks; the state, international organisations, labour groups, buyers and civil society organisations. Yet, how the firm is engaging with the extra-firm actors to pursue their interests remains unclear.

Earlier GCC-GVC literature tended to address the role of extra-firm actors in reshaping inter-firm governance as largely external to the value chain (Coe and Yeung, 2015). However, some scholars had argued that these actors play significant roles particularly in creating and reshaping the agrofood value chains (Giovannucci and Ponte, 2005; Tallontire 2007; Raynolds, 2009; Tallontire et al., 2011; Ponte, 2014). Ponte and Sturgeon (2014) suggest the notion of polarity governance, in an attempt to capture the multiple levels of governance interactions among the actors within the chain

and beyond. This includes the following: micro level governance (dynamics of dyadic exchange such as referring to a fivefold governance structure); meso level governance (how the coordination linkages between the nodes are influenced by both upstream and downstream activities as the result of different factors embodied in the nodes); and, macro level governance (the intention to analyse the whole power of the dynamic resulting from different polarities of power). According to Ponte and Sturgeon (2014: 215):

'Multipolar' chains are different from 'markets' as they are strongly shaped by the explicit strategic actions of powerful actors (both inside and outside the chain), even if they exhibit multiple foci of power and various kinds of linkages. This has implications for how the micro and meso elements of GVC governance are embedded into the macro level.

...A focus on polarity, ranging from unipolar to multipolar governance allows the construction of plurality of drivers and of driving mechanisms that go beyond the well-established dichotomy between buyer-and producer driven governance. This plurality acknowledges that not only firms, but also other actors such as standard-setting bodies, international NGOs, social movements, certification agencies, labour unions, and consumer associations can have a bearing on GVC governance.

This proposition also recognises the narrow conception of industrial governance. Ponte and Sturgeon argue that existing GCC-GVC governance types suggest that the power in the chain resides mainly in one functional position, which they refer to as unipolar. Indeed, Ponte (2013) had earlier identified the emerging multipolar chain in palm oil as moving away from being unipolar and government driven, as the industrial actors are negotiating voluntary standards and certification with both the standard makers and environmental and social groups in accordance with multistakeholder initiatives. This adds to earlier conceptions of dynamic governance, such as Fold (2002), who suggested a bipolar governance mode where power in the cocoa chain was shared between chocolate manufacturers and grinders.

The growing power of non-economic actors in reshaping agrofood governance is well documented in the coffee value chain (Raynolds et al., 2007; Bacon et al., 2008; Henson and Humphrey, 2010; Reinecke et al., 2012). The increased demand for certified coffee over the last few decades has been driven by lead firms (often branded roasters), who control large market shares. The booming sustainable coffee market highlights certification schemes as a promising way to fill the regulatory vacuum resulting from globalisation and the declining role of the state in regulating environmental and social relations (Raynolds et al., 2007; Henson and Humphrey, 2010; Reinecke et al., 2012). These private sustainability standards and regulations are conventionally viewed from an institutional perspective, which interprets the role of such standards as addressing the insufficient willingness and capacity of states to regulate social and environmental issues, rather than interpreting the role of economic actors to negotiate standards and (or) influence the public policy environment. Consistent with the growing contemporary complexity of political-economic systems and socio-cultural change, economic actors are realising that delivering business as usual may not be sufficient to overcome unpredictable outcomes driven by non-economic actors or the physical environment.

From a GPN perspective, the extra-firm bargaining strategy recognises the actor-specific interaction with the networks that previously emphasized only interfirm governance. This concept enriches GPN theory by acknowledging that both economic and non-economic actors are pursuing an extra-firm bargaining strategy for interrelated objectives, market power, proprietary rights, and social and political legitimacy (Yeung and Coe, 2015). These objectives are relevant to lead firms whose primary focus is on near end market core-competencies, e.g., increasing market dominance, continuing to maintain expansion across emerging countries, securing the proprietary rights of novel functional compounds, retaining economic rent, legitimising responsible and ethical firms, and protecting them from consumer criticism. The increase in the cocoa-chocolate transnational firms' upstream intervention through a range of sustainability initiatives was initially driven by interrelated risks beyond the firms' outreach, linking to unstable supply and socio-political issues (Bitzer et al., 2012; Barrientos, 2013). Departing from the intention to minimise these risks, upstream economic activities are necessarily diverse due to specific territorial contexts and challenges. For example, the cocoa bean supply chains in West African countries have been challenged by reports of forced labour and political turmoil, while low quality and stagnant farm productivity prevail in Indonesia, and low productivity was noted in the Latin America.

As part of a broader effort to manage upstream risk environments, firms pursuing extra-firm strategies attempted to build alliances (or partnerships) with non-economic actors, most commonly through sectoral and multi-stakeholder forums (Ponte, 2014; Fuchs et al., 2011). Within a range of global multi-stakeholder forums, the powerful transnational firms' presence became accepted as a key-partner in development (Hartwich et al., 2008; Pattberg (ed.), 2012; FAO, 2016; Narrod et al., 2009). But, this global recognition was not automatically followed by national and regional recognition, as the transnational firms were often seen as rivals rather than as partners. As a result, such partnerships, facilitated by North-based international organisations, were interpreted as an attempt to legitimise corporate representation and participation in the public domain. As well as seeking political legitimacy from the nation state, the transnational firms are collaborating with non-economic actors to deliver sustainability initiatives and a range of extension services for upstream economic development, that were previously delivered by the state (Fransen and Kolk, 2007; Alvarez et al., 2010; Dentoni and Peterson, 2011; McCarthy et al., 2012).

This extended role of the transnational firms beyond the economic domain and across territorialities was facilitated through sustainability discourses which highlighted the importance of horizontal modes of coordination within supplier communities. But, vertical coordination in the forms of private regulation and voluntary certification schemes to reach smallholder producer will not necessarily result in upstream economic and rural development. Using multi-stakeholder forums as instruments to coordinate with non-economic actors, the transnational firms established themselves as key partners participating in delivering sustainability programs - often in the form of public private partnership - for sharing funds, exchanging resources and information, and eventually responsibility (Shapiro and Rosenquist, 2004; Blommer, 2011; Bitzer et al., 2012). The notions of sharing resources and risk through partnerships, and promoting mechanisms to achieve sustainable agricultural development were the subjects of FAO reviews for agribusiness development in Latin America and Southeast Asia (FAO, 2016: ix). Partnerships were defined as:

'formalised partnership between public institutions and private partners designed to address sustainable agricultural development objectives, where the public benefits anticipated from the partnership are clearly defined, investment contributions and risk are shared, and active roles exist for all partners at various stages throughout the PPP project lifecycle'.

As dynamic development instruments, partnerships explicitly position private firms as equal partners in reshaping and negotiating the objectives and outcomes of the partnership with diverse non-economic actors.

While the transnational firms were building relationships with non-economic actors, domestic firms in Indonesia were building close relationships with the state. In this way, they gained access to influence national policies such as programs, distribution of subsidies, and land concessions. In the Indonesian timber commodity chain, Gellert (2003) stresses the importance of political alliances between the state and local capitalists to facilitating upgrading, and to supporting further alliances within the market between local capitalists and Japanese firms. Although such political alliances were more common during the Soeharto regime, Soesastro and Basri (2005) argue that among the elite capitalist groups who hold key positions in the public and private sectors, patron-client relationships remain strong. The capitalist groups organise lobbies and articulate the rhetoric of agricultural protectionism on the basis of poor farmer interests, which deceptively protect powerful rent-seeking groups (Kim, 2005). The roles of local capitalist groups remain of considerable importance as they negotiate and bargain public policies and trading regulations in their favour.

2.2.3 Economic and social upgrading in value chains

Global value chain theory suggests industrial (or economic) upgrading as a pathway to capture value from integration with the global economy. Gereffi (1995, cited by Talbot, 2002:708) proposes three state-related strategies to promote upgrading: (1) policy and institutional reform creating an enabling environment; (2) attracting and managing foreign direct investment (FDI) to promote development and enhance local firm competitiveness; and, (3) participation in regional economic blocs. However, as Talbot (2002) argues, these strategies do not explain why some regions or firms gain and others fall when adopting such a strategy. For example, inviting FDI may not be sufficient to enhance the domestic firm competitive advantages in a weak institutional system. Among studies understanding this failure, Cramer (1999) argues that labour force skills are not enough to gain success. Additional factors related to state intervention in policies and external market condition are crucial factors.

The case study of South African Wine shows that simply upgrading the product quality, process and functional activities may not guarantee the capture of value added because the rewards may not be enough to cover the upgrading cost. Downgrading may prove a better option in response to higher demand for bulk inexpensive wine (Ponte and Ewert, 2009). Similarly critiquing the apparel industry, Tokatli (2013) claims that the proposed upgrading framework lacked sensitivity regarding different competencies and the business environment. Thus, despite concern over fetishizing upgrading with positive development outcomes in the agrofood sector, the process of facilitating upgrading is more complex than simply enabling firm innovation and accessing new markets (Selwyn, 2011). Improving the farming process, through organic or quality production for example, will not necessarily result in higher value for the producer because of higher operational and labour costs. On the other hand,

value can be generated outside of upgrading. Furthermore, earlier studies (Barrientos et al., 2010; Selwyn, 2013; Milberg and Winkler, 2011) clearly demonstrate that gaining from a firm's economic upgrading does not necessarily lead to social upgrading, while social upgrading may occur in the absence of economic upgrading.

Responding to concerns over deterministic processes of economic upgrading, Gereffi and Lee (2016) note the inadequacy of economic upgrading within the global value chain framework. They introduce six trajectories of social upgrading with diverse key drivers and actors in different forms that extend beyond market dynamics: market, CSR, multi-stakeholder, labour-centred, cluster-centred, and public governance. However, altruistic CSR initiatives by lead firms have limitations when seeking to promote fair labour conditions in low technology industries. This is partly due to an increase in shifting global production from the strictly regulated developed countries to less regulated transitional-developing countries. Barrientos et al., (2011:324) suggest expanding the scope of CSR's upgrading concept, as 'the process of improving the rights and entitlements of workers as social actors, which enhances the quality of their employment'. However, enforcing social-environmental laws across supply chain partners can lead to increasing production costs and the voluntary nature of private regulation seems to be insufficient to deliver meaningful outcomes for vulnerable groups.

Selwyn (2014), who emphasizes the importance of territorial context, also notes the extension of value capturing beyond economic activities, as non-economic actors increasingly influence the strategies the lead firms employ to govern and configure the global production networks. He argues that supplier firms' upgrading success and failures are tied to local development processes that result in inclusion and exclusion from GVCs. The development process of the lead firms' node is influenced by the surrounding regional/national economy (Selwyn, 2014: 9). With the support of the state as facilitator and protector of innovation, lead firms have the capability to manage the diffusion of innovation, enforce updated innovation, and replace previous systems. Buoyed by dynamic market power, they are able to retain lower profits and wage rates through selected competent suppliers (O'Hearn, 1994, cited in Selwyn, 2014).

The earlier literature on value chain upgrading drew heavily upon the experience of organisational integration through buyer-driven industrial networks in labour intensive industries and export-oriented industrialisation from East Asia. This development strategy required the government -as primary facilitator - to create supportive conditions through infrastructure investment and business friendly economic policies. However, elsewhere, supplier countries' increased participation in the global production networks resulted in poor levels of value capture. This was particularly evident in the labour intensive, low value and technology driven spheres (including agrofood), which led to intense competition associated with emerging social and environmental issues (Ponte, 2002; Blowfield, 2003; Talbot, 2002; Arnold and Pickles, 2011; Milberg and Winkler, 2011; Barrientos et al., 2011). The literature reveals that *plugging-in* to the global production network was not always associated with equal distribution of gain from economic activities.

There are limitations to economic upgrading within global production networks where emerging countries were becoming the factories of the world. While a country may benefit from a labour surplus, value chain engagement is not necessarily followed by improved social welfare. Social

upgrading, which is becoming a promising trajectory to pursue, can be linked to economic upgrading. But, what remains unclear are the different pathways through which lead firms are pursuing the non-economic actors to address the complexities of territorial- based socio-environment issues, particularly in developing countries. Considering that the lead firms' engagement with sustainability discourse within the global cocoa production networks is driven by concerns over economic and social risk, it remains unclear whether such engagement offers mutualistic value capturing trajectories for downstream and local upstream actors.

2.3 Strategic coupling and regional economic development

Previously, Global Commodity Chains (GCCs) articulated a significant role for the state within the lens of dyadic producer and buyer driven governance. Gereffi (1994: 100) explained how export-oriented development emerged through buyer-driven governance in labour intensive industries. Governments in importer countries applied protectionist policy in organising the commodity chains that influenced the geographical pattern of sub-contract export manufactures in developing countries (Bair, 2005:167-168). Hence the gains for lead firms were at the expense of cheaper productive capital supplied by the export-oriented countries leading to uneven development.

Unpacking different patterns of uneven development, GPN approach introduces three level of analysis: 1) Applying actor based approaches that focus on the firm-level dynamics of value creation, enhancement and capture in the production networks; 2) The sub-national region level, as a key site for territorial analysis of the intersection with global production networks; and 3) Including macro political- economic structures, within which the production networks and process of regional economies are embedded (Coe and Yeung, 2015: 170). As the value capture from *coupling* to GPN actors was considered a necessary condition for regional economic development, this value needs to be retained and redistributed by firms within the specific regions, rather than being repatriated or transferred to other regions. The retained value leads to a regional improvement of economic conditions when regional institutions have the capability to transform the value into regional assets by complementing the strategic needs of lead firms in the global production networks. With this, territorial distinctive institutions and horizontal social relations shape trajectories, which are inherently dynamic and continuously evolving (Coe and Yeung, 2015).

With *plugging-in* to the GPN as a key mechanism to stimulate economic development, Coe and Yeung, (2015) suggest that this *coupling* process evolves over time following the rapidly changing strategic needs of leading actors' in global production networks. Understanding how regional assets may best complement the strategic needs of firms requires active interactions between the regional institutions and GPN actors, in addition to strengthening the region-specific assets as a bargaining entity. Such interactive effects of both dimensions' shape regional development. This process, however, cannot be constructed as deterministic or construed as a functionalist argument, because the process does not necessarily lead to positive outcome of development (Coe and Yeung, 2015).

Despite this time-space dynamic and evolving notion of a coupling process, Coe and Yeung, (2015: 133-4) suggest three modes that regional economies couple with GPNs based on differing degrees of autonomy: 1) Indigenous couplings-have considerable autonomy and value capture since regional actors are able to reach-out and construct GPNs; 2) Functional couplings- have some degree of autonomy and value capture where the regional actors productively meet the needs of GPNs, either

through inside-out (re. reaching out to establish transactional relationship) or outside-in (re. inviting investment in to particular territories); and 3) Structural couplings-have dependency as the regional actors remain weakly embedded to GPNs and continue to supply an intermediate segment.

2.4 Corporate sustainability and GPNs

Responding to a combination of social pressures from consumers and longer term supply constraints, cocoa-chocolate firms are embracing the sustainability concept in an attempt to integrate socio-environmental issues into their business practices. The emergence of sustainability, in tandem with recent attitudes towards CSR, is occurring simultaneously with new strategies in industrial governance. These efforts to incorporate complex social and environmental issues require engagement with diverse non-economic actors (including national and local governments) to negotiate and coordinate value capture trajectories. This involves collective programs, independent monitoring of performance, and reinforcing social-environmental requirements into the firms' responsible sourcing standards. While economic actors are expected to be socially responsible and to contribute to sustainable development, they also need to sustain long-term competitive advantage. Coe and Yeung (2015), referring to extra-firm bargaining strategies, stress that industrial governance has limitations in the conceptualisation of how lead firms are engaging with non-economic actors.

Summary

This thesis adopts the dynamic GPN theoretical framework of Coe and Yeung (2015) with an emphasis on upstream development. Reflecting on increasing transnational lead firm engagement in both sustainability discourses and upstream intervention, the thesis explores the incorporation of sustainability into industrial governance and extra-firm bargaining strategies to improve upstream competitive capitalist dynamics that minimise the risk environments posed by external actors and factors. Given that upstream cocoa production is geographically fragmented and beyond the control of the downstream actors, sustainability may offer a horizontal instrument for connecting and managing both upstream and downstream economic activities.

The debate surrounding the sustainability concept remains focused on the elusive meaning of the term, and how best to integrate the concept into business practices, rather than on addressing complex socio-environmental issues that shape uneven development. Focusing on development perspectives, value chain analysis has emerged as a prominent contemporary analytical framework for understanding power relationships and value capturing where the transnational lead firm is the centre of analysis. With the growing attention on the Global Commodity Chains-Global Value Chains (GCC-GVC) as key drivers of long-term structural development (UNCTAD, 2013; Neilson, 2014; OECD and WB group, 2015), the approach has received criticism for overemphasising the linearity and vertical metaphor of value chain industrial governance. The Global Production Networks (GPN) scholars highlight the complex network structure of interactions among diverse actors, institutions and interest groups. The actions of firms are embedded in multi-scalar territorialities of asymmetrical power relationships that inherently produce diverse spatial outcomes that further shape different patterns of uneven development.

Reframing existing understandings of industrial governance, recently Yeung and Coe (2014) introduced a new GPN model (which they refer to as GPN 2.0) to introduce causal mechanisms of independent capitalist dynamics that shape actor-specific strategies, which in turn drive the dynamic reconfiguration of production networks within particular industries and localities. This approach emphasizes the diverse interconnected roles of economic *and non-economic actors* within the spatial network rather than merely considering them as external forces that influence the networks. Moving beyond the over-emphasis on intra and inter firm governance strategies, Yeung and Coe (2014) argue that economic processes embodied in firms are interrelated with non-economic issues exposed and produced by diverse non-economic actors, thus extra-firm bargaining strategy is crucial to providing this analytical nexus. As part of a broader effort to manage upstream environmental risks, firms pursuing extra-firm strategies attempted to build alliances (or partnerships) with non-economic actors, most commonly through sectoral and multi-stakeholder forums (Ponte, 2014; Fuchs et al., 2011).

Global value chain theory suggests industrial (or economic) upgrading as a pathway to capture value from integration with the global economy. However, supplier countries' increased participation in the global production networks has also resulted in poor levels of value capture. The literature reveals that *plugging-in* to the global production network was not always associated with equal distribution of gain from economic activities (Talbot, 2002; Ponte and Ewert, 2009; Milberg and Winkler, 2011; Barrientos et al., 2011; Selwyn, 2013; Tokatli, 2013). As the value capture from *coupling* to GPN actors become a necessary condition for regional economic development, this value needs to be retained and redistributed within the firms in the particular regions, rather than repatriated or transferred to the other regions. As such, territorially distinctive institutions and horizontal social relations are shaping such trajectories, with profound implications for processes of uneven economic development.

3. Research approach and methodologies

To briefly restate the aims of this thesis, I seek to: 1) address how transnational cocoa-chocolate firms are defining, negotiating and governing sustainability across the global production network; 2) to assess how the Indonesian government is responding to increased upstream sustainability-linked interventions by lead firms; and 3) understand the upgrading trajectories of sustainability initiatives for smallholder farmers in Indonesia.

To address these research questions, I adopt a case study approach. Hardwick (2009) claims that a case study approach focuses on intensive analysis of particular places, groups or specific issues, often incorporating mixed methods of data collection and analysis of different viewpoints from diverse respondents. This study has selected two case studies of the world's leading chocolate confectionary manufacturers: Mars, a family-owned company established on 1911; and Nestlé established on 1866, which has been a publicly-listed shareholding-owned corporation for more than 100 years. Both are globally and nationally engaging with sustainability discourses, and have been implementing sustainability initiatives in Indonesia for a number of years. A case study approach has been adopted to explore the extrafirm bargaining strategies of lead firms, along with their sustainability initiatives. This study has employed the following primarily qualitative research methods: data collection from in-depth and semi-structured interviews; focus group discussions; content analysis of reports and media publications; and a questionnaire survey in addition to quantitative information gleaned from secondary sources. In addition, triangulation of evidence and findings from different sources and stakeholders has been undertaken to enhance the credibility of findings and conclusions.

3. 1 Case selection

Six leading chocolate manufactures are controlling 40% of global market share including Mars and Nestlé (Barometer Consortium, 2015). Originally produced butter cream candy, Mars soon diversified to chocolate bars and become one of the earliest established chocolate manufacturers in the US, currently Mars has expanded to pet food and sauces industries. Mars has been operating in Indonesia since 1996, the early candy manufacturer in North Sumatra province was close-down (Respondent CC1, pers. comm, 2015) because of small competitive local market, but Mars maintains the cocoa processing in South Sulawesi province and directly involving in upstream cocoa production development. Nestlé, which originally started as a dairy business in 1866, has grown through mergers and continued diversifying its various product portfolios, including the chocolateconfectionary segment. With dairy product line, Nestlé Indonesia outsources chocolate-cocoa products for chocolate flavour beverages and dairy products. Maintaining the historical value of the origins of their product lines, Mars and Nestlé are currently implementing different outsourcing strategies according, at least in part, to the degree to which the product line contributes to the firms' total revenue. More than 30% of Mars' total revenue comes from its chocolate and confectionary segments, with significant revenue from other food and beverages. Of the two companies, Nestlé has a more diverse product portfolio and according to a recent financial report, its confectionary segment only contributed approximately 8.5% of total sales, beverages contributed 28%, and a combination of nutrition-based and dairy product lines contributed approximately 33%.

Nestlé commenced production in Indonesia earlier than Mars, established as PT. Food Specialities Indonesia in 1971, later changing to PT. Nestlé Indonesia in 1993. This subsidiary firm established factories in East Java and Banten provinces to produce dairy, coffee and nutrition-based products, while their chocolate-confectionary factories were located elsewhere across the region (in Thailand, Japan, China and Australia). Following the recent expansion of *Milo* and cereal factories in Indonesia, Nestlé began to outsource processed cocoa products to specialised suppliers including BT Cocoa and Barry Callebaut in 2011. After 2006, Nestlé dismantled its global cocoa processing facilities and shifted to an outsourcing strategy with specialised and independent partners depending on the market geography, while strengthening its investment in product research-development and food safety.

Mars, meanwhile, established a subsidiary cocoa processing facility in Indonesia in 1996 under the name of Mars Symbioscience Indonesia (MSI) and in 2004 built a confectionary manufacturer in the North Sumatra, but latter closed because of competitive domestic market¹². A pioneering company that established a cocoa processing facility in the Sulawesi region during a time when cocoa trading operations were more common and exporting cocoa beans were more profitable than selling to local cocoa processors. The Mars subsidiary faced supply challenges from international trading firms and domestic exporters who competed to source cocoa from small producers. Starting with a small-sized processing facilities, MSI supplied processed cocoa to its parent company in the US. Concomitant with the growing market in the Asia region, recently MSI increased the processing capacity to supply Chinese chocolate factories.

These operational differences have seen both firms employing different approaches and strategies to engage with upstream cocoa production activities. However, because supply risk has accompanied the expansion of cocoa processing facilities, Mars began actively implementing cocoa sustainability programs in early 2000, building relationships with both global and domestic non-economic actors to support small cocoa producers. In 2006 MSI, together with other cocoa stakeholders, became one of the co-founders of a multi-stakeholder forum, the Cocoa Sustainability Partnership (CSP). In contrast, Nestlé shifted their strategic focus to chocolate manufacturing and branding, and became more dependent on its supply partners and less directly engaged with upstream cocoa production. While Nestlé has generally opted to work collaboratively with their supply partners and cocoa stakeholders, it is also one of the co-founders of the Partnership for Sustainable Agricultural (PISAgro), established in 2011, where it is active in the dairy, coffee and cocoa working groups. It should be noted that Nestlé has had a much stronger degree of direct engagement with Indonesian farmers in both the coffee and dairy sectors than in cocoa.

Both firms are engaging with sustainability initiatives in the Sulawesi region. The smallholder farmers from this region have experienced a range of sustainability projects and programs since early 2000.

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¹² In 2004, Mars have established a confectionary manufacturer to produce *Starbust* chocolate brand in Medan, North Sumatra. The operation was only few years before closing down because of competitive domestic market, published on 8 August 2008, http://tekno.kompas.com/read/2008/08/08/13101484/coklat.murah.untuk.indonesia

The Mars Cocoa Sustainability Initiative (MCSI) was initially established in the Northern area of South Sulawesi province, and subsequently expanded to Central and Southeast Sulawesi. The implementation of MCSI also extended to its supply partners (such as Ecom and Olam) who owned extensive up-country buying stations across West, South, Southeast, and Central Sulawesi. Nestlé's supply partners mainly operate in West Sulawesi, for example in partnership with processing firms such as Barry Callebaut and BT Cocoa, the latter of which has opened up-country buying station in Mamuju district of West Sulawesi. Figure (3.1) shows the geographical distribution of Nestlé's Cocoa Plan (NCP) and Mars' Cocoa Sustainability Initiative across their supply chain partners, in West and South Sulawesi.

Districts (Supplier) Global/National Sub-district and village Mamuju and Majene Collectors (BT Cocoa-BTCare) Farmers Nestle cocoa plan Polewali Mandar Arm-length suppliers (Barry Callebaut-Collectors Cocoa Horizon) Farmers Firm sustainability initiatives Polewali Mandar (Ecom Subsidary-Collectors TMCI-Certification Farmers schemes) Mars Luwu, East Luwu, and Cooperatives sustainability North Luwu Collectors cocoa initiative (Mars Subsidiary) North Luwu (Olam Collectors Indonesia-Grow Farmers Cocoa)

Figure 3.1 Case study locations according to Nestlé and Mars sustainability initiatives based on geographical location and supply chain actors

Source: Author' own work

South Sulawesi province has become the dominant focus of MCSI, particularly the three districts of Luwu, North Luwu and East Luwu. In West Sulawesi (Polewali Mandar), Mars is supported by the contracted suppliers, PT Ecom subsidiary (TMCI) and by a local NGO - Wasiat. In Southeast Sulawesi, it is supported by PT Olam. By establishing a field research station and buying units with fermentation facilities in East Luwu, Mars has confirmed Luwu, East and North Luwu as the major areas of their sustainability program. As well, it is working in close coordination with contracted suppliers who are implementing their own initiatives in other areas including West and Southeast Sulawesi. This study acknowledges the fact that contract suppliers play an important role in supporting the firms' commitment as well as scaling up the initiative. Accordingly, the study also

includes one of Mars' contract suppliers, i.e., Ecom that initiated the Rainforest Alliance scheme in the Polewali Mandar district in 2012 and Olam, with its Rainforest Alliance scheme in North Luwu.

The Nestlé Cocoa Plan (NCP) has been implemented primarily in West Sulawesi. A pilot program was introduced into Polewali Mandar in 2011 in collaboration with PT Petrafood's cocoa ingredient division. However, the initiative was temporarily paused during the acquisition of the division by Barry Callebaut in 2012. By 2014, the region has become one of Barry Callebaut's Cocoa Horizon program. In collaboration with the West Sulawesi government, Indonesian processor BT Cocoa and Swiss-based NGO, Swisscontact, NCP has invested in an experimental cocoa farm in Mamuju, a showcase model of recently adopted technology alongside the Sustainable cocoa production program (SCPP), which is implemented by Swisscontact.

Malassar

Luwu

Makassar

Indonesia

Figure 3.2 Map of the research locations visited during data collection

Field research covered six cocoa-producing Districts across two provinces. Figure 3.2 shows the locations of sites for interviews, questionnaire survey, and group discussions in West Sulawesi (districts of Mamuju, Majene, and Polewali Mandar) and in South Sulawesi (districts of Luwu, North and East Luwu). The research field work was adjusted to the farming circumstances because of the nature of crop, and was conducted in two stages. Cocoa farming generally remains conventional where the farmer has limited maintenance of the farm, and the farmer sometimes seeks alternative

casual jobs during the off season. As a result, the harvest season is the best time to engage with the farmers, collectors, local traders and other local stakeholders. Although the harvest season may be different due to geographical and topography characteristics of the farm, but the harvest season generally takes two stages, the peak season which contributes about 60-70% of total farm production between March to August, with a smaller harvest coming by the end of the year. The first period of field work was conducted from April to July 2014, and the second period was during February to April, 2015. The first field work period focused on all actors involved in the private sustainability initiatives, while the second period focused on the specific case-study actors.

Mars and Nestlé have significant global market share and a strong presence in the Indonesian cocoa sector. They were selected based on the differences in the nature of firm' characteristics and historical value, organisational structure, and upstream challenges to sustain their investment in Indonesia's cocoa industry.

3. 2 Research methodologies

The study focuses on how the selected lead firms are extending their roles beyond supply chain actors and the implications of this for cocoa production networks and rural development. Using each firms' production network as the unit of analysis, information was gathered from interviews of supply chain actors and members of affiliated organisations, content analysis of firms' publications, media releases and online news, and by participating in a range of multi-stakeholder meetings, workshops and conference.

3.2.1 Interviews

Interviewing, a common method used in the social sciences, involves verbal interchanges arranged to obtain information from informants by asking questions. Longhurst (2009) refers to two types of interviews commonly applied in human geography based on the formality and the structure of the questions: (1) in-depth interviews, and (2) unstructured, semi-structured and structured interviews. The selection of respondents was based on their power to influence and contribute to the (re) structure of global and local production networks. This study opted for in-depth interviews of key informants who have currently exercising their economic and political power to influence the way the farmer integrating into the global production networks and the assisted group of farmers who were changing farming practices and adapting to the global market demand. Semi-structured interviews mainly applied to the key stakeholders who were either directly or indirectly involved in the firms' cocoa sustainability initiatives. After first seeking the permission of the interviewees, most of the interviews were audio recorded. The exceptions included transnational firm representatives and ministry representatives who preferred not to be recorded and suggested taking notes instead.

a. In-depth interviews with key informants

The term 'key informant' refers to a person who is considered to have experience, broad networks and extensive knowledge of their specific position (Marshal, 1996) in society. Her/his personal skills and position offer reliable insights and understanding of the more pertinent issues, in addition to certain degree to influence the design-implementation of sustainability initiatives and public policy

related to national development of cocoa sector. The groups are the cocoa supply chain actors including the major chocolate-cocoa industries who have presence in Indonesia and the assisted farmers, particularly the 'cocoa doctors' as well as the government institutions. At the village level, key informants include farmers and local traders who have intermediate positions that facilitate their connection to farmers, government representatives such as the Village/Hamlet Head, and other organisations. Many of these actors can be considered local elites due to their wealth accumulation, social position, and broader network connections. On a larger scale, other key informants include significant actors within the chain who influence the dynamic of the chain. For the purposes of this research, they include transnational cocoa traders and grinders, chocolate manufactures, and government officials as the individuals involved in (private and public) policy design and implementation. During my field work, interviews with key informants generally lasted between one to two hours. This was mainly because open-ended questions often lead to 'off topic' conversations. Table 3.1 shows the list of types of key informants, each of whom remains anonymous.

Table 3.1 List of the key informants who participated in in-depth interviews

Key informants	Number of respondents	Information generated	
1. Villages and districts			
		- Their relationships with other actors and how	
-Farmer group leaders and Mars' cocoa	14	they are connected to each other	
doctors		- Their perceptions regarding private	
		sustainability initiatives	
- Local traders/collectors	11	11 - Who initiated market linking and through	
		what process?	
- Local government representatives from the	4	- Any economic or social changes resulting	
estate crops department (Dinas perkebunan)		from the new market linkage	
and agricultural extension agency (Balai		- Any employment generated through	
penyuluhan pertanian)		sustainability initiatives and potential for	
		livelihood diversification strategies	
2. National and provincial			
		- Why they are participating in sustainability	
- Chocolate manufacturers	4	initiatives?	
		- What are their relationships with non-firm	
- Cocoa grinders-traders	8	actors and how are they connected?	
		- What are the coordination system and	
- Ministries: Coordination of Ministry of	6	arrangement with a sustainable market?	
Economy and Industry for estate crops,		- Has this initiative changed their relationship	
Ministry of Industry, Ministry of Agriculture,		with firms and non-firm actors?	
Ministry of Trade		- How and why is the government participating	
		in sustainability initiatives?	
- Local government officials	2	- What are their concerns over the initiatives	
		and how are they responding to them?	

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¹³ Cocoa Doctor refers to individual farmer who directly under Mars assistances within the context of Mars Cocoa Sustainability Initiatives. The assisted farmers are purposely selected by Mars according to their individual capability and capacity to become an extension agent as well as developing their cocoa farming business.

The arrangement of key informant interviews at both the village and district levels was primarily achieved by making appointments and/or meeting at specific events. Working closely with the existing Swisscontact sustainability team in Mamuju and North Luwu for a few weeks, and following their actual schedule offered opportunities to meet key informants in routine circumstances. As well, it allowed observation of the relationships and power dynamics that shaped their engagement. While in Polewali Mandar, the government estate crop officials facilitated the interviews as they maintained close relationship with group leaders and local traders. The focus of questions was mainly upon exploring the sustainable farm practices initiated by transnational actors, whether their initiatives have been adopted, and if they have changed the farmers' livelihoods (see Table 3.1 for detail). As well, their relationships with local traders and/or collectors were explored, along with their attitudes towards the sustainability initiatives. Within the six districts, in-depth interviews were conducted during the second field work period, between February and March 2015 in different locations.

Most of the in-depth interviews conducted in both East and North Luwu were assisted by MSI field coordinators and were undertaken within two days. This combination of spontaneous and arranged interviews was conducted by visiting individual households and following similar questions and approach. Four East Luwu farmers, who were also known as 'cocoa doctors', represented Mars' direct intervention under the firm's decentralised initiative. These interviews were undertaken between the 3rd and 4th of March, 2015. The respondents were selected by Mars' field coordinator. To minimise any bias, the selected respondents were recruited from different topographies and were of diverse age ranges.

The in-depth interviews conducted in North Luwu (between the 5th and 7th of March 2015) were facilitated by Swisscontact's field coordinator who had finished the training sessions four months earlier in five villages, thus gathering the farmers was relatively challenging. Four interviews were conducted, the first interview was conducted with two key informants from different villages who were friends and had casual acquaintance, and the last three interviews were conducted individually. All the key-farmers had been exposed to government programs and private sustainability initiatives. Although none of them had been certified, they frequently accessed transnational firm buying units such as Ecom and Comextra Majora (a joint venture of Barry Callebaut). They were of diverse ages but tended to be slightly better off financially than the average farmers, as they had multiple cocoa farms and (or) in combination with owned rice fields and other business (re. seedling and grocery shops).

The key informants from the Indonesian government were representatives of four related ministries. As well as asking questions about cocoa-related policies and programs, areas in which the actors were mainly engaged and coordinated, questions also focused on their responses and opinions regarding the ongoing corporate sustainability initiatives. The representatives of four ministries were interviewed: Ministry of Agriculture; Ministry of Industry; Ministry of Trade, and the Coordination Ministry of Economy (see Appendix B.1 for details). These interviews were conducted in their office in Jakarta, except for the respondent from the Ministry of Industry who preferred to be interviewed outside the office (re. coffee shop) because of less private shared office.

The next in-depth interviews were conducted with key actors who had directly designed and implemented the cocoa sustainability programs. They worked for transnational firms based in Makassar and Jakarta. Some key informants from the firms held managerial positions with their own sustainability initiatives for more than a year. Thus, they had a better understanding of how each of the initiatives was implemented, from the technical process stage to coordination and building relationships with the other key stakeholders. As well as exploring the different positions of the firms in the cocoa value chain, for example Olam and Ecom were major suppliers for Mars and Barry Callebaut was a major supplier for Nestlé, technical questions were asked how they were delivering sustainability initiatives.

The interviews also explored their relationships beyond the market sphere. All the interviews were conducted on an individual basis, some at different times in different circumstances. Interviews with MSI certification manager and coordinator were conducted during the acquaintance of two separate CSP meetings. Separate interviews were also conducted with one member of the Olam sustainability team after the CSP meeting in 2014 and one phone interview with the sustainability manager in 2015. Interviews with Ecom-TMCI sustainability manager were conducted twice in 2014 and 2015. An interview with the Director of Sustainability Agriculture Development Procurement, Nestlé Indonesia, was held in his Jakarta office in 2015. Following the CSP meeting in 2015, an interview with Barry Callebaut' Sustainability manager was held in in Makassar, and an interview with BT Care manager was held earlier during the field visit in Mamuju, April 2014.

The main challenge faced when arranging the interviews with both transnational firms and government key informants was the amount of time spent on making appointments. Some of the respondents found that they initially had to cancel or postpone appointments few times, even though the interviews were often undertaken at their own premises.

b. Semi structured interviews

Longhurst (2009) describes semi-structured interviews as self-conscious, orderly, partially structured conversations that fall between prescribed structured and unstructured interviews. In this study, the semi-structured interviews involved actors connected with the cocoa sector. Selection was based on organisation participation in the cocoa sector; and, occasionally representation tended to overlap with key informant interviews. But different individuals participated, particularly from the transnational firms with less influence on design, but more focus on technical aspect of delivering sustainability initiatives. The proportion of semi-structure interviews was aim to proportionally based on the level of current interventions and engagements in Indonesian sustainability discourses. The higher proportion with NGO background who has concern over the social and environmental problems, certification bodies, and management team of cocoa related partnership platforms (e.g. CSP, PISAgro, and Dekaindo).

To differentiate from the in-depth interviews described above, the format of the semi-structured interviews was somewhat spontaneous and informal. For example, interviews were sometimes conducted on the sidelines of specific events, e.g., at International cocoa conferences, several CSP multi-stakeholder meetings, and when visiting the ongoing implementation of the Rainforest Alliance program. Generally, the interviews lasted for between 30 minutes to more than an hour.

Interviewees were assured of the confidentiality of the information provided and that anonymity of their responses would be strictly observed.

Table 3.2 List of respondents and focus of questions for semi-structured interviews

Respondent groups	Number of respondent	Focus of questions
1. Firms		
- Mars		Why have they engaged with sustainability initiatives?
- Mondelēz	6	How are their relationships with other firms and their suppliers?
- BT Cocoa		How do they ensure that the initiative contributes to livelihoods?
- PT Olam Indonesia		In what ways are they engaged with the government?
2. Certification bodies		
- Rainforest Alliance		How are they connected to the private firms?
- UTZcertified	6	How do their opinions work with private firms and the challenges?
- Control Union		Which codes/standards have proven difficult for farmers to comply
- Bio-Cert		with?
		What are their opinions about the firm responsible for sourcing
		standards?
3. International and local NGOs		What are the challenges facing farmers participating in the value
- VECO	8	chain?
- WASIAT		Who drives the sustainability initiative?
- Swisscontact		What are their opinion about working with private firms and the
		challenges?
4. Development agencies		
- IDH	2	Why are they supporting sustainability?
- IFC		What are their opinions regarding the challenges of working with
		private enterprise and the government?
5. Forums		Who defines the incentives and design activities?
- CSP		To what extent do forums shape relationships with the government
- PISAgro	5	and other stakeholders?
-Dekaindo		How does the forum connect with other stakeholders? And the
		challenges?
6. Industry Associations		-
-ASKINDO	1	What are their major concerns on the cocoa sector? And why?
		To what extent does the association have a relationship with the
		government and other stakeholders?
7. National and local politicians		How do they engage with the farmers to maintain this relationship?
closely related to the policy	3	What kind of policies and/or support have been delivered to the
makers	-	farmers?
8. Research Institute	3	Who drives the research themes or focus?
- ICCRI	-	How does ICCRI engage with other actors?

The interviews were conducted with industry associations, development agencies and certification-associated bodies, such as UTZ Certified and Control Union (see Appendix B.2). Table 3.2 presents informants for semi-structured interviews and the key focus of questioning. Most of the semi-structured interviews were conducted during and after the CSP multi-stakeholder meetings, including the first general assembly meeting, which was convened on 26 March 2014. The focus of the discussion was upon updating the status of CSP and how to a deliver the CSP roadmap. Some firm representatives (Olam Indonesia, Mars and BT Cocoa), who held positions as farmer trainers

and coordinators, participated in the interviews, along with local NGOs like Wasiat (which has currently partnered with Veco to deliver the cocoa chain development program).

During the second period of field work, on 4 February 2015, CSP hosted a coordination meeting of task forces. Discussion centred on how to harmonise the various sustainability initiatives with the CSP roadmap. This coordination meeting was attended by major actors who had implemented sustainability programs along with a few new members of the partnership. Some interviews were conducted during the breaks with firm representatives (Mondelēz and Barry Callebaut) and Swisscontact and CSP representatives. During the following two months, another general assembly meeting was held in Jakarta. It was hosted by the Ministry of Agriculture on 15 April 2015. The meeting was attended by representatives from other ministries, industry associations, forums and the Indonesian cocoa research institute. I attended these meetings as an observer and used these opportunities to conduct interviews during lunch breaks and in between the meetings (with the head of Dekaindo, an ICCRI researcher, and a representative of IFC and PISAgro).

The interviews with the certification body were achieved by visiting the Rainforest Alliance branch office in May 2014. Interviews were conducted with the current project manager and the training coordinator at the office, continued over lunch, and when visiting some of the project areas. An interview with one of the Rainforest Alliance auditing partner who responsible for assessing the certification process was held with one of Bio-Cert auditor through phone interview in May 2014, he had been assessing the certification areas of Mars and its suppliers.

The interviews with politicians were conducted during the second period of field work. It was rather difficult to link the study with their participation because they had an indirect relationship with the design and implementation of the government's program and policy, particularly with the Gernas kakao and trading policy. However, as party members sitting on the House of Representative, they understood the political process regarding the program and/or policy negotiations in the national and local level. At the national level, interviews (13 and 17 April 2015) were undertaken with two assistants of a West Sulawesi politician¹⁴ who candidly revealed how politicians can interfere with and negotiate the selection of the program's preferred areas. At the local level, interviews were conducted on 13 February and 10 March 2015 with two Golkar Party politicians who explained the rent-seeking relationships between politicians and bureaucrats.

3.2.2 Content analysis

Content analysis is useful for examining the trends and shifting opinions evident in different documents including reports, media releases, public statements, and news media. The method has been utilised widely by the social sciences. This study focuses on a qualitative analysis of such content, where the analysis extracted from different sources aim to be complementary to other

¹⁴ This politician sat on *Komisi 4* of national house representative who cover the issue of agriculture, food security, forestry and maritime affairs.

methods such as interviews and secondary data analysis. Table 3.3 shows the sources and type of information gathering from the affiliated actors and media.

Table 3.3 Different sources of information for content analysis

Published by	Form of publication		
1. Chocolate – cocoa firm websites	- Reports		
- http://www.Nestlé .com/investors	- Media releases and public statements		
- http://www.mars.com/global/about-us/policies-and-	- Other publications (e.g., training module,		
practices/cocoa-policy	presentations, supplier code of conduct)		
- https://www.barry-callebaut.com/about-us/media			
2. Government websites	- Policy and technical reports		
- Ministry of Agriculture http://www.pertanian.go.id/	- Media releases (re. media perkebunan, media		
- Ministry of Industry http://www.kemenperin.go.id/	industri)		
	- Policy outputs (e.g., regulations, program guidelines)		
3. Multi-stakeholder websites	- Newsletters		
- Cocoa Sustainability Partnership, http://www.csp.or.id/	- Roadmaps		
- Partnership for Sustainable Agriculture, http://pisagro.org/	- Other publications (e.g., module, presentation)		
4. Independent (online) news media (2011-2016)			
- International online news	- Update news on the state activity of the industries		
(<u>www.confectionerynews.com</u> ; <u>www.foodnavigator.com</u> ;),	- Updated news linking to agro-industries including		
confectionarynews is online news focus on global chocolate,	policies, programs, events, critiques, and perceptions.		
cocoa, sugar confectionary gum, and biscuit.			
- Mainstream online news (<u>www.theguardian.com</u> ;			
www.wjs.com; www.cnbc.com)			
- Domestic industry news (<u>www.kontan.co.id</u> ;			
www.industri.bisnis.com)			

The application of content analysis in this study aims to find a similar pattern in messages gathered by other research methods, particularly the interviews. To minimise the ambiguity of context analysis and enhance the validity, the context analyses were sourced from specific respondent publication websites and independent online news media regarding sustainability initiatives and the broad development of the cocoa sector.

3.2.1 Participation in stakeholder meetings

Participation in different stakeholder meetings during fieldwork provided visual information and interaction between the stakeholders during the meetings. This approach partially adopted the participant observation method as frequently applied in human geography (Walsh, 2009), and could be considered as a kind of event ethnography. The aim is to observe the discussion process regarding the meeting agenda, what are the main debates and who has dominant voice during this process. During this process the industrial actors had strongest voice over emphasizing the productivity aspect within the context of sustainability, the NGOs representatives were more focusing on enabling environment to ensure the adoption of good farming practices rather than challenges the concept and emphasising the environmental and social issues. Like participant observation, this approach positions the researcher as both a participant and an observer. Exclusion from the in-situ context is necessary to maintain naturalness and minimise disruption by the presence (Walsh, 2009). Both periods of fieldwork in 2014 and 2015 included participation at

different scales of stakeholder meetings, from international conferences to local farmer training, national CSP general assembly meetings and regional certification workshops.

Important participant observation during the first period of fieldwork occurred at the sixth International cocoa conference and dinner on 15-16 May 2014, an event jointly funded by the World Cocoa Foundation (WCF) and Indonesian Cocoa Association (ASKINDO). The theme was empowering smallholders in the interests of a sustainable cocoa industry. The speakers were mainly from the major cocoa and chocolate firms and their affiliations. Since the membership of WCF and ASKINDO are dominated by the industrial actors, this conference certainly accommodating the industrial actors' agenda to ensure the supply security and effectively integrating the smallholder farmers into the global cocoa value chains. Some showcased success stories directly from assisted farmers. The onsite implementation of sustainability initiatives and programs was observed in one-day workshops that introduced certification schemes. These were followed by the establishing of a farmer organisation structure to accommodate administrative compliance with the certification process in Luwu (31 May 2014). The workshop was attended by a Mars field representative, leaders of assisted farmer groups from different villages across Luwu, and Swisscontact staff. Observation continued in Mamuju where several activities conducted by different actors included separate farmer training and coordination of the updating of the setting up of a cocoa forum in Malunda, Majene. This was part of a Sustainable Cocoa Production Program (SCPP). As well, it followed the progress of a BT Cocoa-introduced fermentation market scheme among a few farmer groups.

The other main observation was undertaken when attending several partnership meetings convened by the executive office of the Cocoa Sustainability Partnership (CSP). During the first period of field work, the office hosted quarterly general assembly meetings attended by a range of cocoa stakeholders. The focus was on the change of status and organisation structure of the CSP on 26 March 2014. Following the updating of the CSP structure, during the second period of field work, the coordination meeting of different task force members pursuing the CSP roadmap (4 February 2015) was observed, as was another general assembly meeting hosted by the Ministry of Agriculture (15 April 2015). By attending these meetings as an observer, the former served as a dynamic space of interaction among different actors. From these observations, I identified who the dominant actors were during the discussions: what agenda and issues under intense discussion; who raised the issues; and, how different actors imposed and negotiated their ideas. To optimise both time and accessibility, some of this participant observation of different activities was followed by interviews and separate discussions, sometimes during a break or at the end of the activities.

3.2.2 Questionnaire survey

The term 'questionnaire survey' generally applies to descriptive research that provides measurable information regarding the different nature of spatial and social variation of individual or household attributes, attitudes and actions. This study derives its information from an earlier questionnaire survey I conducted in 2012 as part of an ACIAR Pilot study (HORT/2010/011 ACIAR project). This focused upon developing sustainability indicators for assessing the impact of emerging certification schemes in West Sulawesi (Hafid et al., 2013). The survey covered broader questions regarding sustainability at the household level. They provide an understanding of the household structure of Sulawesi small cocoa producers, and the livelihood variables regarding the risks and competitiveness involved in managing cocoa farms. The survey recruited 158 farmers from West Sulawesi provinces,

76 respondents were participating in a certification scheme, and 82 were not participating or also knows as 'control' group. The respondents were randomly sampled based on the list of farmer groups provided by local NGO who responsible for delivering certification schemes and district estate crops extension services (see Table 3.4).

Table 3.4 Information collected using a questionnaire survey in 2012 (see Appendix E)

Information	Question number		Question number	
1. Livelihood				
- Household structure	B.1			
- Source	B.2/ B.2/ B.8/B.9/			
- Competitiveness	C.8/C.9/C.10/			
2. Livelihood risk				
- Revenue spending	C.13/C.14/			
- Micro-finance accessibility				

3.2.3 Focus groups

West Sulawesi has become the target sustainability intervention area for Nestlé and its suppliers (Barry Callebaut and BT Cocoa). To date, their sustainability initiatives have been mainly supported and implemented by Swisscontact and at arms' length by the suppliers. The initiatives were mainly implemented on a group basis with affirmed support from the local government. For this reason, information about this region, particularly at the farmer level, was collected at focus group discussions. Secor (2009) suggested that the strength of this method stems from the interaction among those participating in the discussion, commonly followed by disagreement and debate surrounding particular issues. For the researcher, this interaction can prove beneficial. It requires observing the social interaction, discerning who has the dominant voice, recognising the actors' relationships to each other, and becoming cognisant of the statement being argued.

I organised a total of eleven focus groups in Mamuju and Polewali Mandar District, the first four focus group were conducted during the first field work in 2014 and the rest were conducted in 2015 (see Appendix B.3). The male farmers were dominated most of the group discussion, partially because these discussions were arranged by the actors who currently providing technical assistances. Although the Sustainable Cocoa Production Program (SCPP) encouraged female farmer participation, but it remains common norms that the male farmers who mainly responsible for managing cocoa farmers, while the spouse tended to assist type of activities that not necessarily leaving the domestic works such as drying-sorting cocoa, and occasionally harvesting. Also, the assistances were emphasising the improvement of cocoa farm production that was closely related to the male farmer responsibilities.

Generally, the group discussions lasted an hour or more. Farmers were informed that they were free to interrupt the discussion whenever they disagreed with other farmers' opinions. The first question asked whether the farmers were involved in any sustainability programs: how they started and carried out a program; what they had learned; any changes in farming practices and if not why not; any changes in marketing practices; were they still in debt to collectors or local traders (if yes, why), were other family members involved in farming practices; if they saw direct access to transnational

firms and if so, will these initiatives open up opportunities for diversifying their livelihoods; any increased demand for casual farming jobs; and, if they were involved in government recruitment and participation programs. Because the interviews were conducted in rather small numbers with combination of age groups, most of the farmers became actively engaged in the discussion, albeit some elderly farmers seemed a little tired. Some middle-aged farmers were suspicious of the interviews and rather sensitive when asked financial questions such as the status of their debt with the collector, and how many government incentives (that had been promised) had been transferred to the group account.

The first period of field work in Mamuju was undertaken on April 2014. This was during the ongoing implementation of SCPP and BT Cocoa as the major partners actively promoting a fermentation market scheme among the farmer groups and collectors. The two group discussions were held after BT Cocoa's promotion of a fermentation market scheme in Pamulukkang village and during farmer training affiliated to the SCPP program in Mamuju. Another two group discussions were conducted with the certified farmers from Polewali Mandar District on May 2014. These group discussions were arranged by local officials. The farmer groups, who had a close relationship with the local government, had been participating in Gernas kakao and PPHP programs, and had been certified through the PT Ecom-TMCI certification scheme.

The second period of field work was undertaken also in Mamuju and Polewali Mandar District during February 2015 with different farmer groups who also engaged with different sustainability programs. Like the previous year, these discussions were also supported by the same organisations and institutions. The aim of these second group discussions was to strengthen the information previously gathered and update the ongoing implementation of sustainability programs. Few in the groups were sensitive about financial accessibility. They were open to explaining the relevant details, and how they became involved in both private sustainability and government programs.

3.2.4 Quantitative data analysis

This secondary information tends to be provided by the legitimate institution and organisation that could not be obtained from the qualitative approach, but will complement the findings from other methods. For example, the information on declining national cocoa production but increasing areas of cocoa farming have raised the concern over the supply from the industrial actors since increasing the harvesting areas are not necessarily followed by increasing supply, while the actors have invested on processing facilities. Also, coherent information provided by the industrial actors linking to increasing investment in domestic cocoa industry is following by increasing export revenue from cocoa bean to cocoa products that can be generated from international organisation such as FAO.

The secondary data was generated from the Indonesian Bureau of Statistics (BPS), United Nations global data base systems including faostat (http://www.fao.org/faostat/en/#data/TP), ICCO annual reports, Nestlé annual reports, Cocoa Barometer report (2015), and certified cocoa data published by certification bodies (e.g Rainforest Alliance and UTZcertified). Detailed information about different spatial scales of cocoa production, consumption and trading was extracted from the Indonesian Bureau of Statistics, while historical trading data overview of processed cocoa and chocolate in the Asia Pacific region was extracted from FAO statistic database, and global cocoa production and consumption data was compiled from ICCO annual reports. Secondary data of the

state of certified cocoa market operations published by certification body was extracted longitudinally every year from respective website, for example Rainforest Alliance. This secondary information aimed at supporting and complementing the primary qualitative information gathered from interviews and focus group discussion.

3. 3 Data triangulation

Adopting a case study approach, this study employs multiple methods to gather information. And, because each method has its strengths and weaknesses, triangulation is introduced for convergence and validation. Triangulation is an analytical technique that offers a combination of different methods for study of the same phenomenon (Jick, 1979; Nightingale, 2009). In other words, it enables cross checking of information gathered using different methods. When comparing different data-sets generated by each method, Nightingale (2009) proposes three aspects of data-set comparison: convergence, complementarity and divergence. In this study, triangulation's primary purpose is to analyse the consistency and relevance of the data-sets. Convergence and complementarity are triangulation's primary strategy for understanding the overall situation.

Convergence is used to determine the consistency of information elicited by qualitative methods (i.e., interviews, content analysis, and focus groups) or by quantitative information. Interview responses reflect individual opinions and can be subjective vis-à-vis the professional integrity of a specific organisation. On occasion, responses can be over-emphasized. The reality can be confirmed by observation and supported by quantitative data. For example, a firm expounded on the different forms of technical assistance that had been provided to several thousand smallholder farmers. But, the smallholder farmers confirmed that this assistance was training and was only delivered to the leaders of the farmer groups, not to each individual member of a group. Complementarity involves seeking a fuller picture of the data produced by combining information from different methods. For example, according to an interview with a government official, farmers will benefit from a combination of support for fermentation facilities and a differential price for fermentation. But, limited adoption of bean fermentation has been observed due to lack of commitment by the involved parties. From the perspective of farmers, a combination of reasons included farm productivity, fewer significant price incentives, and additional labouring work.

4. The Global Production Networks for cocoa-chocolate

This chapter provides an overview of the dynamics of global cocoa-chocolate production networks. It begins with an overview of recent developments pertinent to cocoa, partially configured by transnational cocoa-chocolate firms seeking to retain (and improve) their global competitiveness within a concentrated market structure. This chapter applies the framework of GPN 2.0 to demonstrate how leading industrial actors respond to the competitive capitalist dynamics within their networks to devise new strategies that reconfigure their production networks across space. This encompasses the extent of engagement of lead firms with non-economic actors in delivering the emerging firm sustainability initiatives.

4.1 Overview of cocoa development (in Asia Pacific)

Before the global cocoa production networks characterised by a fragmented production of cocoa in the South while the consumption of cocoa bean in the North, but the recent development shows growing cocoa industries investment in cocoa producing regions and less cocoa bean trading globally. Until recently, Ivory Coast becomes the largest cocoa processor and replaced the Netherlands, in Asia with the growing of foreign direct investment in cocoa industry, Indonesia has replaced Malaysia and Singapore.

However, the industrial development in cocoa producing countries are dominated by few numbers of transnational chocolate-cocoa industries while the domestic processors facing both vertical and horizontal challenges to remain competitive. The increasing concentration amongst intermediate actors (cocoa processors) has resulted in vertically integrated processing and trading segments, through mergers and acquisitions (see section 4.1). While global traders are becoming bulk processors, the well-established cocoa processors are also diversifying their processing activities into the production of couverture (industrial) chocolate. The latter involves the production of a wide range of chocolate products in addition to the intermediate cocoa products of cocoa butter, powder and paste (see Figure 4.5). By establishing vertically integrated processing facilities, global processing-trading firms are putting competitive pressure on small-scale domestic processors from cocoa origin countries such as Indonesia.

In the Asia-Pacific region, for more than a decade there has been increasing value of trading in cocoa based products following the strategic expansion of global industrial actors. For example, Mars, which has become the market leader in China, and now controls approximately fifty per cent of the market there (Allen, 2010). Mondelēz, which is slowly becoming the dominant chocolate maker in Malaysia, has also increased its investment in India and China. Nestlé, the leading chocolate maker in Japan and Thailand, recently acquired the Chinese confectionary firm, Hsu Fu Chi (see Table 4.1). In parallel with such expansion, chocolate exports (and indeed imports) from these countries have also expanded since 1990 (see Figure 4.1).

Figure 4.1 A comparison of the growing export-import value (US\$) of chocolate and confectionary in the Asia-Pacific region

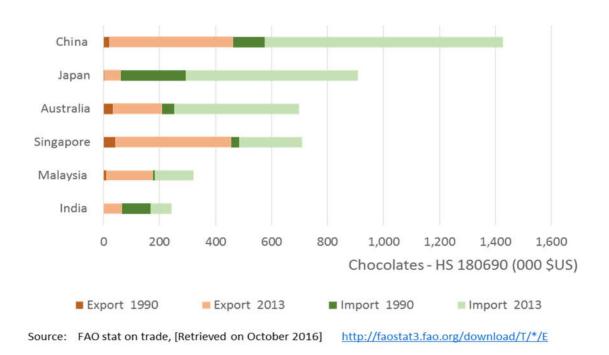
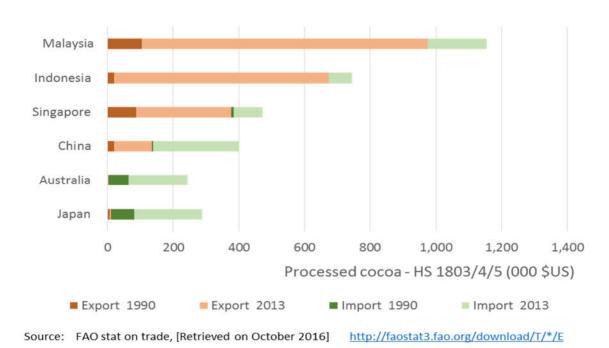


Figure 4.2 A comparison of the growing export-import value (US\$) of processed cocoa in the Asia-Pacific region



Concomitant with the significantly growing markets in the region, Malaysia and Singapore, and later followed by Indonesia, have strengthened their position in the cocoa processing chain segment. They aimed to feed the growing regional market (including China) based primarily on cocoa bean supply from Indonesia. In seeking to capture value from market expansion and increasing demand of

processed cocoa, in 2010 the Indonesian government introduced an export tariff on unprocessed cocoa beans and fiscal incentives for new investment to drive industrialisation of cocoa sector. By 2013, the export value of Indonesia's cocoa products had increased significantly (see Figure 4.2), slowly replacing Malaysia as the major Asian cocoa processing hub. However, Singapore too has shown a remarkable capacity to become an export leader and capture export value from both the cocoa processing and chocolate manufacturing sections, despite relying on imported beans and a relatively small market.

Recent new investments, acquisition by leading firms and their partners, followed by increasing trade within the Asia-Pacific region is progressively creating alternative cocoa-chocolate production networks. Branded manufacturers are looking towards the populous countries of China and India as favourable regions to establish new manufacturing facilities and research-development centres. New investments in Indonesia-based grinding meanwhile has meant processing capacity now exceeds the country's supply capability of raw cocoa beans. Because of limited capability of smallholder farmers to keep pace with increasing downstream demand, securing supply has become one of the primary goals of the North-based cocoa-chocolate firm investment in sustainability initiatives, specifically in the main cocoa producing countries in Asia like Indonesia.

4.2 Stages in Cocoa-Chocolate production networks

The GPN approach foregrounds the key *economic actors* involved in the process of development. Yeung and Coe (2015:29) define GPNs as "organisational platforms through which actors in different regional economies compete and cooperate for a greater share of value creation, transformation and capture through geographically dispersed economic activity." Indeed, the historical perspective of cocoa-chocolate production networks shows distinct regional patterns, especially between the North American markets and Europe.

Most of the early chocolate manufacturers started small-scale as family-owned businesses, e.g., Cadbury and Rowntree in England, and Mars and Hershey in the US in the late 19th and early 20th century. Overtime, these family owned businesses have grown into mixed-portfolio companies and global market leaders, leading to considerable market concentration. For example, only Hershey and Mars are estimated to contribute to more than 70% of the US chocolate market share (Hershey, 2016). European chocolate production has a much stronger culture of smaller chocolatiers and tends to be somewhat less concentrated (Caobisco, 2016). In terms of upstream development, colonialism contributed historically to the introduction and distribution of cocoa growing outside of Mesoamerica, across Africa and Asia. Following the emerging firm sustainability initiatives, the stage of upstream cocoa production has added inputs in terms of farming management assistance, while the consumption segment has become increasingly lean as the intermediate actors performing two function, trading and processing. Figure 4.3 sets out the basic stages and actors involved in the cocoa-chocolate network.

Vending machines Owned shops Supermarket chains Retailers Airport shops Consumer product marketing Consumer products (eg. confectionaries, bakeries Cocoa trader powder, and butter) and producers Chocolate couverture Cocoa collecting Cocoa bean production Assisted smallholder farmers Agro-Inputs support and Agrifinance Agroinputs Certification Multistakeholder institutions programs agencies assistances Processed cocoa trading Cocoa bean trading Technical and support assistances

Figure 4.3 Cocoa-chocolate production networks

Source: author' own work

Within the last five years, there has been significant reconfiguration of industrial segments of the network through global acquisitions and joint ventures entered into by dominant firms (see Table 4.1). This period has witnessed the branding chocolate manufacturers' expansion into various populous and emerging countries (see table 4.2). With market expansion, the branding manufacturers (i.e. Nestlé, Hershey, Mondelēz and Petra Foods) attempted to strengthen their core competence by outsourcing cocoa processing facilities via long term contracts with competent suppliers. Responding to this changing strategic environment and the emerging demand for sustainable cocoa, global cocoa trading firms functionally upgraded their position into cocoa processing-trading firms. This vertical integration along with recent network configurations has eliminated the international trading function through acquisition and joint ventures (a trend identified earlier by Fold, 2002). For example, Cargill acquired ADM's couverture production and Olam International acquired ADM's cocoa processing facility. Barry Callebaut expanded geographically through the acquisition of Petra Foods cocoa grinding facilities and has continued construction of new facilities within emerging markets and cocoa-producing countries.

Table 4.1 Major acquisitions of cocoa-chocolate companies after 2010

Acquisitions	Original function	Current function	Type of firms
January 2010, Kraft acquired Cadbury.	Food and snack manufacturing		Lead firm, focus on high end-product and market definition
October 2012, Kraft renamed chocolate and confectionary divisions Mondelēz Incorporation.	Confectionary and chocolate manufacturing	Branded chocolate manufacturing	
July 2013, Barry Callebaut acquired Petrafood cocoa division. September 2013, Barry Callebaut opened cocoa grinding factories in Indonesia through a joint venture with PT Comextra majora.	Cocoa and chocolate producers	Cocoa processing and chocolate couverture, chocolate beverages	Strategic partner ¹⁵ , Focus on development of chocolate products and generic cocoa products.
November 2013, Ecom trading acquired Armajaro cocoa trading.	Multi-commodities global trading	Cocoa trading and processing	Specialised supplier ¹⁶ (Agro-industries)
September 2014, Cargill acquired ADM Global chocolate division.	Multi-commodities global trading	Cocoa trading, processing and chocolate couverture	Strategic partner, focus on development of chocolate products and generic cocoa products
October 2015, Olam acquired ADM cocoa grinding.	Multi-commodities global trading	Cocoa trading and processing	Specialised supplier (Agro- industries)

Source: multiple online news media and firm reports

4.2.1 Branded Chocolate-confectionary manufacturers

Due to their roles in controlling and coordinating production networks, and engaging in high-value production activities, chocolate confectionary manufacturers are generally considered lead firms. The downstream segments of the cocoa-chocolate GPN are generally characterised by the oligopolistic structure of branded manufacturers and cocoa processing firms. However, today these networks are becoming more complex geographically. For example, the mature European market is a combination of global branded manufacturers and medium-scale homemade artisanal chocolate makers (Caobisco, 2016), while the aging population of the Japanese market is showing increased concern regarding the health aspects of cocoa-based products (Doi, 2013). In response to diverse market demands and characteristics, the distribution of end products has also diversified from food

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¹⁵ Strategic partner refers to the supplier who become partial or complete solution for the lead firm, for example Barry Callebaut whose entered strategic partnership for not only supplying, but also shared investment in downstream research and development for premium products, published 26 April 2007, [Retrieved, January 2017] https://www.barry-callebaut.com/news/2007/04/hershey-and-barry-callebaut-announce-strategic-supply-and-innovation-partnership

¹⁶ Specialised supplier refers to the supplier who has significant role in supplying for not only primary product, but also complementary products (e.g. sugar and edible nuts).

chain retailers to vending machines and some manufacturer-owned shops (eg. Lindt, and to a lesser extent, Mars and Cadbury). Following the recent trends of online markets, the major branded manufacturers have also signed partnership contracts with e-commerce giant, Alibaba. For example, the Chinese consumer may be sourcing Nestlé or customised packing of Mondelēz brands produced in Europe and the US rather than simply consumed domestic products ^{17,18}.

Despite brand being a prominent feature, chocolate and confectionary manufacturers have established industrial market development by investing in product-process innovation and consumer engagement to capture value from the differentiated market. Among the six largest global manufacturers (i.e., Mondelēz, Nestlé, Mars, Hershey, Ferrero and Lindt&Sprüngli), only Mars and Ferrero have remained family-owned enterprises for more than a century. The others have grown into corporations with less private control and more complex ownership structures.

Mars, which was originally established as a chocolate-confectionary firm, has grown into a more diversified food and pet food company. The firm established a global presence and market dominance after it acquired Masterfoods (in 1967) and Aquarium pharmaceuticals (API) in 2007, in addition to following the geographic market expansion by establishing new factories and developing product portfolios. Mars extended its proprietary investment into scientific experimentation on seeking novelty and functional compounds, which it later developed under the Symbioscience and Life Science division. Utilising a combination of end-product innovation and grounded research, Mars applied exclusive sourcing strategies as they maintained in-house cocoa processing capacity nearby field research centre, such as in Sulawesi¹⁹. Mars cocoa processing presence in Indonesia was integrated with the Mars Symbioscience division, whereas vertical integration of sourcing and processing cocoa to supply the mainstream brands of Chinese factories (Respondent CC1, pers. comm, 2014; Respondent SS1, 2014).

Allegedly motivated by his concern over high infant mortality numbers, Henri Nestlé invented dairy-based infant foods such as condensed milk and infant cereals. As well, he collaborated with his business partners, Peter&Kohler to develop chocolate milk²⁰. Primarily focusing on the innovation of dairy-based products, the firm diversified its product portfolios as a growth strategy to increase global competitiveness through different strategies from acquisitions, mergers, and geographical

¹⁷ Nestlé offers oversea products to Chinese consumers through new partnership with Alibaba, published on 09 June 2016 http://www.confectionerynews.com/Manufacturers/Nestlé-announced-partnership-with-Alibaba

¹⁸ Mondelēz partners with China' Alibaba to support 1bn global e-commerce goal, published on 11 April 2016 http://www.confectionerynews.com/Manufacturers/Mondelez-partners-with-China-s-Alibaba

¹⁹ Indonesia is a vast and beautiful 17,000- island country in Southeast Asia. It is the heart of the CocoVia brand because it has source of the cocoa beans used in our patented Cocoapro process. [Retrieved, February 2017] https://www.cocoavia.com/how-we-make-it/investing-in-indonesia? SID=U

²⁰ Nestlé the company history, the pioneer years 1866-1904, [Retrieved, January 2017] http://www.Nestlé.com/aboutus/history/Nestlé-company-history#tab-1866

expansion of existing industries. Although today Nestlé has a significant global market share of chocolate confectionary, internally this segment contributes less than 10% of total revenue, behind dairy-based products, beverages, nutritional and health care, and pet care segments (Nestlé, 2016). Nestlé employs a long-term outsourcing contract strategy with its multiple supplier partners rather than maintaining an integrated production network. In Indonesia, Nestlé focuses its production on chocolate flavoured dairy products and beverages, and does not have any investments in chocolate confectionary manufacturing.

4.2.2 Cocoa processing and chocolate couverture

Within the last fifteen years, this segment has undergone major restructuring following the outsourcing strategies of branded manufacturers, who shifted to long-term supply contracts with strategic partners and (or) specialised suppliers. Cognisant of the intense global market competition, the branded manufacturers switched their focus to their core competencies (branding and product innovation). Nestlé for example outsourced its processing facilities to Petrafood and ADM (Oxfam, 2008). In 2016, Barry Callebaut acquired a Mondelēz chocolate factory in Halle, Belgium²¹. The acquisition expands the production capacity of Belgian chocolates and filling, and involves a long-term agreement with Mondelēz for supplying liquid chocolate for *Côte D'Or* and *Milka* brands. With increasing market demand for mainstream chocolate brands, Nestlé and Mondelēz have disintegrated their chocolate and cocoa processing facilities to their supply partners and entered into long-term supply agreements. Following this trend, the dominant trading firms seized the opportunity to functionally upgrade and strengthen their intermediate position in the fragmented industrial segments through acquisition of the cocoa processors (see Table 4.1).

Initially, this segment's focus was upon processing cocoa bean into cocoa products, with pure cocoa mass or liquor further pressed (and alkalised) into cocoa butter, cake and powder (see Figure 4.4). In the process of optimising the value of cocoa products, on-farm fermentation of the cocoa beans plays a crucial role in developing the distinct flavour of these cocoa products. The fermentation process is highly crucial for those firms who produce couverture chocolate, as the product is preferred and sourced by artisanal chocolatiers and chocolate makers. Due to the wide range of cocoa-based (or simply flavoured) products, this segment was divided into high-end processed cocoa produced by the chocolate producer - also called couverture - and low-end processed cocoa that is currently integrated into the firms' trading activities. The high-end processors like Barry Callebaut, Cargill and Blommer are vertically integrated cocoa-chocolate industries, which add value to industrial chocolate through additional processes (e.g. reducing calories, sugar, and fat), purposes (e.g. filling, coating, and decoration), and functional attributes (e.g. polyphenols and probiotic). Also, although Barry Callebaut is considered a strategic supplier for manufacturing firms, it has also

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²¹ Barry Callebaut plans to acquire a chocolate plant of Mondelez International in Halle, Belgium, under an agreement to supply Milka maker of 30,000 tons of liquid chocolate annually, published on 15 September 2016, http://www.confectionerynews.com/Ingredients/Barry-Callebaut-acquires-Mondelez-Belgium-Cote-D-Or-chocolate-factory. Barry Callebaut completes acquisition of chocolate production facility in Halle, Belgium, published on 31 December 2016, [Retrieved, January 2017], https://www.barry-callebaut.com/news/2016/12/barry-callebaut-completes-acquisition-chocolate-production-facility-halle-belgium

developed various innovations from improving cocoa fermentation processes to exploring the value added from intrinsic novel attributes of cocoa.

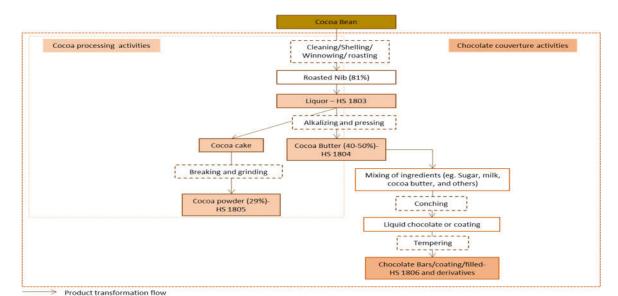


Figure 4.4 Industrial cocoa-chocolate production process

Activity flow

Globally, couverture production is dominated by three major firms: Barry Callebaut, Cargill and Blommer. Although headquartered in Switzerland, Barry Callebaut was established in 1996 from the merger of Belgian chocolate maker Callebaut and French chocolate maker Cacao Barry. Following the merger, Barry Callebaut expanded its economic scale through the acquisition of chocolate brands from Switzerland (Carma), Germany (Stollwerck group) to Malaysia (KLK cocoa). Further expanding the scope of production, it acquired the Danish vending machine firm Eurogran A/S and began distributing beverage brands (i.e. *Van Houten, Caprimo* and *LeRoyal*) primarily in the European market²². At the same time, the firm also invested in new processing facilities in emerging markets. The firm also acquired the Tanzanian cocoa trading firm, Biolands International, to supply organic and sustainable certified cocoa, and established a joint venture with local trading firm PT Comextra Majora to establish a new cocoa processing factory in Sulawesi, Indonesia.

After protracted negotiations, the American-based agro-industries firm, Cargill extended its chocolate-producing functions by acquiring ADM Chocolate. The firm is now vertically integrated from direct sourcing of cocoa beans through to industrial chocolate production. It is also investing in high-end products through research and development, exploring the ingredients application and innovating to follow the dynamic consumer demand²³. Initially, Cargill was established in Indonesia

²² Important milestones of Barry Callebaut Group, [Retrieved, January 2017] https://www.barry-callebaut.com/about-us/company-history-0

²³Application centre focus on the exploring and assessing variation of new and combination ingredients, while the innovation focus on the consumer demand regarding the existing products. [Retrieved, January 2017] https://www.cargill.com/food-beverage/innovation/application-centers

simply as a multi-crops trading firm, but by 2014 it had commissioned a cocoa-processing facility in East Java.

The emergence of sustainability programs, as demanded by lead firms, has increased the supply chain management capacities required of cocoa grinders and traders. This has further increased concentration within this segment. Market demand for sustainable cocoa has required additional investment for establishing upstream outreach assistance, while the imposition of progressive export taxes (for example in Indonesia) has rendered exporting bean less profitable for the firms. Meanwhile, cocoa processors were facing volatile global cocoa prices after various external risks (e.g. political turmoil and Ebola outbreak) in Ivory Coast, as the largest cocoa producing country. These vertical and horizontal challenges have pressured the trading firms to strengthen their position in the network, but have also opened opportunities to add value from functional upgrading.

The Indonesian government's attempt to industrialise the cocoa sector successfully attracted new foreign and domestic investments. For example, BT Cocoa, already the largest nationally-owned cocoa processor, began opening upcountry buying units to support increased processing capacity. Olam established a cocoa plantation in the abundant land and low labour cost Island of Seram, in Maluku Province. But, as international firms expanded their geographical scale and scope, the smaller domestic processors struggled to remain competitive. It is ironic, therefore, that the same domestic firms who lobbied the Indonesian government for industrial policy are now being squeezed out by larger, more competitive foreign firms.

4.2.3 Cocoa collecting

Despite the ongoing restructuring of transnational trading firms towards integration upstream with farmers and downstream into processing, agricultural production remains dominated by smallholder farmers. Recognising the limitations appertaining to the development of inclusive farmer-based organisation, the collecting actors (i.e., cooperatives, collectors and assisted farmer groups) perform local intermediary roles connecting the dispersed farmers and supporting the large cocoa processors. Since this role is generally performed by local actors, the structure tends to be geographically diverse in term of economic scale and scope, thus this role depends on social structure of the cocoa communities to the extent of dominant state interventions.

West African domestic market for cocoa beans was subjected to different degree of state intervention before the liberalisation, for example, monopoly-monopsony state market boards (Ghana and Nigeria) or *caisses de stabilisation*²⁴ (Ivory Coast and Cameroon). Although, the state role in Ivory Coast has dismantled in 1999 and leave the price setting to the private actors, but Ghana market system remained partially liberalised after 1986. The Ghanaian farmers continue to supply the privatised marketing board, Cocoa Marketing Company (CMC) through licensed local buying companies and assisted farmer associations. However, the liberalisation also contributed to emerging non-licensed individual buyers and smuggling to neighbouring countries like Ivory Coast

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²⁴ The francophone resembles to marketing board and replicates the functions of the board in certain degree of governance, but not directly involving in the production process.

who offered a higher farm gate price (Mohammed et al., 2011). Meanwhile in Ivory Coast, liberalisation contributed to the increasingly dominant role of transnational trading firms (Kaplinsky, 2004) who sourced cocoa under market contracts with assisted cooperatives (many participating in firm sustainability programs) and existing local traders (re. *traitant-pisteur*). The downside of state monopoly system was the absence of competition, and a lack of transparency and efficiency, despite farmers receiving technical assistances and being protected from global price volatility. While within the Ivorian context, the liberal market led to slightly competitive market despite the lack of farm gate price transparency at the farmer level, uncertain technical assistance from the government, and increasing tax.

Meanwhile, in the fine-cocoa producer country, Ecuador, state intervention was absent from the market system, but was focused on product upgrading through farming inputs and technical support (Ahmed and Hemrick, 2015). As the biggest cocoa producing country in Latin America that followed by Brazil, the Ecuadorian cocoa value chain is dominated by collectors and traders of various scales, who are vertically linked to national exporters and producer associations with little industrial development (Ahmed and Hemrick, 2015). Exporters must ensure quality requirements are met before directly exporting to global cocoa processors like Blommer chocolate, Transmar commodity group, Barry Callebaut, and General Cocoa Company (Ahmed and Hemrick, 2015).

As a bulk unfermented producer country, cocoa collecting in Indonesia was previously dominated by collectors and local traders who earnt profits through volume and small incentives for quality, with limited transparency. As more actors participated in this segment, including transnational trading firms encouraged by value chain assistance programs (funded by the US government, as will be discussed later) to facilitate smallholder integration into the chain, quality and price transparency increased and the node became more competitive. However, the relationships between collectors and farmers were not easily severed because the relationship was not only about cocoa exchange. They often included additional roles, as financial service providers, merchandiser and input suppliers, and knowledge exchange agents, which elsewhere might be performed by separate actors outside of the supply chain. As beneficiaries of this combination of supportive functions and informal market contracts, farmers who obtained financial or agro-input services from the collector were morally obligated to sell their crops exclusively to the particular collector, resulting in a captive market. This captive relationship also extended between collectors and traders, although often shorter-term and limited to financial support especially during the peak harvest season. The collectors found accessing the formal financial institutions too complicated and less flexible, not reflecting to the nature of estate crops and farming communities.

4.2.4 Cocoa Bean production

While chocolate manufacturing and cocoa grinding is concentrated among a small number of transnational firms, cocoa production is concentrated among a few cocoa producing countries. Cocoa production in West African countries and Indonesia are performed by millions of smallholder farmers who generally own less than ten hectares of cocoa farms, while the production in Latin America was performed by small and medium cocoa producers, some of whom own almost fifty hectares of cocoa farms (Ahmed and Hemrick, 2015). Cocoa farming is laborious work. Pruning, fertilizing, agrochemical spraying, weeding, harvesting, fermentation, drying and quality sortation

are among the routine farm-level practices. For less than two-hectare size of cocoa farm, these practices remain manageable by four to five family members, but for the farmers who own larger areas, hired labour is required for at least part of the activities.

Declining farm productivity when farms exceed twenty years of age, combined with the complexities of environmental and social issues, have contributed to declining farm revenues. Gilbert (2008) demonstrated declining farmer revenues as a share of (the UK) retail chocolate price, with the lowest share (over the period 1976-2005) received by Ivory Coast, Ghana and Cameroon. Despite the combination of these issues burdening smallholder farmers, there has been a 30% increase in world production over the last fifteen years (see Figure 4.5). Remarkably, most West African countries showed consistently increasing annual production, in contrast to Asia Pacific countries and Brazil, where production has been stable or declining, lagging behind the growth in processing segment.

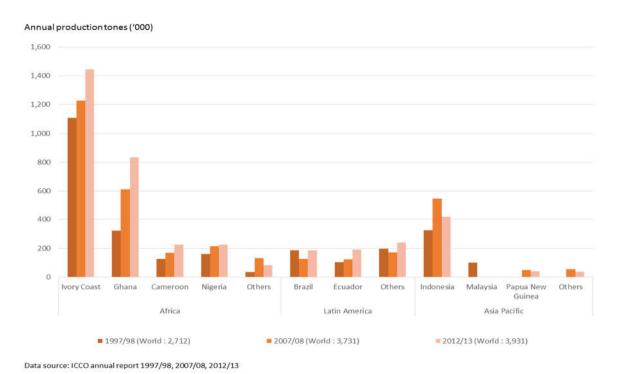


Figure 4.5 Changing annual cocoa bean production in major producing countries

Indonesian farmers continue to struggle to overcome challenges such as pest and disease infestation, and old non-productive trees that resulted in low yields. The uncertainty of farm household regeneration and the spatial complexity of rural livelihoods, have added to the ongoing social issues that threaten supply from Indonesia, thereby raising concerns amongst lead branded

chocolate manufacturers. Following these upstream issues, the industrial actors are investing in sustainability initiatives with the primary goal to ensure a stable supply of cocoa bean within this region.

Sustainability initiatives are being implementing globally in most producing countries, through different forms and arrangements. The north-based market demand for 'sustainable cocoa' has led to firm-based upstream interventions in the form of voluntary certification schemes (e.g. Rainforest Alliance-RA and UTZcertified) and various technical assistances to improve farm productivity and

subsequently smallholder livelihoods. The participation of certification bodies within production networks has been an important development in terms of extra-firms' actor engagement, widening upstream coordination horizontally beyond direct economic activities. Financial support from north-based development agencies has also extended to other intermediaries such as agro-input companies, micro-finance institutions, and research and extension agencies. While sustainability initiatives have focused on restoring smallholder farming productivity, an accessible and stable agro-input supply was also required to bring back farm profitability. Funding the shift from conventional farming to 'good' (or intensified) agricultural practices requires financial investment that is beyond the reach of many smallholder farmers.

4.3 Competitive dynamics

Rather than seeking the dynamic drivers of value activity in the global production networks, the GPN approach of Coe and Yeung (2015) focuses first on independent capitalist dynamics that prompt the actor-specific strategies of lead firms in different regional and national economies. This GPN approach recognises three competitive dynamics, i.e., cost-capability ratios, market imperatives and financial discipline as the necessary causal conditions underpinning the actor-specific strategies employed when configuring production networks, eventually resulting in diverse empirical outcomes. With respect to the cocoa-chocolate industries, the manufacturing lead firms have attempted to strengthen and upgrade: (1) their position within the production networks; and, (1) their capability to manage the risks imposed by the external environment. The following sections discuss how these underlying competitive dynamics are shaping lead firm strategies in the contemporary cocoa-chocolate GPN.

4.3.1 Cost capability ratios

The early cocoa-chocolate industries were highly vertically integrated where branded chocolate manufacturers were engaged directly with sourcing, storing and processing the cocoa beans through to distribution and marketing. As the industries developed, they experienced increasing mainstream market demand and more competitive pressure to lower the end-product price. This required the branded manufacturers to restructure the cost of the different stages of production. The dynamic of optimising the cost capability ratios facilitated an understanding of why a lead firm would either outsource certain value activities to their supplier partners or maintain an integrated production network, and why the mix of these activities could change over time in specific global production networks (Yeung and Coe, 2015). With more diverse product portfolios and economic scales of production networks, a firm could gain optimal cost-capability ratio through cost reductions. It could externalise the low value activities to supply partners, and internationalise value activities to low cost production countries, while investing in new capabilities, such as innovation in production and management.

These cost-capability ratios are aptly demonstrated in the locational strategies of Mars and Nestlé. Overcoming earlier constraints, such as poor infrastructure, Mars successfully produced the *Milky Way* chocolate bar in 1923. The firm relocated to Chicago, a decision based on the recent

construction of a railway system that facilitated distribution and marketing across the country²⁵. Among the few family businesses remaining, Mars' reputation for secrecy was legendary. In 1932, the firm expanded into the UK after Forrest Mars acquired a small factory in the town of Slough. The company introduced the family recipe for *Milky Way*, and invented the *Mars Bar*. Over time, Mars established two factories in Slough, but after almost a century of serving the UK market, the 2007-2008 global financial crisis forced the firm to relocate to the Czech Republic for *Starbust* production²⁶. *Twix* chocolate finger similarly relocated to the largest factory in Veghel (in the Netherlands) in 2007. Due to the 2008 financial crisis, which was followed by slow market growth, the company was no longer able to meet the UK's high production costs.

The emerging Eastern European market opened the opportunity to capture value from the growing regional market, and relocating production to the Netherlands increased the company's cost efficiency through the economic scale of large production. Given that the Netherlands applied a low industrial tax, and was also the largest grinding country, this combined with improved technology leading to reduced labour costs of the recently established factories. In addition to this geographic position, the company had access to the larger European market from the well-established transportation infrastructure around the continent. Within the last five years, Mars has expanded its production facilities in the emerging markets and established R&D centres in significant markets (e.g., China) to capture value from the economic scale.

In 1905, Nestlé entered chocolate production after merging with a Swiss chocolatier owned by Daniel Peter and Charles-Amédée Kohler to produce milk chocolate under the brand *Cailler* and *Fémina*. Then in 1988, Nestlé acquired UK confectionary firm Rowntree Mackintosh, and aimed to strengthen its position in the confectionary segment²⁷. The firm has a significant global market share for mainstream brands (i.e., *Kit-Kat, Smarties, Milkybar, Milo* and *Aero*). The firm's strategic decision to outsource cocoa processing in 1999 was followed by a series of long-term contracts with the strategic partner Barry Callebaut in 1999 and Cargill in 2004, along with a few self-selected competent specialised suppliers²⁸. This strategic partnership with Barry Callebaut -which was also investing in the R&D of chocolate processing and technology- allowed Nestlé to eliminate the innovation costs while at the same time focusing on promoting premium brands (*Cailler* and *Fémina*).

Focusing on the extraction of the financial value of proprietary assets (e.g., brands and technology), Nestlé has: (1) externalised high-cost production to suppliers; and (2) contributed to increased rates

²⁵ Our history since 1883. [Retrieved, January 2017] http://www.mars.com/global/about-us/history

²⁶ History of Mars. [Retrieved, January 2017] http://www.englishteastore.com/mars-history.html

²⁷ The Nestlé company history since 1866. [Retrieved, January 2017] http://www.Nestlé.com/aboutus/history/Nestlé-company-history

²⁸ Important milestones of Barry Callebaut Group. [Retrieved, January 2017] https://www.barry-callebaut.com/about-us/company-history-0

of profit despite declining total sales in the recent years (see Figure 4.6). Before outsourcing, only 10% (in average) of profit generated from the total sales, but steadily increased to 15% few years after Nestlé disintegrated the cocoa-chocolate processing facilities to Barry Callebaut²⁹ and Cargill³⁰. Nestlé strategic approach of outsourcing and focusing production on core-competence has increased profit shareholder value while slowly increased investment in new capabilities to ensure food safety after establishing quality assurance centres (in the US and Ireland) to minimise losses linked to pathogen and allergen contamination of susceptible products.

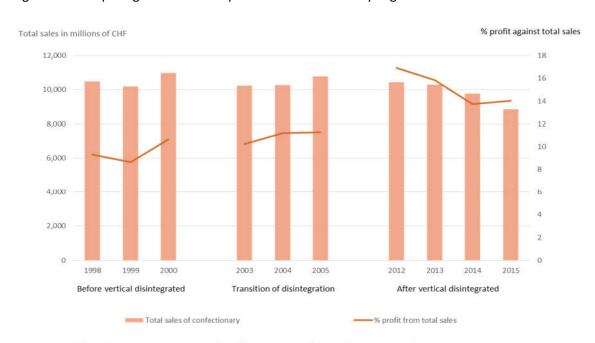


Figure 4.6 Comparing Nestlé annual profit³¹ of confectionary segment before and after outsourcing

Source: Nestlé financial and management reports [http://www.nestle.com/aboutus/mediadocuments]

4.3.2 Sustaining market development

Moving away from the earlier GCC focus on buyer driven chains that conceptualised the lead firms as key drivers in market development, Yeung and Coe (2015) suggest the dynamic interaction of customers and lead firms in market creation. They further argue that the market imperatives confronting firms are negotiated outcomes of market creation that actively involve both interaction between the customer (who is likely to demand better product/services at low cost) and the producer (who is seeking greater market revenue and profit from expansion). Slow growth in

²⁹ Successful closing of transaction with Nestlé, published on 2 July 2007. [Retrieved, December 2016] https://www.barry-callebaut-takes-over-dijon-factory-san-sisto-production-line

Following Nestlé policy to concentrate in branded value-added products, divesting of cocoa processing units was following by a long-term agreement with Cargill, published on 30 June 2004. [Retrieved, December 2016] http://www.Nestlé.com/media/pressreleases/allpressreleases/sellcocoaactivitiesyorknhamburg2cargill-30jun04

³¹ Profit referring to operating profit or earnings before interest and taxes, EBIT= revenue-expanses

developed country markets has compelled global lead firms to extend their market reach into emerging markets. This would increase their market accessibility and reap the benefit of the less competitive and developed markets.

Chocolate manufactures have actively expanded their production networks across the emerging countries in Asia, the Middle Eastern countries and South America. Focusing on the Asian region, Mars and Nestlé established an early geographical presence recently, followed by Mondelēz, Hershey and Ferrero's establishing of new production facilities in China and India (see Table 4.2). Nestlé and Hershey each employed an acquisition strategy to gain market accessibility in China, following Mars established market domination (Allen, 2011). Thus, the lead branded manufacturers' investments seemed to be followed by investment of their strategic supply partners. For example, after Barry Callebaut signed the long-term outsourcing contract with Nestlé, Hershey and Cadbury in 2007, they opening factories in China (2008), Japan (2008), and Indonesia (2013), and acquired Malaysian KLK cocoa processor (2008)⁸.

Table 4.2 Mapping the growing cocoa-chocolate industries in Asia

Firms	China	India	Indonesia	Japan	Malaysia	Thailand	Singapore	Philippines
Lead firms-Chocol	ate branding m	anufacturers					h	
Mars	E	E N (2015)	E					
Nestlé	Α			E	E	E		
Mondelēz	N (2016)	E N (2013)			E	E		
Hershey	N (2014) A				N (2013)			
Ferrero	N (2015)	N (2015)					E	
Petrafoods			E					E
Meiji				E				
Supply partners-G	rinding and Co	uverture						
Barry Callebaut	E	E	N (2013) A	N (2013)	E	E	E	
Cargill			N (2014)					
Olam			N (2014)				E	

Source: Compilation of multiple sources from firm reports and online media

E established N new investment A acquisition

Despite its dominance in mass market brands, Nestlé has criticised for not have a premium chocolate brand in the global market, for example to compromise the slow growth of mass market brands. In attempt to sustain market development in developed market, the firm reintroduced the Swiss Alps Cailler brand in 2006 and, a few years later, Nestlé opened Maison Cailler-La Chocolaterie Suisse in Switzerland as a centre of innovation and consumer engagement³². This premium market development also expanded in Britain and Ireland, by 2012, as Nestlé restarted the historical Rowntree chocolate factory in York and revived the production of dark chocolate brands³³.

³³ Nestlé UK and Ireland has revived dark chocolate production at its factory in York after ending a third party outsourcing deal, published on 19 October 2012. http://www.confectionerynews.com/Processing-Packaging/Nestlé-UK-restarts-darkchocolate-production-at-York-site

³² Nestlé's new Maison Cailler brand creates chocolate haute couture, published on 20 October 2011. [Retrieved, December 2016] http://www.Nestlé.com/media/newsandfeatures/maison_cailler

As Nestlé maintains indulgence element of the premium product to sustain market development, Mars become a pioneer to introduce cocoa as functional products by emphasising the pharmaceutical element of cocoa flavanol. These cocoa flavanol-based food supplements were introduced in the form of capsule and powdered stick pack for the UK and Ireland market in early 2017³⁴, after the US. This innovation seeks to expand sales of cocoa-based products, from the mainstream chocolate-candy confectionaries to the pharmaceutical industry. Concomitant with geographical market expansion, followed by more diverse consumer preferences concerning their ethical, quality, safety and health claims, the branded manufacturers are competing to maintain their dominant position and continue product innovation development to sustain their market leadership.

4.3.3 Financial discipline

Among the dominant branding chocolate manufacturers, only Mars and Ferrero remain family (group) businesses. The various other dominant manufacturers (re. Mondelēz, Nestlé, Hershey, and Lindt&Sprüngli) became publicly listed to minimise their dependence on financial institutions. Yeung and Coe (2015) argue that the pressure and opportunities associated with imperative financialisation have propelled the lead firms' strategy shift from developing and expanding their production networks to combining with the cost-capability ratio and sustaining market development. The form of financial discipline under consideration is that market valuation on stock markets has forced the lead firms into doing one thing well (Davis, 2009 cited in Yeung and Coe, 2015). Once subjected to this continuous pressure, the firm tends to perform well on the financial markets. Having continuous financial pressure, the lead firms are subjected to generate higher revenue (and please their shareholders who tend to be interested in short-term gains) from their core-competencies and cost-capability ratio. This leads to the externalisation of low revenue-high cost production (such as cocoa processing) activities and using customer power to drive competitive pressure among the suppliers eventually leading to low outsourcing cost and better quality-services.

Nestlé, one of the earliest companies to register on the Zurich stock exchange (on 17 March 1873, now SIX Swiss exchange), later merged with Anglo-Swiss condensed milk in 1905. Although early financialisation resulted in financial loss due to falling prices and the Wall Street crash in the 1920s, the firm recovered and continued investment in the economic scale and scope of the production networks, thus making Nestlé a powerful global company with a diversified product portfolio. After acquiring Rowntree Mackintosh in 1988, Nestlé added mainstream brands into its confectionary portfolio, slowly replacing the vertically integrated production networks with long-term outsourcing contracts in exchange for more demanding and stringent private regulations.

The ability to recover and be resilient towards the market shock and financial crisis has strengthened Nestlé's dominant position in the production networks and allows them to capture the economic rent from its core-competence. Based on the annual financial statement, the company shows declining

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³⁴ After granted approval from EFSA, Mars launched pill-based food supplement contains cocoa flavanol, published on 16 February 2017. http://www.nutraingredients.com/Markets-and-Trends/Mars-to-enter-UK-supplement-space-with-cocoa-flavanol-pills

sales values by around 10 percent over ten years (see Table 4.3). Combined with a low-cost capability ratio and global market dominance, Nestlé is still able to increase the percentage of net margin (re. EBIT), despite increased interest linking to the financial crisis of 2008. The capability to maintain stable profit margins defines the firm profitability and operation efficiency. In addition, the debt/EBIT ratio shows an ability to comply with financial obligations, despite the external influence such as tax and interest.

Table 4.3 Nestlé 10-year summary of financial statement (Nestlé annual reports)³⁵

Financial statement	2007	2008	2009	2010*	2011	2012	2013	2014	2015	2016
Sales	107,552	109,908	107,618	109,722	83,642	89,721	92,158	92,158	88,785	89,469
EBIT (Earning before tax and interest)	15,024	15,676	15,699	16,194	12,538	13,464	14,047	14,047	13,382	13,693
Taxes	3,416	3,787	3,362	3,693	3,112	3,259	3,256	3,256	3,305	4,413
Non-controlling interests	2,149	4,142	4,716	731	1,477	1,657	1,564	1,754	1,648	1,391
Net financial debt	21,174	14,596	18,085	3,854	14,319	18,120	14,690	14,690	15,425	13,913
Efficiency and profitability measures										
% EBIT of sales	14	14	15	15	15	15	15	15	15	15
Debt/EBIT ratio	1.41	0.93	1.15	0.24	1.14	1.35	1.05	1.05	1.15	1.02
% Non production cost (tax+interest) of EBIT	37	51	51	27	37	37	34	36	37	42

^(*) Impacted by the profit on disposal of 52% of Alcon outstanding capital.

4.4 The risk environments

Risk minimising and management involves a range of extra firm actors who directly and indirectly affect the global production networks, thus firms may adopt different strategies across geographical boundaries and risk domains. The risks related to downstream activities tends to be manageable (see Table 4.4) since production is internally organised within the control of the lead firm, as opposed to upstream risks that are beyond these geographic and economic domains. However, sustaining competitive capitalist dynamics within the oligopolistic global market is challenging with unpredictable external pressures. For example, Cadbury's loss of profitability in the confectionary segment was due to fierce market competition, slow growth, and the high cost of domestic production³⁶ (relocating its factories to Poland, just as Mars relocated to the Netherlands and the Czech Republic). In addition to external pressures where Cadbury faced a consumer backlash (in New Zealand) after replacing cocoa butter with palm oil³⁷ and Salmonella poisoning outbreak in the UK

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³⁵ Nestlé annual reports for 2007 to 2016, [Retrieved on February 2017]. http://www.Nestlé.com/investors/publications

³⁶ Cadbury announced for closing the factory in Somerset, as 500 employees losing the jobs by 2010, but opening new factory in Poland, published on 3 October 2007. http://www.telegraph.co.uk/finance/markets/2816921/Cadbury-to-move-jobs-to-Poland.html

³⁷ Cadbury caves-no more palm oil in its chocolate. Cadbury is to get rid of palm oil from its chocolates after a public outcry, published on 17 August 2009. http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10591340

market³⁸. These series of pressures and financial underperformance became the economic rationale for shareholders (primarily hedge funds and investors) to approve the acquisition by Kraft foods.

Table 4.4 Different forms of emerging risks identified in cocoa-chocolate production networks

Form	Nature	Casual effects on actors	Examples
Economic risk	Systemic shift in markets (i.e., new technology for premium products, internal-external financial disruption, and significant fluctuation in exchange rates)	Loss of competitive position, reduction of revenue and profitability, structural volatility in particular regions	Rowntree acquired by Nestlé after losing its stock shares price and weak operating performance in 1988. Cadbury acquisition by Kraft in 2010 following sluggish growth of confectionary segment in 1990-2000.
Product risk	Quality, safety, health and branding considerations	Negative perception of goods: consumer concerns.	- Hershey recalls most of chocolate products in Canada because of Salmonella contamination in November 2006 and close the Smith Falls plantation in February 2007 Cadbury suspected of halal concerns in Malaysian market, June 2014 Mars recalls chocolate from 55 countries, February 2016 due to plastic contamination.
Regulatory risk	Political, public to private governance and changing policies	Disruption or termination of global production, existing industrial practices and organisational arrangements.	 Political turmoil in Ivory Coast results in the banning of the export of cocoa bean in 2011. Subsidiary of Continaf B.V closed cocoa trading operation in 2013 after Indonesian government introduced progressive export tax.
Labour risk	Struggle over working conditions and employment practices	Disruption of global production and employment prospects and potential for greater reputational risk	- Six month- long strike in 1975, as Kraft planned to sell its US factory in Fogelsville after only three years of establishment Nestlé, ADM and Cargill US lawsuit for sourcing cocoa from child slavery practices in the Ivory Coast, September 2014.
Environmental risk	Natural hazards or human-made disaster	Accentuating the other forms of risks and their casual effects.	- The persistent cocoa pod borer outbreak in the 1990s contributed to a significant decline in Malaysian cocoa production. - The long-persistent pest-disease infestation since early 2000s have prevented the Indonesian cocoa production improvement, despite increased cocoa farms areas. - Ebola outbreak in West Africa impacted on the cocoa price and resulted in the closing down of the subsidiaries' operations, 2014.

Source: multiple online news media and firm reports

³⁸ Cadbury fined £1m for salmonella offences, published on 17 July 2007. https://www.theguardian.com/commentisfree/2007/jul/17/uk.business

Following the lead firms' outsourcing strategy, consumer-related risks (e.g product and labour risks) required a coordinated production process with supplier partners. For example, the case of Salmonella contamination in most of Hershey chocolate brands was identified from soy-lecithin³⁹, an emulsifying agent used by a Hershey' supplier. Despite the resulting consumer poisoning being linked to supply chain issues, the firm decided to close the factory after 44 years' operation in Ontario (Canada). Another supply chain risk is rooted in the declining of cocoa farms yield linking to deteriorated of forest rent and unresolved pest-disease infestations that contributed to the collapse of Malaysian cocoa plantation in 1990s. Within Indonesia context, unresolved declining cocoa farm yield will treat the recent investment in cocoa processing segment, since low supply and high demand leads to high farm gate prices and further contributes to high domestic production cost.

Meanwhile, the complexities of upstream state intervention in regulatory regimes, and ongoing political risks, leads to uncertain conditions beyond the direct influence of lead firms. For example, despite persistent pest and disease issues leading to declining farm productivity, the Indonesian government encouraged new investments in cocoa processing through tax policy. This was not anticipated by the trading actors who had benefited from the liberal market and higher global market demand. Consequently, increasing domestic demand beyond the annual production and high cost of exporting put immense pressure on cocoa trading firms. For example, the subsidiary of Continaf B.V trading firm (re. Nedcommodities Makmur Jaya) closed their cocoa operations in 2013 whilst Olam Indonesia strategically expanded the scope of production to cocoa processing and plantation to remain competitive.

4.5 Strategies for reconfiguring the production network

Focusing exclusively on interfirm relationships as modes of industrial governance, the GVC approach - as an analytical tool - has been criticised for subsuming power dynamics and economic actor practices under different modes of chain governance (Ponte and Sturgeon, 2014; Yeung and Coe, 2015; Henderson et al., 2002). This renders the underlying competitive dynamics and actor-specific practices invisible and (or) assumed (Yeung and Coe, 2015). Linking the actor specific competitive dynamics to overcoming the causal challenges, the GPN approach introduces four types of firm-level strategies to explain the specific GPN configurations in different historical and geographical contexts. This opens-up the possibility for an actor from the same production networks to exercise diverse strategies rather than being generalised. A combination of the specific actors' competitive dynamics and the strategies they employ defines the empirical economic development outcomes from individual firm growth, vertical integration and outsourcing to sectoral transformation and spatial development.

The confectionary lead firms can be divided into: (1) those firms primarily concerned with chocolate manufacturing with smaller segments of candies (e.g., Mars, Lindt&Sprüngli, Ferrero, Hershey, Petrafoods); and, (2) multi-portfolio firms whose confectionary segment are not their major source

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³⁹ Soy source of chocolate contamination, Hershey says. A variety of popular chocolate bars and candies were voluntarily recalled on Nov. 9 because of fears of salmonella contamination at Hershey' Smiths Falls, Ontario factory, published on 16 November 2006. http://www.cbc.ca/news/soy-source-of-chocolate-contamination-hershey-says-1.582869

of revenue (e.g., Nestlé, Mondelēz, Yildiz holding and Meiji holding). For all branded manufacturers, innovation and product development are core competencies to sustain their market dominance. Mars has invested significantly in manufacturing upgrading (re. increasing production volume and modernising factories) and internationalisation of production over the last decade⁴⁰. After upgrading 27 existing manufacturing plants, Mars has also invested in new manufacturing plants in Russia, Saudi Arabia, Egypt, China and India⁴¹. On the other hand, Nestlé has focussed on strengthening its core competences through outsourcing. These different strategies, in combination with other competitive dynamics and geographic-based risks, have resulted in a variety of organisational outcomes (Table 4.5).

Despite different business development strategies, most branded manufacturers are maintaining the small scale of cocoa and industrial chocolate processing units. For example, Nestlé in 2012 restarted the production of industrial dark chocolate in York to support the UK and Ireland market⁴² (after selling the York' cocoa processing unit to Cargill in 2004⁴³), while Mars recently increased the production capacity in its vertically integrated cocoa processing facilities in Indonesia. In 2016, Mars extended its investment in upstream cocoa research after acquired the Ecuadorian *Hacienda La Chola* cocoa plantation⁴⁴ as a third plant science research station following the previous research centre in Bahia (Brazil) and Sulawesi (Indonesia). Meanwhile, escaping from the mass-market and focusing on value added product, Nestlé entered the premium market after re-introduced Swiss-*Callier* brands for the European market, diversification of *Kit-kat* dark chocolate for UK and Ireland market, also *Alpino* brand for emerging India market⁴⁵.

⁴⁰ Analysis of the newly build factories and major foreign direct investment over the past five years, published on 22 August 2013 http://www.confectionerynews.com/Markets/Analysis-Where-is-confectionery-production-moving

⁴¹Analysis of recent new investments and factory upgrading of top five chocolate manufacturers in the past five years, published 22 August 2013, http://www.confectionerynews.com/Markets/Analysis-Where-is-confectionery-production-moving

⁴² Nestlé UK and Ireland revived dark chocolate production in York after ending third party outsourcing deal, published on 19 October 2012 http://www.confectionerynews.com/Processing-Packaging/Nestlé-UK-restarts-dark-chocolate-production-at-York-site

⁴³ Concentrating to activities on branded value-added products, Nestlé has reached an agreement by which the Group will sell its cocoa bean processing activities in York (UK) and in Hamburg (Germany) to Cargill Incorporated, published on 30 June 2004. [Retrieved, December 2016] http://www.Nestlé.com/media/pressreleases/allpressreleases/sellcocoaactivitiesyorknhamburg2cargill-30jun04

⁴⁴ Mars chocolate acquired Hacienda La Chola, 485-hectare cocoa plantation in Guayaquil, Ecuador, published on 14 April 2016. http://www.confectionerynews.com/Manufacturers/Mars-buys-Ecuador-cocoa-farm-Hacienda-La-Chola

⁴⁵ Nestlé India has launched a series of advertisements for its Alpino brand as part of its greater competitive foray into India's premium chocolate market, published on 13 August 2014. [Retrieved, December 2016] http://www.Nestlé.com/media/news/alpino-india-to-love-is-to-share-ads

Table 4.5 Firm-specific strategies and organisational outcomes in the cocoa-chocolate GPN

Business development strategy	Firm practices	Characteristics	Structure as organizational outcomes
Mars			
International	1. Interfirm	Certain degree of control over the production	Outsourcing and dependent
expansion	control (generic	process-vertical coordinated supply chain;	integration of suppliers,
	and specialized	apply cost-capability; attempt to build similar	locking into contractual
	supplier)	competence for collective benefits; have (or	arrangement.
		establish) facilities nearby lead firms.	
	2. Extra-firm	Support business long-term development	Differentiated integration
	bargaining	strategy-market and proprietary capabilities;	through horizontal
		social and political legitimacy.	partnerships into GPN.
Nestlé			
Development of	1. Interfirm	Dependence on the supplier compatible	Outsourcing, joint research-
core	partnership	capability to respond on market change-	development to support
competencies	(strategic and	product design; apply cost capability; seeking	lead firm' strategic
	specialized	for mutual prospect to benefit each other's;	development platform.
	supplier)	demands new facility nearby the lead firms	
	2. Extra-firm	Social and political legitimacy.	Differentiated integration
	bargaining		through horizontal
			partnerships into GPN.

Adapted from Yeung and Coe (2015)

Following its manufacturing investments in emerging markets, Mars has adopted long-term (five-year) supply contracts that emphasize the importance of collective participation to boost cocoa production across the supply chain. For example, long term supply contracts (i.e. Barry Callebaut and Ecom) are contingent on signing a Memorandum of Understanding (MoU) that ensures alignment with the Mars commitment on sourcing fully sustainable products by 2020, adopting the Mars' extension business model, and implementing third party certification⁴⁶. Consequently, this collective commitment to a sustainable supply chain increases vertical coordination, responds to low-cost capability ratio, and shares supply related risks with contracted suppliers.

As a diversified food firm with significant global market scale, Nestlé has grown into a powerful firm by building dynamic relationships with partner suppliers. This is indicative of the complexities surrounding Nestlé's confectionary production networks, as cocoa products are also used in a range of food and beverage products. Nestlé also selectively builds commercial relationships with specialised suppliers who are also subjected to a stringent sourcing policies. For example, in the Indonesia context, Nestlé has exercised control over defining product definitions for local specialised suppliers for low-end products (e.g. BT Cocoa and Kalla Kakao). Overall, Nestlé applies different

⁴⁶ Our cocoa policy-working with cocoa farmers for a sustainable cocoa future, [retrieved on 19, February 2017] http://www.mars.com/global/about-us/policies-and-practices/cocoa-policy

outsourcing strategies depending on product type, while at the same time strengthening core competence by building strategic partnerships with fewer competent suppliers.

4.6 Implementing sustainability (in the Indonesia context)

Increasing upstream intervention in the form of firm sustainability initiatives was initially supported by governments from major consumer countries like the US and European countries, with a primary focus on improving farm productivity through value chain interventions. For example, the importer countries development agencies (i.e USAID, Swisscontact and GTZ) established partnerships and knowledge sharing platforms between industrial actors and farmer organisations in West African countries (via the Sustainable Tree Crops Program) and Southeast Asia (via Sustainable Cocoa Enterprise Solutions -Success Alliance program and Agribusiness Market and Support Activity-AMARTA program). However, due to the limited scale of outreach across the millions of smallholder farmers, the scope of intervention seemed inadequate to satisfy lead firm interests. In addition to the intense pressure exerted among the peers and oligopolistic structure of supply partners, the emerging new global rulers (Büthe and Mattli, 2011, in Yeung and Coe, 2015) attempted to influence the production networks by integrating social and environmental issues into private label standards and conventions. These vertical and horizontal forces challenged the lead firms' attempt to sustain their economic growth while minimising emerging environmental risks.

In the Indonesian cocoa sector, the initial problem-driven sustainability initiative had received long-standing support from the US government since the early 2000s. Under the Success Alliance and AMARTA program, the smallholder farmers not only obtained technical assistances on good farming practices, but were also directly linked to the export market through assisted product and process upgrading. Alongside the program, grinder-traders strengthened their upstream domination and geographic expansion by establishing up-country buying units across the cocoa producing region. This vertical integration and expansion strategy challenges the intricate informal socio-economic relationship between the smallholder farmers and collectors (or local traders). The dispersed distribution of more than a thousand local traders, who had limited global market networks and economic scale, became an obstacle hindering the capability of lead firms to capture greater value in the network.

The complexities – which are often context-based - of the upstream challenge extends beyond the singular commercial and public domains. The failure to meet these upstream challenges may result in a *bullwhip effect* of supply chain risks and may intensify into a *race to the bottom*. Therefore, over the last five years, industrial actors have been actively engaging in a sustainability discourses and participating in different forms of sustainability initiatives with supply chain and extra-firm actors (see Table 4.5). Reflecting the different arrangements of inter-extra firm actors and goals within the Indonesia context, the firm initiatives are categorised as follows: (1) project-based interventions; (2) market-based interventions; and, (3) multi-stakeholder partnerships.

Table 4.5 Evolution of cocoa value chain 'sustainability' interventions

Form of Sustainability initiative	Approach	Goals		Primary implementer	Local implementin g partners	Example of initiative in Indonesia
1. Project based intervention	- Capacity building based on technical assistance - Modernising farming system - Linking to global market	- Improving productivity and quality - Capturing value added from the sustainable bean market - Improving market transparency and accessibility	Often single (fewer) donor agency	Contracted implement er	Depending on the specific goals	* SUCCESS Alliance (2000-05) *AMARTA 1-2 (2003- 13) * READ Program (2006- 11) * Gernas Kakao (2009- present) * Improving value added and downstream industry-
2. Market -based intervention	Introduce traceability system and third party certification scheme	- Capturing value added from the sustainable bean market - Obtaining long market contract	Single firm i	nitiative	Certification bodies	P2HP (2011-14) * Armajaro (2010-12) * Ecom (2010-present) * Olam (2010-present)
3. Multi- stakeholder partnership (program platform)	- Capacity building based on intervention - Adopting certification schemes - Strengthening local organisation	- Sharing tangible and intangible resources - Scale up the sustainability initiatives - Establish Social and political legitimacy	Matching fund between funding agencies and interested organisatio ns	Contracted implement er also funding the initiative	Diverse partners including supportive organisations	* CPQP-SCPP (2009- 2015) * Green prosperity- SCPP (2015-18) * Green Prosperity- EQSI (2015-18)
4. Multi- stakeholder partnership (communication platform)	- Private based inclusive forum - Shared knowledge and resources	- Outreach public spheres and community groups - Coordinated and measurable initiatives - Promoting member initiative			t level of ry commitment	* Cocoa Sustainability Partnership (2006- present) * Partnership for Sustainable Agriculture (2011-present)

4.6.1 Project based interventions

The early sustainability initiatives were funded by the US development agency (USDA/USAID) into two separate yet parallel ten-year projects: Sustainable cocoa enterprise solutions for smallholder alliance (SUCCESS Alliance from 2000 to 2005) and Agribusiness market support activity (AMARTA-ASKA from 2006 to 2011). Both projects focused upon how to restore Indonesian farmer competitiveness through addressing basic agronomic practices and improving productivity. Although their primary funding came from the government agency, both projects were developed and implemented in partnership with industry groups including the American Cocoa Research Institute

(ACRI) and the World Cocoa Foundation (WCF), in addition to major manufacturers, e.g., Mars and Blommer.

Following the implementation of the projects, increasing numbers of transnational cocoa-chocolate manufacturer subsidiaries and general suppliers established an upcountry presence, changing the farm level market structure that was previously dominated by local traders and collectors. The presence of the global firms rendered integration of the smallholders into the global cocoa production networks inevitable as the firms slowly introduced standardised quality assessment that led to the improvement of market transparency at the farm level. Although this altered farm level market system may have offered opportunities for farmers to capture gain from increasing competition amongst buyers, the primary goal of the alliance of transnational firms and development agencies favoured the downstream actors. For example, the emphasis on improving the quantity and quality of cocoa produced by the smallholder farmers (ACDI/VOCA, 2005; USAID, 2011) suggested that improving farm yield was a key factor behind the sustainability initiatives. In addition to assisting the upgrading of the farming process and product quality, the projects also aimed to strengthen their partnerships with cocoa stakeholders. The projects regarded partnerships as an instrument to achieve project sustainability by considering transnational firms and governments as key actors who may contribute to sustaining and scaling up the projects (USAID, 2011).

4.6.2 Market based interventions

The market-based sustainability interventions were primarily implemented by transnational firms' usage of a traceability system as they attempted to increase the vertical coordination between downstream and the upstream actors (further discuss in the following chapter). Driven by leading manufacturer demand, the recommended voluntary certification schemes were adopted by international trading firms as the initial step towards vertically integrating the smallholder farmer into the global production networks. Although Mars' grinding subsidiary in Indonesia was a pioneering adopter of the Rainforest Alliance certification scheme in 2010, before long this step was emulated by its supply trading partners, Olam and Ecom subsidiary (TMCI). Meanwhile, Nestlé Indonesia was slowly achieving vertical coordination in the form of a traceability scheme implemented by its supply partners, e.g., Armajaro, Petrafood ingredient division (now Barry Callebaut) and BT Cocoa.

4.6.3 Multi-stakeholder partnerships

Downstream actors were concerned about the endurance of a project-based approach, and the inadequacy of market interventions using voluntary traceable-certification schemes to overcome supply risks. Multi-stakeholder partnerships became a voluntary platform from which to disseminate and leverage a broader outreach program. The Dutch Sustainable Trade Initiative (or *Initiatief Duurzame Handel*, IDH) aims to mainstream sustainability initiatives across the supply chain amongst more diverse stakeholders, while the ex-officio Millennium Challenges Agency's (MCA) focuses upon catalysing sustainable development programs across spatial scales. These partnerships attempt to amalgamate the North-based public-private forces and interests, allowing them to drive and accelerate the mainstreaming of sustainability across selected cash crop value chains.

Both platforms argue in favour of contributing to sustainable development goals (i.e., poverty alleviation, decent work conditions/opportunities and economic growth, responsible consumption and production, and partnerships for the goals). More explicit objective as stated in the partnership website and document is as follows: '[T]he main objective of the sustainable cocoa partnerships initiative is to support the development of a sustainable cocoa industry in Indonesia and improved smallholder incomes where both smallholders and processors benefit equitably'. Also, 'IDH aimed for a transformation to sustainable commodity markets by bringing public funding and private financial commitments together in large-scale projects for improving production methods and boosting certification of primary producers' (IOB, 2014: 3). This combination of market enforcement of sustainable-traceable systems and multi-stakeholder partnerships has structurally enrolled the smallholder farmers more intensely into the global cocoa production networks.

The Millennium Challenge Corporation (MCC) is an independent US-based foreign aid agency who delivers US assistance in the form of bilateral corporation with the eligible country. The country based agency or Millennium Challenge Agency (MCA) in Indonesia has adopted a program aimed at achieving sustainable economic growth and poverty reduction. Funding requirements include a partnership, or a consortium, consisting of registered entities of international and national organisations and (or) corporations financially committed to implementing sustainability initiatives. Governments and political parties are excluded. Unlike the IDH governance structure, where the headquarters define the strategic policies without the consent of the targeted countries, the scope of the MCC-Compact was signed by the Indonesian government and the MCA office is managed by a board of trustees (Majelis wali Amanat). The latter were democratically elected and represents the affiliated government ministries, business associations, academics and civil society groups. As part of the central government's compliance with the Compact, local government participation was identified in the form of abolishing local taxes. For example, abolishing local tax regulations subjected to MCA associated programs include West Sulawesi Governor Regulation No.30/2012 that structurally extended to Regent Regulation No. 2/2013 (Mamasa district) and No. 17/2012 (Mamuju district).

Summary

The dynamic development of cocoa-chocolate industries shows a distinct reconfiguration of global production networks towards more oligopolistic and concentrated downstream production. Following the emerging lead firm sustainability initiatives and functional upgrading of cocoa origin countries has led to structural industrial changes. The functional upgrading has eliminated the trading function (in Indonesia) and the sustainability initiatives have demanded an extended role of supply partners as intermediaries to delivering extension services to smallholder cocoa farmers. Subsequently, the previous transnational trading firms have transformed their function into vertically integrated cocoa processing firms with a key role in implementing sustainability interventions. Meanwhile, the growth in emerging markets is leading to increasing foreign direct investment by cocoa-chocolate transnational firms in Asian countries, as the firms are trying to sustain their market dominance from this regional development. Following this investment and attempt to manage risk environments, lead firms are also seeking negotiating spaces and platforms to influence the public policy in the form of various extra-firm bargaining strategies.

5. Sustainability initiatives and governance

Incorporation of the sustainability concept into the cocoa production network has given rise to the question of governance, specifically regarding the integration of the concept into industrial actor sourcing policies. The cocoa production network is dominated by North-based transnational firms, and there is a power asymmetry between these firms and upstream smallholders. Unlike some other cash crops, chocolate-cocoa industries involve a wide range of product portfolios, and this has led to multiple sourcing strategies and a complicated governance structure. This chapter presents the major empirical findings of my thesis, by unpacking the way sustainability discourses have been adopted and applied in my two corporate case studies: Mars and Nestlé. I explore the ways in which industrial actors are imposing sustainability across the cocoa production network, from the supply chain actors to the extra-firm actors. Foremost, I commence with an introduction to the emergence of sustainable cocoa programs at the industry scale.

5.1 The market-driven sustainable cocoa

The major chocolate firms' public commitment to sourcing sustainable cocoa and creating a sustainable supply chain by 2020 was followed by the emergence of a sustainable cocoa market since around 2010. This commitment has attracted the financial support from cocoa consuming countries, e.g., the Netherlands and Germany, both of which have actively encouraged sourcing of third party certified sustainable cocoa. Without necessarily adhering to sustainability practices via industrial trading regulations and policies, the governments in the North-based consumer countries demonstrated their subtle support via public private partnership (PPP) platforms (i.e., IDH and WCF) and commitment towards multi-stakeholder forums and research programs.

For the Dutch government, the historical importance of the Netherlands as the home of the largest chocolate-cocoa industry in Europe was a factor. Recently, the Netherlands' government has intervened in the cocoa production network by establishing national multi-stakeholder sustainable commodity platforms (through IDH) for promoting and supporting sustainable production. Particular focus has been placed upon impact measurement, supporting gene bank research in Tobago and Trinidad, and on establishing knowledge exchange portals (i.e., cocoaconnect.org). Conversely, a sustainable market support from the USA government was a significant factor in Indonesia from around 2000 until 2010, although this has become somewhat subdued in recent years. While there has been some support from Northern governments, this has not been sufficient to drive large-scale change towards sustainable cocoa sourcing.

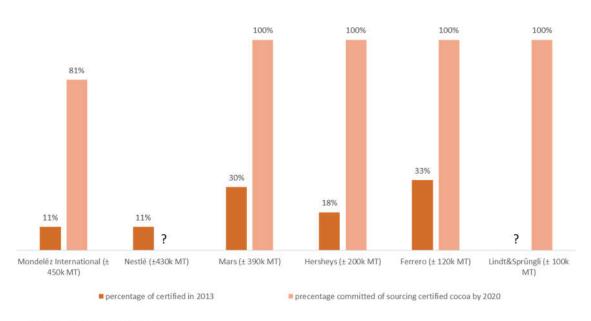
Having received only partial support from the North-based countries for a sustainable cocoa market, the leading cocoa-chocolate firms are now enforcing their own sustainability sourcing policy⁴⁷ along their supply chains. The sustainable cocoa market has been enhanced by the voluntary commitment of the transnational branded chocolate manufacturers. For example, in 2010 Mars publicly announced their commitment to 100% sourcing of certified cocoa beans by 2020. This was followed a few years later by Hershey, Ferrero and Lindt&Sprüngli, with similar commitments. However,

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⁴⁷These policies have mostly adopted ILO conventions on forced labor and human rights, along with environmental laws such as prohibiting sourcing from recently deforested farms, biodiversity protection and conservation policies.

Nestlé' stance was more aimed at specific market demand for sustainable cocoa market (e.g. UK, Ireland⁴⁸, and Australia), while Mondelēz aimed to source 81% of certified cocoa by 2020 (see Figure 5.1). The commitment of the leading chocolate manufacturers was followed by their suppliers (see Figure 5.2), who were however not necessarily as fully committed as the manufacturers. Driven by the market demand of the major chocolate manufacturers, there has been a significant increase in global certified cocoa bean production (see Figure 5.3) among the major voluntary certification schemes (i.e., Fairtrade, Rainforest Alliance and UTZcertifed). Over the period 2009-2014, the production of certified bean has increased five-fold. And, there has been a significant shift towards UTZcertified (hereafter referred to as UTZ) and Rainforest Alliance (hereafter referred to as RA) schemes⁴⁹ instead of Fairtrade. Despite the ongoing merger process of the two leading certification bodies in cocoa sector, the new certification scheme maintains the Rainforest Alliance logo to retain consumer trust and the established market engagement.

Figure 5.1. Chocolate and confectionary firms' commitment to sourcing sustainable certified cocoachocolate products by 2020



Data source: Cocoa barometer, 2015

Strong commitment on sourcing sustainable certified cocoa was especially evident from those manufacturers whose revenue was highly dependent on the chocolate and confectionery brands portfolio, except for Mars. As a pioneer on such sustainability commitments, Mars also has extensive

⁴⁸ Nestlé committed to source sustainable cocoa on particular market, published on 1 August 2014

http://www.confectionerynews.com/Manufacturers/Nestle-100-sustainable-cocoa-for-UK-and-Ireland-by-2015; published

26 March 2016

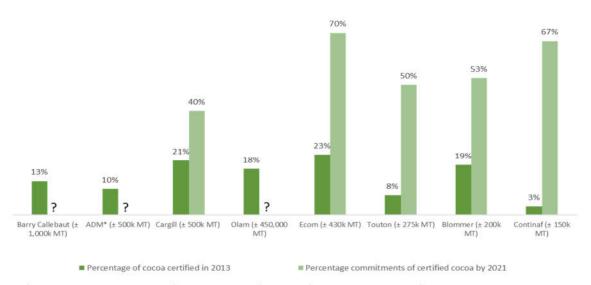
http://www.confectionerynews.com/Markets/Australia-s-top-chocolate-makers-commit-to-sustainable-cocoa

cocoa

⁴⁹ RA and UTZ-certified are ongoing merger after announced the plan on 6 June 2017, the new organisation will create a single agricultural standard and simplify the certification process to build more responsible supply chains. Published on 6 June, 2017 http://www.rainforest-alliance.org/article/rainforest-alliance-utz-merger;

investment in cocoa plantation research and had been actively engaging in cocoa sustainability programs from before 2010⁵⁰. Mars long-term sustainability commitment aimed for long-term strategic development to sustain the industry, from a breeding-genome sequencing program with IBM, Sustainable Tree Crops Program (STCP) in West African countries and SUCCESS Alliance in Indonesia. While Nestlé's engagement with third party certification was linking to positive brand association, considering that chocolate and confectionary contributed less than 10% to its total revenue (Nestlé, 2016). Accordingly, Mars has demonstrated a long-term interest to preserving the cocoa-chocolate industry (not only brand management) as they are actively engaging with the upstream cocoa development, while Nestlé's engagement was more oriented towards short-term gains linked to consumer attitudes towards their brands.

Figure 5.2 Major processed cocoa-chocolate producers' commitment to sourcing sustainable certified cocoa bean by 2021



ADM* the firm had acquitted by Cargill (Couverture division) and Olam (cocoa processing division) Data source: Cocoa barometer, 2015

Unlike the branded manufacturers, where the brand reputation is paramount to win the market, the contracted suppliers' engagement with sustainability was driven by market demand rather than strategically supporting upstream cocoa development. As they are not exposed to end market reputation, yet their reputation was defined by the dominant customers (re. the branded manufactures) who recently integrated social responsibility⁵¹ and environmental commitments⁵² into a responsible sourcing policy. Compliance with this policy required the establishment of a traceability system, from smallholder farmers through to the contracted cocoa processors. With the

⁵² Commitment to not sourcing the materials from IUCN protected areas, UNESCO world heritage sites and Ramsar wetland lists.

Mars presentation by Jeff Morgan during Roundtable for sustainable cocoa economy, 24-27 March 2009, [Retrieved January 2017] http://www.icco.org/sites/www.roundtablecocoa.org/documents/Mars%20-%20Jeff%20Morgan.pdf

⁵¹ Integrating ILO convention C182 about the worst form of child labour practices.

dominant customers committed to sourcing sustainable cocoa, the supply partners have had to accordingly adopt this certification schemes and engage with sustainability initiatives in order to secure market contracts and continue participation in the networks.

The cocoa-grinding segment of the production network is not committed to fully adopting certification schemes, as they are not subjected to the intense pressure of maintaining brand reputation. Subsequently, they have simply tried to adjust and enhance their competence in sustainable sourcing to serve the interests of their primary customers. Both the cocoa processors and chocolate couverture makers are globally more concentrated than the chocolate manufacturers. Their capability to perform more than one function reinforces and enhances their position within the supply chain. Many of the smaller European-based cocoa processors (e.g., Ecom, Touton, and Continaf) seem more committed to sourcing certified bean than the largest processors - Barry Callebaut and Cargill (see Figure 5.2). As the demand of sustainably certified cocoa bean driven by the market leader of branded chocolate firms has responded by the contract suppliers, hence increase the production of certified cocoa bean within the last six years (see Figure 5.3).

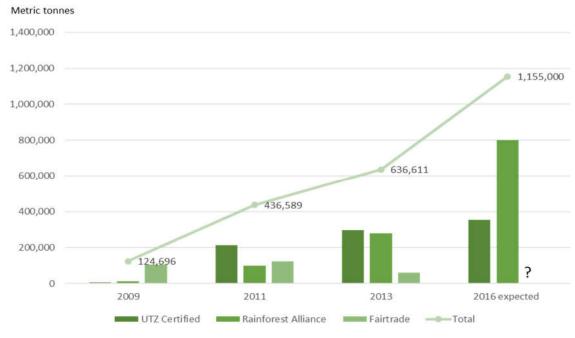


Figure 5.3 Global certified cocoa production of three major voluntary schemes

Data source: Cocoa barometer, 2015

Despite an intermediate position within the production networks, diversified business activities, and enhanced competitiveness, the cocoa processing segment poses less market risk from the end market and the certification scheme engagement simply rests upon market demand. As a result of the growing certified cocoa market, branded manufacturers have sought to share responsibility with their main suppliers, resulting in a slow shift from short term future and physical market towards a 'long term contract' agreements (Respondent CC6, pers. comm, 2014; Respondent CC8, pers. comm, 2015). Following the historical records of cocoa price volatility, the emergence of long term contracts has meant that demand for certified cocoa has become a key negotiating instrument that could reduce the hedging cost and opportunistic behaviour of the free market system, and may intensify the relationship into competent specialised or strategic partners.

The industrial actors have (long) concerned over the fluctuated global price and dominancy of intermediate actors (re. international-local traders and institutions) on managing the supply. However, the new challenge is how to maintain control over the current restructure of global cocoa production network development whereas growing concentration and integrating functional capacities of chocolate-cocoa manufacturers are not only fuel the competition, but also increasing control power over the upstream cocoa production. With, the previous physical and future market contract were based on the limited knowledge on the actual supply capacity of upstream production, and the lack of accuracy of national production was released by the producing country government, thus created opportunistic behaviours from the trading actors. To overcome this issue, the traceability system facilitates supply capacity of farmer groups records, accessible farm gate price, create more transparency market by (properly) quality assessment, shorten the supply chain thus remove the trading cost and opportunistic margin, and manageable volume of transaction (only) based on the contract terms and not beyond the estimated supply capacity.

The main differences between these certification schemes are the guaranteed minimum price and fixed premium within the Fairtrade standard. But, the premiums of the UTZ and RA schemes are voluntarily determined (or negotiated) by the market. In addition to the uncertainty (often tense negotiating) surrounding the premium price, the adoption of certification schemes was accompanied by significant costs (i.e., the setting up of an internal control system, farmer training, investment in safe agrochemical facilities, annual auditing, and adopting chain of custody reporting) that were initially covered by the contracted cocoa processors and chocolate couverture suppliers.

Firm participation in certification schemes is frequently supported by partnership programs, such as the multi-stakeholder platforms of IDH-CPQP and MCA-GPP. A KPMG study of the cost and advantage of certification (KPMG, 2012), revealed that small-scale farmers (with less than one-hectare farm size) were generally unable to meet the high cost of certification in the first year. Also, the forming of groups and maintaining the internal control systems (ICS) for collectively obtaining certification proved the main barriers impeding the farmers' participation in the schemes. While the inclusive farmer cooperative and (or) organisation often project based and struggles to sustain. In the other cocoa producing countries like Ivory Coast and Ghana, the momentum of emerging demand of sustainable cocoa was not only following by interest of adopting certification schemes, but also emerging farmers based organisations (e.g. cooperative, union, and association). For example, for RA certification case, more than 140 farmers based organisations were registered and qualified for RA certification, while only 9 groups in Indonesia were qualified and four of them registered by the transnational firms⁵³. Although Indonesian farmer organisation remains far behind from institutionally embedding to cocoa global production network, yet the rise of certification networks offers an opportunity for slowly reconfiguring institutional development at the local level.

Focus in Indonesia context, as the transnational firms were closely engaging with the smallholder farmers with multiple form of horizontal coordination (e.g. transfer knowledge, research, infrastructure, farmer group development, and building partnership with national stakeholders) and

⁵³SAN public certificate search database to conduct inquiries about valid farm, group and chain of custody operation certificates, [Retrieved on 10 September, 2017] http://san.ag/web/public-certificate-search/

vertical coordination (e.g. price mechanism, quality definition, and establish traceability system). The complexities and interrelated provision of essential services from technical assistance of sustainable farming, marketing and management services, household loans, credit services for agro-inputs, administrative records to social investment are quite challenging and overwhelming to obtain at the farmer level. Such complexities combined with competitive pressures to serve the sustainable market while building local institution seems a long-road to go. Subsequently, the contracted cocoa processors and chocolate couverture suppliers and (or) the arm lengths traders have directly engaged with the smallholder farmers, delivering such services and covering the certification costs of becoming certificate holders on behalf of the farmers. As regards the position as certificate holders, it is clear that the enhanced bargaining power allowed these firms to capture voluntary premiums for certified cocoa. However, the distribution of the premium among the farmers was highly dependent upon the efficiency and willingness of the certificate holders to share the premium. Meanwhile, the Indonesian government attempted to establish a rival certification scheme (as further discuss in the next chapter), rather than supporting the schemes by filling the gaps in the standards. For example, strengthen development of farmer based organisations, collaboratively produce accurate information on cocoa farm potential, and improving the local actor capacity to better integrating into the global production networks.

Despite the above challenges to mainstreaming the certification schemes and the differences in the schemes, the nature of the third-party schemes allows for a credible assurance supported by auditing by an independent third party. Furthermore, the selection of which schemes to adopt is dictated by the leading chocolate manufacturers. As repeatedly stated by the contracted suppliers: '[I]t depends on the market, if there is a market, we will provide it' or '[W]e just follow the market demand, so we can get the long-term market contract', (RespondentCC6, pers. comm, 2014; Respondent CC5, pers. comm, 2015). Given that the lead customers are playing the lead role in dictating which scheme to pursue that will fit their particular markets, it seems fair to acknowledge them as the main drivers of the schemes. Among the six-major chocolate manufacturer, Figure 5.1 suggests stronger commitments from those firms whose chocolate brands represent their main source of revenue (e.g., Mars, Ferrero, Hershey and Lindt&Sprüngli). Commitment to adopting third party certification schemes are not only signal a social acknowledgement of the legitimacy of verification by independent parties, but also reflect an attempt to minimise the risk of a backlash against key brands.

5.2 Governing sustainability in Indonesia: Mars case study

Mars Incorporation, a US based corporation, established a subsidiary that became known as PT Effem in Sulawesi in 1996. The firm was later renamed Mars Symbioscience Indonesia (MSI) after the launch of s global health and life sciences division in 2005. Under this division, MSI acts as an incubator for business ideas that combine evidence-based product development and innovative scientific research. For example, Mars published the first scientific paper on cocoa *flavanol*⁵⁴ measurement in 1999 (Lazarus, et al., 1999). These could be extracted from cocoa beans and used as

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⁵⁴ A chemical compound extracted naturally from the fresh cocoa bean, which appears to have health benefits such as preventing cardiovascular disease and supporting healthy blood flow, [Retrieved on February 2017] http://www.marssymbioscience.com/about-us

a health supplement. In Indonesia, MSI was sourcing directly unprocessed wet beans from smallholder farmers and directly implementing an onsite fermentation process. Generating value added from the flavonoids required grounded research⁵⁵ from seeking the high content of flavonoids varieties to learning how to optimise the flavonoids extraction from the cocoa bean.

Given the limited market development for chocolate and confectionary products in Indonesia, initially the processed cocoa products produced by PT Effem (Masterfoods) were exported to the US. Within the last decade, however, Mars has become a market leader for the emerging Chinese market with two chocolate factories in Huairou (Beijing) and Jiaxing (Zhejiang province)⁵⁶ supplying the domestic market and generating export revenue from nearby countries including Indonesia⁵⁷ (Respondent CC1, pers. comm, 2014; Respondent SS1, 2014). As a result, MSI recently expanded their processing facilities in Sulawesi to supply this growing market. At the same time, Mars expanded their cocoa field research stations, a Mars Cocoa Development Centre (CDC) in North Luwu and the on-going establishment in Pare-Pare and Pankep district. Mars investment in this region was significant, as the only transnational firm who has invested in upstream cocoa development to the extent of introducing a private business extension service (re. CVC). This investment has become a crucial element in sustaining Mars' chocolate production networks, particularly since cocoa production in Indonesia is dominated by smallholder producers.

MSI's engagement with the upstream extension services has spanned more than fifteen years in Indonesian. Initially a partner in the USDA-funded SUCCESS project (2000), this was followed by the opening of up-country buying stations with enhanced market transparency for quality assessment and public announcement of daily price information. By January 2003, collaboration with the Netherlands government and PT Effem resulted in the launching of the PRIMA Project with the aim of developing an integrated management system to control pest infestation (re. Cocoa Pod Borer) and to improve PT Effem's access to higher quality beans (Neilson et al., 2005). From both projects, MSI engages with a range of collaborations and partnerships committed to sustainability. These involve local and global cocoa stakeholders committed to advancing the upstream development of the cocoa sector.

The genomics, genetics and breeding resources for cocoa improvement was a collaboration between Mars, USDA-ARS, IBM, NCGR, Clemson University, Hudson Alpha Institute of biotechnology, Indiana University and Washington State University. The collaboration established a cocoa gene database that identified and mapped the physical properties of cocoa that are responsible for pest disease resistance, high yield, heat resistance, flavour, colour, and *flavanol*. [Retrieved, October 2016] http://www.cacaogenomedb.org/

⁵⁶ Mars' factories in China, [Retrieved, February 2017] http://www.mars.com/global/about-us/locations#?continent=Asia&country=China

⁵⁷ Sourcing cocoa to the booming Chinese market is more challenging than it seems, published on 24 January 2013, http://www.confectionerynews.com/Commodities/Scaling-up-cocoa-origins-closer-to-China-easier-said-than-done-says-Mars

5.2.1 Mars Sustainable Cocoa Initiative (MCSI)

As Porter and Kramer (2006) introduced the notion of 'strategic CSR', moving beyond the generic and value chain social impact towards shared social value, this appeared to coalesce with corporate concepts of sustainability. Strategic CSR was part of the corporation's long-term strategy to preserve the pool of economic and social value. Yet, shared social value was not necessarily Mars's primary reason for engaging with sustainability. During an interview with ISEAL, Jeff Morgan, Director of global programs for Mars chocolate, explicitly outlined why the firm was engaging with sustainability:

... 'Sustainability' was not a term that we typically used in the late 1980s/early 1990s but we talked about the long term outlook for cocoa production. So, we spent a good three years looking at how cocoa was grown in Asia, Latin America and Africa as well as looking closely at what happened in Brazil and why cocoa, which was primarily grown in Latin America in the late 1800s, early 1900s had mostly shifted to Africa? That was an in-depth evaluation that led us to the conclusion that long-term production of cocoa was really at risk – a risk for our business but also a risk for the whole industry (ISEALalliance, 2010).

From Morgan's perspective, the long-term outlook for cocoa production has been the primary interest driving Mars' participation in upstream cocoa development, specifically to prevent unprecedented supply risks that could affect the long-term future of the industry. This risk-driven upstream intervention was framed in terms of sustainable programs or initiatives designed to address the challenges faced by the majority of cocoa producing countries. But, this sectoral development program has been unable to create significant impact and to keep up with the growing market. The recent emergence of certification schemes attempts to address the combined core aspects of sustainability, economic, environmental and social issues. Mars considered the schemes as an alternative tool, one that required strengthening. For example, they believed that low yields constitute the main problem impeding the generation of higher incomes and therefore interest in cocoa farming. It was suggested that adoption of certification schemes would strengthen and pursue this goal further. In the words of Jeff Morgan:

We view certification as the tool - and we are getting started on it. We have agreements that we will look at how to strengthen the standards, the code of conduct, so that they really help the farmers to achieve greater productivity whilst being environmentally responsible-as well as being socially responsible in labour practices.

...As we continue to invest in the farmer training that may or may not lead to certification, we want those farmers to achieve what we internally call 'productivity plus', which is higher yield based on using better germ plasm and having the availability of fertilisers so that soil can be replenished...one objective is to get farmers into a 'productivity plus' type of environment, while the other is then to take farmers towards what we call the 'certification plus'...when we talk about 'certification plus' we want to move the yields of these farmers from where they are now, which is often 300 kilos per hectare or less, into a minimum of perhaps 1.2 tons per hectare, (ISEALalliance, 2010).

Mars has emphasized the importance of improving farm yield, and suggests the limitation of certification schemes to ensure this outcome. The company further suggested that compliance with

fair labour practices and preventing deforestation may not linearly lead to gaining yield. Furthermore, Mars suggested strengthening the certification scheme by inserting the concept of 'productivity plus and certification plus', clearly referring to improving the cocoa farming yield. In pursuit of this intention, Mars invested in upstream value adding activities in the plant genome and farm level research centres in Brazil and Indonesia, while also acquiring the *Hacienda La Chola* cocoa farm in Guayaquil, Ecuador. This investment not only promotes Mars understanding of productivity and higher yield farming practices through adaptive field research and trials, it also ensures benefits for short-term brand image through the adoption of certification schemes.

As a North-based lead firm, Mars recognised participation in the upstream development of the Southern cocoa-producing countries may have political limitations in terms of policy consistency and a supportive institutional environment. Accordingly, achieving productivity and certification within smallholder farming communities would not prove as simple as exercising market control over selected global, competent and efficient suppliers by exerting more rigorous sourcing policies. In the next section, I focus upon the notion of sustainability in the forms of shared social interest and environmental concern, expressed by (and supported by) extra-firm actors. Also, further discussion centres on how MCSI became a strategic tool to reach out to extra-firm actors; that is, to mutually partner to minimise upstream economic risk and enhance their capitalist competitive dynamics.

IFAD-READ program collaborated with Mars on setting up MCDC outside Sulawesi 2011-14 Mars-ACDI/VOCA: Compost Mars joined CPQP-SCPP business model: 2008 program 2012-2015 SUCCESS project-ACDI/VOCA-Mars as an initiator Mars become of the coto establish National USDA: Mars established founder of Cocoa Reference Group of upcountry buying units CSP 2020 roadmap Sustainability Partnership sustainable cocoa 2000-05 introduced: (CSP): 2006 2009-10 2013-2020 2015 2000 2010 2005 PRIMA project: The Netherland Embassy Mars Cocoa Development Mars introduced CDC-Centre-MCDC established: CVC concept of and Mars-2003-05 business extension service model Mars Compost development 2013-present research : 2005-07 Mars pledged for 100% sourcing certified bean by 2020 and begin to implement own certification program 2010-currently externalizing to

Figure 5.4 MSI project collaboration and partnership with extra-firms since 2000

Source: Owned compilation of multiple sources from firm reports and online media

Exploration of Indonesia's upstream cocoa development reveals that MSI has played a significant role to involve the supply chain partners and local and global extra-firm actors since early 2000. Figure 5.4 shows MSI's participation in a range of project collaborations with diverse actors, while

suppliers

developing its own initiative towards meeting global commitments and introducing a small business model of compost and private extension services. The scope of these sustainability engagements ranged from market interventions (e.g., introducing a transparent, quality-based farm market in 2000) to opening a certified bean market in 2010. In this way, Mars combined research and farming management extension services, including the PRIMA project in 2003, establishing the Mars Cocoa Development Centre (MCDC) in 2008, and joining IFAD-READ program in 2011 and CPQP-SCPP program in 2012.

Among these sustainability engagements, developing a small business model approach to upstream sustainable cocoa development was innovative (Neilson and McKenzie, 2016) considering that most of the extension services in Indonesia's agrofood sectors were often taken for granted (1) as the government's responsibility; or, (2) as development projects of the developed North-based countries aiming to support rural development and poverty alleviation. Neilson and McKenzie (2016: 26) describe the CDC-CVC model in this way:

The business-oriented farmer outreach programme is essentially an institutional innovation, through which knowledge and skills are being shared within farm communities. An important aspect of sustainability in this model involves the financial viability of the CVC business units, and training is being provided in business administration (including basic accounting), planning, monitoring, documentation and marketing.

Before introducing an integrated business-extension service, MSI introduced their Cocoa Development Centre-Cocoa and Village Centre (CDC-CVC) model. Under the early development of this extension-business model, MSI included individual and group-based approaches to compare the effectiveness of both approaches on compost and cocoa nursery businesses. For example, the group-based composting business was highly dependent upon good leadership and entrepreneurship, not only for managing the business, but also to overcome the geographical challenges of compost availability and accessibility for distant cocoa farms. As 'an assisted farmer stated that 'group composting business is not only laborious work, but also less efficient as our farms mostly in the highlands and often inaccessible by v (Respondent GL7, pers. comm, 2015; Respondent, LT8, 2014). While an accessible nursery business promised to gain significant short-term economic rent for the local market, once the business was imitated by other producers the local market could become over competitive leading to market failure, because of higher supply than demand.

Learning from these failures whereby local actors had tangible and intangible limitations on sustaining small businesses, MSI developed an integrated business-extension service model. This involved enrolling a few competent, specialised supply partners who were already competitive (due to economic scale, scope of functions, and capital imperatives) to replicate CDC-CVC's business model across their generic suppliers. This business model was used as a strategic tool for upscaling the business model of extension services, and used the market contract to enforce adoption of the model by supply partners. Based on their experience of the high cost of self-adoption of certification schemes, instead MSI externalised the certification scheme by using market incentives and assurances of long-term market contracts. Currently in the Sulawesi region, at least five CDCs have been established: Mars self-funded CDCs in East Luwu, Parigi Moutong and North Kolaka; and, by

two of Mars' prominent suppliers in Ecom (through their subsidiary TMCI in Polewali Mandar) and Olam Indonesia (in Kolaka). Despite Mars' plan to scale up the two CDCs in Luwu and North Luwu, a partnership including a Belgian NGO (VECO) and a local NGO koperasi Amanah agreed to establish a CDC-CVC in Polewali Mandar, West Sulawesi, and Olam has agreed to establish another CDC-CVC in North Kolaka, Southeast Sulawesi.

The slogan 'triple the yield of cocoa farms', is used to promote the standardised CDC-CVC business extension model, and this reflects Mars' commitment to long term development of the cocoa sector based on higher rates of production, rather than simply acknowledging conformity to sustainability, as offered by the certification schemes. According to a Mars supplier who supplies RA certified cocoa bean, the distinctive feature of the CDC-CVC concept is shifting from the traditional low inputs of the farming system towards an intensified farming system (Respondent SS13, 2014; Respondent CC5, pers. comm, 2015). This business model appears to contradict the RA concept of sustainable cocoa farming that promotes agroforestry, highly restricted agrochemical usage, and biodiversity conservation.

5.2.2 Governing a sustainable market

Using market-based incentives to encourage the adoption of a sustainability concept into the cocoa GPNs supports the argument for the limitation of linear industrial governance and the vertical metaphor of the GCC-GVC approach. This is despite the fact that both concepts highlight the leading roles of specific economic actors in exerting their power and authority over the networks, or chains. Focussing on Mars' production networks and their roles in Indonesia's upstream cocoa development, MSI cocoa grinding supplies two end market segments: conventional chocolate brands; and the functional brand (CocoaVia) that requires a far more integrated production network. The emergence and importance of the Chinese mainstream market tends to encourage the externalisation of non-core value activities (upcountry trading) to specialised and independent suppliers. With respect to the different market segments, MSI ensures intra-firm coordination for high-end products⁵⁸ through direct purchasing of wet bean from small producers and local collectors (see Figure 5.5). At the same time, the firm is building inter-firm partnerships with specialised and independent suppliers by sourcing dried bean for the mainstream market.

Coe and Yeung (2015: 129) define intra-firm coordination as:

'the internalisation and consolidation of value activity within the lead firm, the strategic partner, and/or the supplier firm in order to achieve greater firm-specific system efficiencies such as lower inventories and better cost control, greater market responsiveness and higher quality products or services'.

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Mars high end supplement product from cocoa flavanol extraction. The combined commitment on high quality scientific research and Indonesian people, Mars creates CocoaVia® supplement and patent the Cocoapro® process. Mars commitment to the cocoa farmers of Indonesia allow us to get the freshest, highest-quality cocoa beans available while helping to stabilize and strengthen the cocoa industry in that country, [Retrieved, March 2017] https://www.cocoavia.com/how-we-make-it/investing-in-indonesia

When configuring these high- end production networks, the core value of the Mars activity rests upon the upstream research, and the development of how to produce and extract higher flavonoids from the cocoa bean. Motivated by these requirements, Mars is fully investing in an integrated network, and strictly monitoring both the quality and standards of the production outcomes. With high investment in proprietary credentials that will define the value of the high-end product, externalising this value activity invites high risk of leaking the economic rent. As a result, this intrafirm coordination has also been applied by Mars to other cocoa producing regions including Bahia, Brazil and recently the *Hacienda La Chola* cocoa farm. While these direct investments in production are relatively insignificant in terms of Mars' total cocoa needs, the foray into plantations suggests the firms' increasing concerns, and perceived risks of supply.

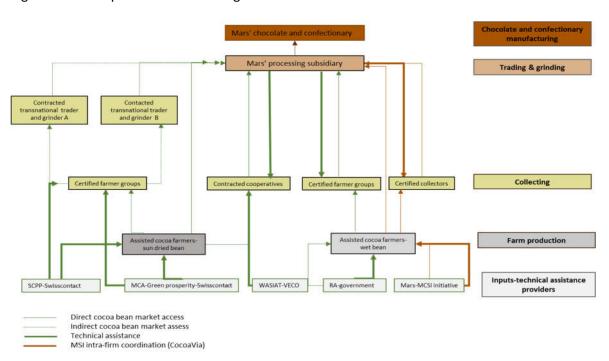


Figure 5.5 Mars' production network governance of certified cocoa in Indonesia

In an attempt to configure these production networks, from the early establishment in the Sulawesi region, MSI has designed and developed a selective wet market system that competes with the local mainstream market for unfermented dry bulk bean. Through collaboration with other actors and local governments that are also implementing value chain interventions in different forms of upstream services, MSI has gained local market access by building vertical coordination with farmbased actors. This has involved consolidating and disseminating the upgrading of farm management, with close additional support and technical assistance, lower market barriers and accessibility to updated information on farming innovation. In tandem with their investment in upstream research and development, MSI have extended their horizontal coordination with extra-firm actors in the form of joint research collaborations with government-affiliated research institutes (e.g., ICCRI and BRIEC), international research groups (e.g., ACIAR and IFAD), and local universities. Not only is MSI seeking desirable varieties and (or) applicable small-scale farming management, but is also undertaking in-house research into the fermentation and flavonoids extraction process.

Coe and Yeung (2015: 142) define inter-firm partnerships as:

'collaboration, co-evolution and joint development of a lead firm and its strategic partners or key suppliers in the same GPN in order to compete against their network partners'.

This strategy creates mutual relationships based on complementariness and capabilities (production assets, compatible technology, and local market expertise) and open transparent standards (sourcing policies) that enhance trust sufficiently to pursue the substantial resource commitment between the lead firms and their supply partners. Within this production network, MSI exercises control over inter-firm partnerships with multiple suppliers and creates a competitive market environment, allowing the local market (see Figure 5.5) to supply mainstream cocoa -related products. The volume based trade of sun-dried cocoa beans has involved specialised transnational firms (e.g., Olam and Ecom subsidiaries) and independent suppliers (cooperatives and local traders). MSI has further externalised certification costs to these partner suppliers in exchange for certified market assurance and negotiated premiums.

As well as being alternative instruments allowing the transnationals to independently verify their participation in addressing ethical and environmental issues, the certification schemes also assist with information about market imperfections in the producing countries that were previously controlled by transnational trading firms and opportunist national exporters. In addition, the scheme provides ex-ante passage allowing a guarantee of supply while minimising incidents of supply production fraud, as the estimation of farm productivity was a key source of information about supply capacity. In their attempts to stabilise the market by understanding how the ex-ante supply capacity was followed by the desired quality, most of the transnational firms entered into market contract agreements. This was followed by the establishment of collecting hubs that receive technical assistance and support from supply partners. Collecting hubs, which serve as an internal control system, connect unorganised farmers with different services that will ensure good farm management and encourage a shift to more sustainably sound (and potentially higher-yielding) farming practices.

Currently, farmers participating in certification schemes are privileged to receive free technical assistance without any market restrictions, yet the market incentive transferred to the groups remained unclear. As one group leader criticised the scheme, 'we are not the certificate holder, so we don't know how much the incentives while we are overwhelming with administrative works and bear the coordination cost' (Respondent GL4, pers. comm, 2014). While the certificate holder who also suppliers claimed that the incentive can be in different forms, since they also cover the other cost linking to sustainability initiatives (Respondent LT5, pers. comm, 2014; Respondent CC3,, 2015).

The volume based incentive for the (voluntary) certification market emphasizes supply capability, as the higher incentive comes with a high volume of market contracts. Thus, the supply capacity defines the suppliers' competitiveness. But, this capability does not necessarily extend to individual smallholder farmers because the schemes are unable to guarantee enhanced farm productivity for the individual farmer. Therefore, to complement the adoption of certification scheme, the competent suppliers are also required to adopt and establish a CDC-CVC extension service system with primarily focused on assisting individual farmers to improve their farm productivity.

However, the adoption of certification schemes for market access and value added was accompanied by certification costs which included the annual compliance verification, promotion and training services, the operational cost of the ICS (or certificate group holders), and the certification fee. Although there was no limitation of farm size or farmer participation in the scheme, the general initial certification cost was estimated to be between approximately US\$40,000 – US\$80,000 per certificate holder (Respondent CC5, pers. comm, 2015; Respondent SS13, 2014; Respondent SS17, 2016). Delivering training services was the biggest cost for maintaining the certificate holder status, for the assisted cooperatives and farmer groups, the cost was supported by the external actors' including donor agencies, government and non-government organisations. To minimise the training cost, the transnational firm who also certificate holder was more selective to enrol the smallholder farmers, as often targeting more experienced and previously assisted farmers. These costs tended to reduce for the second, third, and fourth years following the less intensive training program, shifting to strengthening coordination with the ICSs and annual auditing, to as low as US\$ 10,000 per certificate holder.

Table 5.1 Distribution of RA certified suppliers and production in Indonesia

Year	Suppliers	Number of certificate holder groups	Market operation (tonnes)
	PT Olam	10	17,189
2011	PT TMCI-Ecom	4	5,659
2011	PT MSI	3	4,109
	Cooperatives	2	1,303
	Total	19	28,260
	PT Olam	8	25,560
2042	PT TMCI-Ecom	3	5,770
2013	PT MSI	1	3,570
	Cooperatives	3	6,548
	Total	15	41,448
	PT Olam	5	22,058
2045	PT TMCI-Ecom	5	7,274
2015	PT MSI	1	3,570
	Cooperatives	2	4,082
Total		13	36,984

Source: Sustainable agricultural network, SAN. [Retrieved, July 2016, 2015, 2014] http://san.ag/web/

The high cost of the certification scheme appears to have been the main factor underpinning the collapse of many smaller suppliers and the significant reduction in the number of Olam certificate holders (see Table 5.1). The financial dependence on external supports (e.g. IDH, WCF, and MCA under the multi-stakeholder partnership platform) and the small volume supply to the certification market have become major obstacles for small-scale suppliers to continue accessing this market. This cost efficiency also affected the MSI decision to only maintain one certificate holder in Luwu. Focussing on the development of their CDC-CVC extension model, MSI attempts to strengthen the firm's long-term business strategy by externalising the short-term commitment of sourcing certified from competent suppliers.

Table 5.1 shows how the small suppliers (at least one cooperative) struggled to maintain their capability to access the RA certified market between 2011 and 2015. At the same time, MSI's major supply partners, e.g., PT Olam and PT TMCI-Ecom, were able to continue to serve this market with a significant increase in supplying volume over the same period. Both suppliers developed their own models of intrafirm coordination through upcountry buying units. PT Olam has at least five buying stations in the Sulawesi region (Palopo, North Luwu, Pinrang, Kolaka, and North Kolaka) and two outside of Sulawesi (Lampung and Seram Island). While the subsidiary of Ecom, PT TMCI have at least six buying stations operating in West, Southeast, Central and South Sulawesi, and an additional four buying stations outside of Sulawesi. In 2013, Ecom Agricultural Corp Ltd acquired London-based commodity trading Armajaro Holdings Ltd, and continued to operate some of their buying stations that had been certificate holders since 2011, whilst other less efficient stations were closed down. Olam has halved their number of certificate holders since 2011, following the establishment of two CDC-CVCs in Kolaka and North Kolaka. The firm has integrated production networks by diversifying the upstream functional roles, including the establishment of cocoa plantations and fermentation facilities on Seram Island. While Ecom's subsidiary has slowly increased certificate holder numbers to Polewali Mandar and North Kolaka, in addition to ongoing geographic expansion of UTZ' certification scheme in the new region.

In 2015, MSI opened a market for UTZ certified cocoa in response to European market demand in the Netherlands, Belgium, Germany and Switzerland. Shortly after, Olam and TMCI-Ecom responded to this market. However, the UTZ scheme only publicly shares the list of cocoa certificate holders in Indonesia (dominated by Olam and Ecom), without detailed information regarding metric tonnes of production. According to an UTZ impact report (UTZcertified, 2014), however, the certified cocoa trade in Indonesia increased significantly from 3,238 tonnes in 2011/12 to 33,768 tonnes in 2014. The non-disclosure of this information was requested by the certificate holder members who preferred to keep the supply information confidential (Respondent SS8, pers. comm, 2015). As such, it is difficult to identify which certificate holders are capable and incapable of serving the market, and to identify any clear trends.

The adoption of both certification schemes by the Indonesian cocoa sector evinced the dominant participation of two suppliers, e.g., Olam and TMCI-Ecom. The external supports from the North based development agencies (under multi-stakeholder partnership platform), NGOs and local cooperative also showed growing interest in introducing these schemes as a means of improving the livelihoods of the cocoa producers; e.g., the collaboration of Veco and *koperasi* Amanah, and Swisscontact. Within these emerging schemes, the collecting hub became a key farm level institution that slowly reformed the imperfections in the farm market structure, which had previously been the least developed and informal segment of the chain. The main feature of the schemes was a traceability system that allowed the buyer to trace back cocoa origins and to exert any necessary measures on producers. The contract market system served as a self-enforcement instrument, as the terms were negotiated and adapted to specific requests as well as externalised the supply risks.

Despite the potential global market accessibility and exchange of tacit knowledge, eventually the supplier become the subject of market demand shift and facing multiple risks: disruption causing uncertain supply related to environmental challenges or other unprecedented issues; rapid changes in technology and price volatility. Although the last two risks may have been influenced by the lead

firm, the unprecedented issues - in addition to asymmetrical competition of economic scale and scope - were more complex and widely dispersed across the geographical locations, particularly affecting the less competent local actors.

5.2.3 Extra-firm bargaining strategies

MSI has criticised the inadequacy of the voluntary certification schemes to drive upstream farm productivity increases, while the KPMG (2012) study showed the high (first year) costs for smallholder farmers to obtain certification. The shared interest in achieving sustainable agriculture and rural development by both Mars and several extra-firm actors manifested in different forms of partnerships, extending the scope of collaborations and creating a coordination platform for the local stakeholders (see Figure 5.4). The firm's sustainability concept was extended and embedded in the partnerships following intense negotiation, and compromised any prospects of opting out of the partnership, depending on the value activities of each extra-firm actor. Coe and Yeung (2015: 151) argue that this strategy applies in a two-way process of negotiation and accommodation between the firms and extra-firm actors in the interests of mutually satisfactory outcomes based on the creation, enhancement and capture of value within the GPN.

From the national and local perspectives, the supply threat in the early 2000s was followed by a series of US-funded support programs for Indonesian cocoa farmers. While direct access to the export market contributed to the tighter enrolment of the smallholder farmers in the global production network, the subsequent introduction of an export tax contributed to increased foreign direct investment (FDI) in Indonesia's cocoa processing factories. These changes not only upgraded Indonesia's function from cocoa bean to processed cocoa exporter, but also increased the dominance of transnational firms over Indonesia's emergent cocoa industry. These changes in territorial dynamics had a direct effect on how MSI has reconfigured its production networks. For example, the increased Mars (global) investment in China and factory expansion in Indonesia was also influenced by policy incentives and the removal of trade barriers for cocoa products (ie. a bilateral agreement between China and Indonesia in 2006⁵⁹ and implementing the export tax in 2010).

MSI's interest in farm management research and rural development attracted the extra-firm actors' interest in partnering with them, and in sharing resources and expertise. This capability led to dominant roles in negotiating the focus of the partnership activities in their favour (see Table 5.2). MSI's partnership with the rural empowerment and agricultural development (READ) program in West Sulawesi, Maluku and Papua (funded by IFAD) specifically aimed at improving farmer yields and productivity through the adoption of the Mars CDC-CVC concept of sustainable service delivery. Because of MSI expertise and experience in delivery of extension services and rural community engagements, this partnership positioned MSI as a dominant actor in designing, supplying the expertise with updated technology and supervising the program's implementation.

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⁵⁹ China has removed the import duty of Indonesian cocoa and will commence on 1 January 2007, published on23 October 2006, http://www.foodnavigator-asia.com/Policy/China-to-lift-tariffs-on-Indonesian-cocoa

Under MSI's supervision, the Mars CDC-CVC concept was scaled up outside of Sulawesi without necessarily making any commitment to providing a market for the assisted farmers while IFAD and the local government managed and implemented the program. Meanwhile, they also partnered with the CPQP-SCPP program with an explicit objective to improve farm productivity and quality. While the program opted not to adopt the CDC-CVC concept, MSI intervention during the implementation of the program included dictating the areas of intervention, and the selection of MSI-affiliated collecting hubs (Respondent CC5, pers. comm, 2015; Respondent SS13, 2014; Respondent SS19, 2014). Individual relationships with the local government were evident in the allocation of provincial government revenue for adopting the certification scheme parallel with the GERNAS program.

Table 5.2 Different extra-firm bargaining forms by MSI

Extra-firm bargaining strategy	Affiliated (partnered) actors	Roles	(Expected) outcomes				
Public private partnerships							
1. READ program	IFAD and GoI (soft loan	Alternative sustainable	Geographical supply				
(West Sulawesi,	program); certification	market; knowledge and	expansion; building trust of				
Maluku, and Papua)	bodies	technology hub; input	tripartite; increasing adoption				
		accessibility	of certification schemes;				
			adequate infrastructures				
2. CPQP-SCPP program	Netherland government	Donor; alternative sustainable	Increasing farm productivity				
	(donor); Swisscontact	market; dictating value	and adoption of certification				
	(implementer); local	activities	schemes				
	government; certification						
	bodies						
Multi-stakeholder partn	nership						
1. National reference	RA; IFC; Ministry of trade;	Initiator to establish national	National platform; gain				
group (NRG kakao)	Business watch Indonesia	reference for sustainable	interest on adoption				
		cocoa	sustainable schemes				
2. Cocoa Sustainability	Cocoa stakeholders	Initiator; dominant	Supply security; negotiated				
Partnership (CSP)	dominated by private	management position	forum; more diverse				
	sectors (global and local)		members; capability to				
			influence public policy				
Group (CSP) lobby	Group (CSP) lobby						
1. Gernas kakao	National and local	CSP members support the	Sustainable cocoa industry;				
program	government; ICCRI	government program;	restoring farm productivity				
		initiated strong relationship					
		among the cocoa					
		stakeholders					

As domestic industrial and exporter associations became politically established in Indonesia, they were frequently used as a lobbying instrument to approach the government in attempt to protect domestic actors' interests. At the same time, transnational firms saw this lobbying influence as rivalrous as they had relatively limited negotiating space in which to engage with public policy debates in Indonesia. However, the establishment of the national platforms for multi-stakeholder engagement, CSP and NRG, reflected a significant contribution by MSI to specifically accommodate and upscale their ambitious agenda of achieving sustainable cocoa industry and wide-sale certification. Following the government initiation to develop a national cocoa program in 2008,

Gernas kakao, CSP submitted strategic recommendations that highlight the strategic roles of transnational firms (re. MSI and Cargill) as equal partners in designing and implementing the program (Neilson, 2008b). One highlight among the other recommendations was the integration of existing firm's sustainability program (e.g. MSI and Cargill) and government (designed) program. For example, the recommendation to combine different sources of cocoa seedlings beyond exclusive supply from government affiliated institutions and agencies. However, these recommendations were not heeded by the government, who instead designed a program that highlighted the significant role of government agencies and affiliated organisations in delivering the Gernas kakao program.

CSP remains as important instrument for engaging with cocoa stakeholders, particularly in promoting the MSI agenda of wide-scale adoption of certification schemes. This effort is reflected on the *kakao lestari* National Reference Group (NRG) website⁶⁰, in reference to its rationale for producing certification guidelines:

To design national indicators as a reference for the certification bodies. The aim is a strategy to address the increasing number of international certification bodies. (Menyusun indikator nasional sebagai referensi kepada lembaga sertifikasi. Tujuannya sebagai strategi untuk menghadapi semakin banyaknya badan sertifikasi <u>Internasional</u>).

Cognisant of the increasing market demand for certified cocoa and of the future of sustainable cocoa, through the Cocoa Sustainability Partnership (CSP) forum under the farmer empowerment working group, MSI initiated the design of a certification guideline (handbook) consisting of simple practices that could be adopted by the farmers to comply with the certification standards. As such, the content of these guidelines should be based on the national indicator for cocoa sustainability. (Melihat makin besarnya pangsa pasar produk sertifikasi dan untuk keberlanjutan kakao di masa mendatang, melalui Forum Cacoa Sustainability Partnership (CSP) di bawah bagian pemberdayaan petani(Farmer empowerment), MSI berinisiatif membuat suatu Buku Panduan (handbook) Sertifikasi berisi petunjuk sederhana yang dapat dilakukan petani di lapangan untuk memenuhi standard dari lembaga sertifikasi. Adapun isi buku panduan ini berdasarkan pada indicator nasional untuk kakao berkelanjutan, (CSP, 2012: p.iii-iv).

Although currently the NRG remains idle, the initiative was (highly) supported by MSI, which was the only global branded manufacturer to open the certified cocoa market (at the time). The initiative was to anticipate the growing number of certification bodies that could lead to confusion among the local actors, particularly small producers. Following the output of NRG on the national indicator for sustainable cocoa, MSI incorporated the indicator into the CSP's working group and further translated them into a grounded guideline for the local actors who attempted to adopt either RA or UTZ certification schemes. This joint endeavour resulted in the multi-stakeholder partnership using as an instrument to accommodate Mars' global commitment to fully sourcing certified cocoa by 2020.

⁶⁰ Organisation structure of the NRG, [Retrieved, October 2016] http://kakaolestari.org/organization.php

5.3 Governing Indonesian sustainable cocoa production networks: Nestlé case study

The Switzerland-based Corporation Nestlé is one of the pioneers of the dairy industry in Indonesia. The company has continued to diversify the dairy product portfolios in East Java, while also developing hot beverages - coffee - in Lampung, along with culinary seasoning and more recently, pet food. Focused on diversifying their dairy portfolio, Nestlé Indonesia sources cocoa powder to primarily supply the beverages/dairy products such as the *Milo* brand, rather than supplying chocolate and confectionary consumer products. The recent expansion of the Milo factory in West Java in 2010 led to increased domestic demand for cocoa powder. Within the Asian region, Nestlé's chocolate and confectionary factories are distributed throughout Thailand, Japan and China.

Nestlé's incorporation of the sustainability concept into Creating Shared Value (CSV) reflects the firm's concern for sustaining the industry, also for creating value for the shareholders as well as society. To deliver these societal commitments, the firm placed the CSV concept at the top of the pyramid, with the basic compliance of international laws and codes of conduct and protecting the environmental sustainability for future generations as the foundation. Broadly, the CSV concept focused on Nestlé's business issues, e.g., water management, promoting and producing affordable nutritious products, and stimulating rural development. More specifically, for the cocoa-based and confectionary category, value creating refers to rural development in the forms of improving farmer capacity to align with market procurement (purchasing traceable or certified products), and compliance with Nestlé's supplier code.

As a global firm, Nestlé recognised this ability to influence supplier behaviour across the value chain and engage with rural development, which thus became the prominent focus area for sourcing agricultural raw materials. As Nestlé emphasises in their 2015 annual report (Nestlé, 2016, p. 91):

Millions of farmers depend on our business for their livelihoods. More than 760,000 supply us directly or through co-operatives and collection centres, while others are part of longer supply chains. The wellbeing of these farmers, small-scale entrepreneurs and rural communities is intrinsic to securing global food supplies, while delivering our own growth strategy.

The above statement suggests a dependent relationship with the farmers as well as the other supply chain actors. At the same time, Nestlé identified its key role in supporting their livelihoods and ensuring their wellbeing leads to securing supplies and contributes to the firm's long term growth strategy. This statement also suggests that the firm's expectations on participation in rural development are motivated by economic interest rather than solely driven by societal or environmental issues that need addressing. Within the rural development concept, Nestlé identified three major challenges: (1) farming as an unattractive business; (2) low farming productivity; and, (3) the complexity of the supply chain. Linking these issues to the Nestlé confectionary segment, cocoa processing has been outsourced from confectionary manufacturing. This outsourcing of cocoa products has positioned strategic cocoa processors (or first-tier suppliers) as key actors connecting Nestlé with the smallholder farmers. As a result, traceability in rural development has become an important instrument to ensure the agricultural- based sourcing products are grown and processed responsibly in accordance with the supplier code, and can be traced back to their origins (Nestlé,

2016). Converting these issues into practice, Nestlé committed to implementing responsible sourcing along their supply chain, beginning to roll out Nestlé Cocoa Plans since 2011.

5.3.1 Nestlé's Cocoa Plan (NCP)

Nestlé's participation in upstream cocoa farm activities began with 'in kind-support'. For example, it introduced somatic embryogenesis (SE) propagation technology into established research institutes in cocoa-producing countries, including the National Plant Institute (CRNA) in the Ivory Coast and the Indonesian Coffee and Cocoa Research Institute (ICCRI) in Indonesia. Nestlé's strategic collaboration with ICCRI aimed to reach out to the government program without directly implementing the program. As a quasi-government institution, ICCRI tends to be very accommodating of government interests and is directly involved in implementing various government programs. From a functional perspective, ICCRI expertise in the upstream research and development of the coffee and cocoa sectors was complementary to Nestlé' sustainability interest. According to the Nestlé website⁶¹:

Based on the earlier cooperation agreement, Nestlé R&D Tours has granted the Somatic Embryogenesis (SE) technology to ICCRI to propagate coffee and cocoa plantlets in large quantity in a shorter period of time. With the SE technology from Nestlé, since 2008 ICCRI has successfully produced 21.6 million cocoa plantlets. These have been planted across 10 (ten) provinces in Indonesia to revitalise cocoa plantations with plants that are more productive and resistant to diseases. This will help the competitiveness of Indonesian farmers on the international markets.

In the same press release, the Legal & Corporate Affairs Director of PT Nestlé Indonesia, explained:

What we are doing today is part of our business strategy to create shared value along our value chains. Creating shared value (CSV) is the key to Nestlé's success. We believe that our long-term success is dependent on our ability to create value along our value chain, be it our shareholders, employees, consumers, society and our stakeholders.

Through the indirect approach of participating in the upstream development of the cocoa sector, Nestlé referred to this support as an example of long term business strategy. Shifting to long-term contracts of strategic collaboration, Nestlé has used market mechanisms to impose this strategy across their supply partners while extending networks though active engagement individually with affiliated extra-firm actors and collectively through multi-stakeholder partnerships.

⁶¹ Nestle agreement [Retrieved, October 2016]
http://www.nestle.com/media/pressreleases/allpressreleases/agreement_iccri

Nestlé Indonesia joined CSP: 2013 Nestlé Indonesia, a cofounder of PISAgro partnership: 2011 Nestlé Indonesia joined Nestlé Indonesia joined GP-SCPP: 2015-18 CPQP-SCPP program 2012-2015 2009 2010 2015 Nestlé R&D tour signed corporation agreement with ICCRI: Nestlé committed to 2009 source 100% Fairtrade Nestlé Indonesia and for UK and Ireland Petrafoods signed market by 2015 MoU for sustainable farming: 2011-unclear

Figure 5.6 Nestlé' collaboration and partnership with its extra-firm actors

Source: Author' own work from compilation of multiple sources

One of Nestlé's first farm-level interventions in Indonesia was undertaken as part of the Petrafood' SEEDS program in West and South Sulawesi, in partnership with a local supplier, Bumi Surya, which maintained an arms-length relationship with Petrafood, then a strategic supplier of intermediate cocoa products to the company. The early implementation of the program (in 2011) outreached approximately 1,000 farmers from the West Sulawesi region (see Figure 5.6). The farmers received training in good farming practices, and were supplied with quality planting material from established nurseries for rejuvenating unproductive cocoa farms under the SEEDS program in collaboration with Nestlé. The firm acknowledged that the initiative aimed to not only meet the customer's (Nestlé) demand for a responsible supply chain, but also expected to retain the loyalty of the cocoa farming community (Petrafoods, 2013). As the CEO of Petrafood stated during the launching of SEEDS in Lampung⁶²:

"By developing a fully traceable cocoa supply chain, Petrafoods' customers can be assured that our beans come from farmers who are fairly rewarded for their efforts, and that our products are sustainable, of good quality and produced with social integrity as a high priority. Through SEEDS, we have better control of the supply chain-literally from seeds to mouths".

Because Nestlé regarded sustainability as creating shared value, this notion suggests Nestlé as a value creator in the form of (voluntarily) regulating sourcing policy, even though the extent of Nestlé engagement was also based on the economic rational. For example, the dairy and coffee sectors received more attention and investment in upstream development compared to the cocoa sector

News highlight of Petrafood, Petra Foods' "SEEDS" cocoa sustainability initiative bears fruit with 7 programs in Indonesia, Africa, Brazil and Vietnam. [Retrieved, October 2016]
http://delfilimited.listedcompany.com/newsroom/20121017 173220 P34 9FADE5445E9CE03948257A9A00289553.1.pdf

because both sectors were major revenue sources for Nestlé. Despite the rhetoric about quantifiable output measures and achievements, Nestlé primarily used market mechanisms to incentivise strategic suppliers such as Petrafood (whose cocoa processing activities have been recently taken over by Barry Callebaut) to enter joint initiatives aiming to provide technical assistance to the West Sulawesi farmers. It has done this in addition to providing generic funding for partnership-based sustainability cocoa programs, such as CPQP-SCPP, GPP-SCPP, and WCF-CocoaAction. With selective market commitment to producing a certified product, the early implementation of the NCP was combined with introducing a 'traceable market' as an initial platform to ensure the origins of the cocoa bean. This traceable platform, which was further developed by the SCPP program, was also known as 'cocoa-trace', and provides an individual farmer database system to monitor and measure the state of individual farm productivity, along with market and microfinance accessibility particularly in the West Sulawesi region.

5.3.2 Governing sustainable markets

Nestlé's broader commitment to society under the NCP program was dependent on the commercial relationships with strategic suppliers and specialised suppliers. Nestlé's responsible supplier code and sourcing guidelines, published in 2013, required the supply chain partners to: comply with the specified codes, which embed aspects of international law and the Convention on Human Rights; comply with the relevant environmental management system (ISO 14001: 2004); also, to comply with the applicable ethical trade laws and regulations of the respective countries (Nestlé, 2013a).

The codes and guidelines are embedded in Nestlé' internal procurement procedures as a coordination tool not only for the upstream supply measures, but also to exercise the suppliers' competitiveness and reshape the nature of the commercial relationship towards a greater degree of vertical coordination. This interpretation of the generic supplier code is supported by *crop guidelines* that have been identified based on each crop accordingly to the relevant issues. While Nestlé recommended guidelines for cocoa suppliers regarding how to improve farming practice (referring to the UTZcertified Good Inside code of conduct 2009), this was recommended as a voluntary scheme, despite the commitment to continuously increase UTZ certified cocoa's market share (Nestlé, 2013b). Framing it as responsible sourcing, Nestlé technically used the market imperative to impose the supply code and standards, and to address social and environmental issues across the supply chain that lacked enforcement (or were missing) from the public regulatory sphere, particularly in the cocoa producing-countries.

Nestlé defined the code as a non-negotiable minimum standard for the supply chain actors to comply with, as part of sharing responsibility. The firm was expecting the scope of compliance to be extended to supplier subsidiaries and affiliates including the upstream suppliers and other third parties. Implementation of the code has become a pre-requisite for every Nestlé supplying contract. The code, which has become the reference when making a purchase order, demonstrates the supplier's shared commitment (Nestlé, 2013a). Within the Nestlé cocoa production network, the direct suppliers (or first tier suppliers -see Figure 5.6) are the intermediate actors who connect with the smallholder farmers. As the lead firm, Nestlé conducts audits themselves and through third-party certifiers, verifying supplier compliance with the codes and guidelines. The results serve as a reference that will assess future commercial relationships.

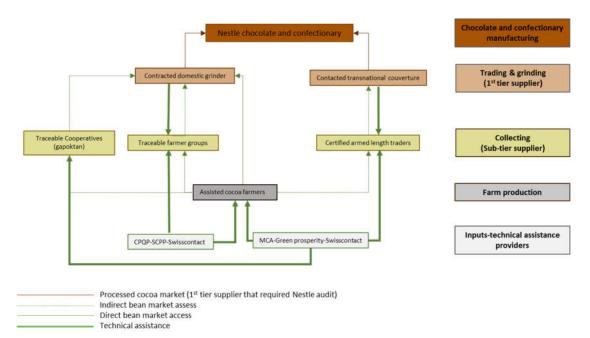


Figure 5.6 Nestlé value chain governance of responsible cocoa sourcing in Indonesia

The governance strategy in Nestlé's cocoa production network depends on the geographic market of the end-product. Strategic partners are offered long-term contracts in order to serve the high-end market in the form of inter-firm partnerships. For example, with Barry Callebaut who owned advanced capability to produce a wide range of cocoa and chocolate products, its strategic investment in technology and research for novel functional ingredients, and the dominant economic scale of its couverture segment, have positioned the firm as a significant and highly strategic partner for Nestlé. When serving the other product lines whereas the cocoa products serve as complementary ingredient, Nestlé opts in favour of casual contracts with fragmented specialised suppliers (e.g., BT Cocoa) to supply generic chocolate-flavoured dairy or cereal production, for example to supply the recently expanded *Milo* factories.

The limited engagement with the smallholder farmers have distant Nestlé from the upstream production and replaced by the first-tier suppliers. As the suppliers are also cocoa processors, the focus on value chain intervention under the sustainability context was not limited to sustainable onfarm production, but also attempt to improve off-farm production such as market incentive for fermented bean. However, the small incentive was insufficient to cover the additional labour for fermentation process, the risk over failed fermentation, and limited market. As a farmer from Polewali Mandar said 'it is only fair if the incentive double because fermentation means delaying for (quick) cash and the small-infected bean can't be fermented' (Respondent FG3, 2014; Respondent FG11, 2015). Reluctance from the smallholder farmers to carry out fermentation function thus performed by the local traders who also arm-length of cocoa processor to buy wet bean and produce fermented bean.

Despite the upstream challenges related to low quality bean and yield, adherence to industry self-regulation within the cocoa production networks over the last few years has increased market barriers for many suppliers. Consolidation of the network, as well as fuelling competition, has further

limited the number of participants to a small number of competent suppliers. The consolidation process, effected through a coordinated network in the form of traceability, has increased supplier transparency. However, this process has also ensured Nestlé' comprehensive control over the rights to verify code compliance in its favour. The firm's commitment to sourcing certified cocoa products was influenced by particular market demands. The sourcing of third party certification (including UTZ, RA and Fairtarde) of cocoa beans was in response to criticism from the civil society groups (e.g World Vision)⁶³. In response, four brands (Nestlé, Mars, Mondelēz and Lindt&Sprüngli) pledged to produce sustainable chocolate for the Australian market⁶⁴. Whereas, the Chinese market emphasizes traceability through the Chinese rules of origin (WTO, 2013). Such regulations are absent in other Southeast Asian countries. The variations in market regulation and in supporting firms' participation in addressing the social and environmental issues may dissuade Nestlé from fully adopting the third-party certification scheme and simply preserve the self-regulated supplier code.

Traceability, a dominant feature, has become embedded in the firm's supply policy ever since the firm decided to outsource and externalise sustainability costs to the strategic supplier rather than maintain an integrated production network. Given this supply dependency, traceability could prove an effective instrument for minimising economic loss from the media backlash and to ensure spatial monitoring to assess the extent of environmentally and socially destructive practices, such as deforestation and child labour. In essence, traceability is not only assists supply management, but also minimising geographically-related abusive social or environmental practices across the supply chain. Through CocoaTrace, Nestlé's supplier partners are able to monitor and possibly forecast supply from the farm level, minimising chances of any expensive supply fraud perpetrated by the mainstream market, whilst better coordinating their purchase orders, and transforming into tighter vertically-coordinated networks without assuming the risks of ownership. This extends to farm management, cocoa purchasing and processing to chocolate bar production and marketing. Moreover, the instrument provides administration records of source of origin as evidence to confirm that Nestlé sourced from responsible farming and processing practices.

5.3.3 Extrafirm bargaining strategy

Applying strategic outsourcing, Nestlé plays an indirect role in upstream cocoa development, with more focus on building relationships with affiliated stakeholders (see Table 5.3). The firm explicitly acknowledged the donor position under the CPQP-SCPP and GP-SCPP programs, and had a certain degree of power to direct the core activities of the program such as the establishment of a CocoTrace platform. Nestlé also played a dominant role in the establishment of a multi-stakeholder partnership for Indonesian sustainable agriculture (PISAgro), as the leader of several working groups, e.g., dairy, coffee, and (previously) cocoa. According to Nestlé' Indonesia Sustainability Agriculture

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⁶³ The impact of certification system, published by Stopthetraffik Australia Coalition, [Retrieved, December 2016] https://www.worldvision.com.au/docs/default-source/publications/human-rights-and-trafficking/a-matter-of-taste.pdf?sfvrsn=4

Australian leading chocolate companies pledged for sourcing sustainable cocoa for domestic consumption, published on 23 March 2016, http://www.confectionerynews.com/Markets/Australia-s-top-chocolate-makers-commit-to-sustainable-cocoa

Development Director (Respondent CC4, pers. comm, 2015): '[T]he partnership (PISAgro) is important for the private sector to approach the government (or other public organisations) in seeking for their support, because individual approach may rise negative backlash from the public'. From this perspective, the partnership provides access for foreign industrial actors to reach out to the government, or specifically to the public services and policies provided by government. The engagement with public policy is also reflected in the governance structure of PISAgro, which positioned the government (relevant ministries) as an advisor with the primarily roles of connecting the (working) group leaders to senior officials and key decision makers⁶⁵.

Table 5.3 Different extrafirm bargaining forms developed by Nestlé Indonesia

Form of extra- firm bargaining	Affiliated (partnered) actors	Roles	(Expected) outcomes
Public private part	nerships		
1. CPQP-SCPP	Netherlands government (donor),	Donor; alternative	Increasing farm productivity
program	Swisscontact (implementer), local	sustainable market;	and adoption of certification
	government, certification bodies	dictating value activities	schemes
2. GP-SCPP	MCC-US based independent	Donor; alternative	Increasing farm productivity
program	agency (donor), Swisscontact	sustainable market;	and established traceability
	(implementer), local government,	dictating value activities	and (or) adopting certification
	certification bodies		schemes
Multi-stakeholder	partnerships	1	•
1. PISAgro	Ministry of Agriculture, Trade,	Co-founder	Capture the value of
	Finance, Swisscontact, Cargill,		partnership from the global
	UTZcertified		and local stakeholders
2. Cocoa	Cocoa stakeholders (global and	Member	Supply security, negotiated
sustainability	local)		forum; more diverse
initiative (CSP)			members, capability to
			influence public policy
Industrial group lo	bby	-	
1. Continue	Ministry of agriculture, local	Lobbyist	Government funding for
Gernas program,	government		securing the cocoa supply,
2015			policy in favour for the
			downstream actors

Despite widespread criticism of the effectiveness of the government's Gernas program (2009-14), as will be discussed further in the next chapter, the program was extended in 2015 as Pro-Gernas (also referred to PPKB) after the new elected president (Joko Widodo) visited the assisted farmer groups via the CPQP-SCPP program in Mamuju, West Sulawesi in November 2014. Following the visit, the working group leader met the President after the inauguration of the Jakarta food security summit at the Presidential palace, in Jakarta on 14 April 2015. In the following month, the government announced the continuation of Pro-Gernas Kakao funding via an amended-national budget for 2015. In addition to the political promise from the President, the continuation of the program was also enthusiastically supported by the director of the Indonesian Cocoa Industry Association (AIKI), who

⁶⁵ PISAgro governance structure, [Retrieved October 2016] http://pisagro.org/governance

was also Director of BT Cocoa and a Nestlé' supply partner. In this case, a long-term contract with a domestically-owned cocoa processor seemed to afford an addition means of lobbying influence.

Multi-stakeholder partnerships have served as an instrument facilitating transnational lead firms' access to public policy and services that previously tended to favour domestic firms. Domestic economic actors are often politically seen to be the key actors' contributing to the national economic growth. On the other hand, the transnational firms are seen as business rivals by both domestic actors and some government officials. Regardless, they shared similar economic interests based on implementing a program on how to improve farm productivity and quality. Following the continuation of the Gernas program, the current leader of the PISAgro' cocoa working group stated:

The local government should be entirely involved in this program. So, there is ownership from the government. What we have been trying in the next few months was to harmonise our program with the Gerakan nasional Pro Kakao as initiated by the government. The Ministry of Agriculture is currently preparing the sustainable cocoa program. The first Gernas kakao was considered to have failed. Now, we can't afford another failure. The biggest mistake on the first Gernas kakao was that the government didn't listen to the industry. (Pemerintah daerah harus sepenuhnya terlibat dalam program ini. Sehingga pemerintah merasa memilikinya. Apa yang kita coba lakukan dalam beberapa bulan kedepan adalah menyelaraskan kegiatan kami dengan Gerakan nasional Pro Kakao yang dicanangkan pemerintah. Kementrian Pertanian sedang mempersiapkan program kakao berkelanjutan. Program Gernas kakao yang pertama bisa dikatakan gagal. Sekarang, kita tidak bisa gagal lagi. Kesalahan besar pada Gernas kakao yang pertama adalah pemerintah tidak mendengarkan industry), (PISAgro news, 2015: p.20).

Recognition of the government's failure to deliver the first Gernas kakao program (also stated by Purwanto, 2016, and Rheza and Karlinda, 2013) should have been a lesson learned. The current cocoa-working group members (e.g. Swisscontact, Nestlé Indonesia, Cargill and UTZcertified) urged the government to consider the harmonisation of public and private sector programs (PPPs), and using the multi-stakeholder partnership as a horizontal coordination platform for sustainability programs, including that implemented by the government. As a result, in September 2015, the Ministry of Agriculture, with the support of the national associations (DEKAINDO, ICCRI, ASKINDO, AIKI, and APIKCI), signed an MoU on a cocoa economic cluster partnership (CEPAT) with CSP in order to achieve the Pro-Gernas target of increasing cocoa productivity and quality (CSP, 2016). Although this partnership was premature for assessing the extent of CEPAT's influence on public policy, the Indonesian government has recognised the multi-stakeholder platform and shown interest on future engagement through the current multi-stakeholder partnership such as PISAgro and CSP.

Conclusion

The motivation to govern sustainability emerged concomitant with the expansion of globalisation, as economic activities expanded beyond single state territories in tandem with the growing market power of the north-based transnational firms towards the emerging south-based countries. It has also emerged at the same time as the competitive pressures on lead firms who are leading them to coordinate globally-dispersed production networks, characterised by high levels of outsourcing. The adoption of certification schemes within the frame of corporate sustainability initiatives apparently have facilitated compliance to international social and environment laws and consumer

expectations, which previously lacked enforcement (or was absent) from the states (generally) of cash crop producing countries (Raynolds et al., 2007; Tallontire et al., 2011; Silva-Castaneda, 2012).

With the growing dominance of the transnational firms in Indonesia's cocoa production networks, sustainability has become an instrument for vertically and horizontally coordinating the upstream production activities, and for reforming farm level market structures. This upstream coordination is highly dependent upon the economic rationales of the lead firms and the geographical structure of the production networks. MSI, for example, applies more than one vertical coordination (intra-firm coordination and inter-firm partnerships) to producing and sourcing sustainable cocoa bean as the firm establishing cocoa processing function and actively participating on upstream cocoa development. While Nestlé applies inter-firm partnerships with different types of supply partners (strategic and specialised firms) and meaningful engagement with the smallholder farmers is highly depending on the supplier capacity, as the firm' production is focus on the end-product manufacturing. The increasing transnational firms' upstream interventions under the banner of sustainability have become a vehicle for extending their interests towards horizontal coordination (extrafirm bargaining) that will eagerly engage with both government and broader cocoa stakeholders. Within the Indonesian context, cocoa sustainability partnerships also create a negotiating space for transnational firms to access public services and policies that previously often favoured the domestic firms.

6. State engagement with sustainability initiatives

Lead firms' increasing engagement with sustainability discourse and their investment in sustainability initiatives has attracted the interest of the state in Indonesia. This engagement indeed has extended the transnational firms economic activities to upstream cocoa production, delivering a range of (desirable) extension services, despite that such services were commonly as part of public services delivered by the government. However, historically Government of Indonesia intervened in cocoa sector had been limited as compared to Ghana and Ivory Coast. Akiyama and Nishio (1996) referred to 'hands-off' approach that eventually shaped the liberal farm gate market and more dynamic upstream production structure, but the lack of price-quality transparency (see more discussion in section 6.2.1). Because of this approach, the growing intervention of the transnational firms may not necessarily be weakening the government position or power within Indonesian cocoa production networks.

Not until recently, the upstream participation by North-based transnational firms in the Indonesian cocoa development is directly intersecting with the government's interest in developing a national downstream industry. In a bid to support downstream development of the cocoa sector, several industrial polices and incentives have been implemented to drive the development process and protect the growing industry. The increased vertical coordination and upstream market concentration, associated with the roll-out of sustainability initiatives, has moreover challenged the competitiveness of many domestic cocoa processors. The following section provides an overview of the Indonesian government's role in the recent development of the Indonesian cocoa sector and their response to the increasing upstream involvement of transnational firms associated with their sustainability agenda.

6.1 Consumer state role in upstream cocoa development

The evolving north-based firms' sustainability initiatives have been supported by the Netherlands and US governments through public private partnership platforms. These supports have already been presented in previous chapters, with particular involvement from the governments of the US, the Netherlands and Switzerland. The implication appears to be that, in practical terms, these governments are simultaneously supporting the upstream penetration of lead firms from their home countries.

The geographical distribution of cocoa grinding and chocolate consumption has expanded, with strong growth in origin-based grindings in countries such as the Ivory Coast, Ghana and Indonesia (see Figure 6.1). Over the last fifteen years, origin-based grinding has almost doubled, with much slower growth in the major consuming countries, such as the Netherlands, Germany and the US. In the largest cocoa producing country, the Ivory Coast, slowly increasing the investment on processing industry and outpacing the Netherlands processing capacity, yet dominated by transnational cocoa and chocolate firms. Despite the uncertainty generated by political turmoil, the Ivory Coast's significant supply capacity has attracted new investment and expansion. Currently, the Ivory Coast is the world's top cocoa grinder with a capacity of 532,000 tonnes, close behind the Netherlands. Its significant grinding capacity is dominated by six main companies: Cargill, the Swiss firm Barry Callebaut, France's Cemoi, the Singapore-based Olam International, and the Ivorian companies

including *Choco Ivoire* and *Ivory Cocoa Products*⁶⁶. Within this structure, the Ivorian cocoa industry is indicative of an oligopolistic structure whereby a small number of North-based firms dominate the domestic cocoa industry.

Within a global market environment where cocoa-producing countries are vertically integrating into cocoa processing, and emerging markets such as India and China are becoming key consumers, the lead chocolate firms are attempting to preserve their dominant position in the GPN. The Indian and Chinese governments have supported the removal of tariff barriers from cocoa-based products. Whereas non-tariff barriers (including certification schemes) have been applied by the private sector in mature European and North American markets, tariff barriers have been implemented selectively by consumer countries. The latter's aim was to protect their domestic industries from global competition, particularly the high value-added industries, while at the same time opening a market for low cost technology industries.

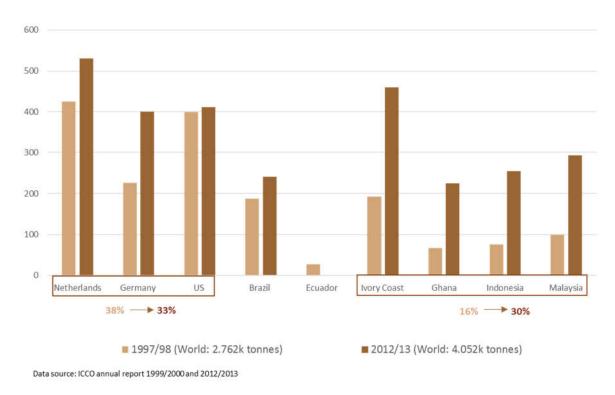


Figure 6.1 Shifts in global cocoa grindings between 1997/98 and 2012/13

However, the ability of north-based countries to implement selected tariff barriers for cocoaproducing countries is dependent upon their bilateral and regional relationships. The trade agreement between Indonesia and the European Union member countries - the European Union

Comprehensive Economic Partnership Agreement (EU-CEPA), signed in July 2016 - lowered the

⁶⁶ The Ivory Coast is the largest cocoa growing nation; but, only around 35% of its cocoa beans are processed within the country. The government is attempting to increase the processing capacity by half of total cocoa bean production, published, 25 July 2012, http://www.confectionerynews.com/Commodities/CEMOI-to-up-cocoa-grind-capacity-in-Ivory-Coast

import tariff on cocoa beans (but not on cocoa-based products) under the Generalised Scheme of Preference (GSP), subsequent to negotiations started in 2010⁶⁷. Due to the low quality of unfermented bulk bean, the European Union introduced a lower tax (GSP), with zero import tariff on the fermented quality of West African cocoa bean. This zero-import tariff incentivised a desirable high quality, for example Ghanaian cocoa bean supplies to the UK Cadbury factories. While the major industrial firms improved their capability to overcome low quality without compromising the quality of the end-product (Fold, 2002).

The significant increase in cocoa grinding in the origin countries challenged the dominant European grinding position in the cocoa GPN. The strategy employed by the cocoa origin countries to downstream their cocoa industries incentivised the cocoa processing segments and invited foreign direct investment (FDI) by North-based firms. But, such investment occurred at the expense of mature industries in importer countries like the Netherlands and Germany, triggering the removal of import tariffs on cocoa bean, while maintaining the extant import tariff on cocoa-based products.

6.2 Cocoa sector development and the Indonesian state

Development of Indonesian cocoa sector has different trajectories than Ghana and Ivory Coast whereas the (colonial and current) government have certain degree of power to shape the nationallocal production networks structure. Although cocoa was introduced to Indonesia during the colonial era, but the pest-disease problems and limited market (in Manila, Philippines) discouraged the farmers to maintaining cocoa farming during the colonial era, and the new government has limited interest to develop the export crops and more focus on food crops and extractive industries. As the global chocolate-cocoa industries have developed and the global market expanded to emerging countries, to capture and retain specific geographical advantage from the cocoa sector, the Indonesian government has attempted to integrate cocoa bean production with cocoa processing, to retain the value added from downstream industrial development. However, declining cocoa farm yields and the tendency to produce unfermented cocoa beans presents challenges for cocoa grinders in an industry where processing capacity has now quickly outstripped the supply of raw material. As mentioned in the previous chapter, the transnational actors' concern over the supply risk was a factor driving upstream sustainability initiatives in Indonesia. The increasing upstream involvement of transnational cocoa firms, and the poor competitiveness of domestic firms, then emerged as a concern for the Indonesian government, despite a commonly shared goal to improve cocoa bean production and quality. This in turn has prompted a national policy response. The discussion in the following sections introduces the role and influence of the Indonesian state in the development of the cocoa sector.

6.2.1 Early role of the state in cocoa development

Driven by a viable nearby export market in Singapore and Malaysia, the voluntary adoption of cocoa farming by smallholders in the 1990s delivered economic benefits at the farm-level and boosted export earnings. According to Akiyama and Nishio (1996), a 'hands-off policy' by the state

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⁶⁷ Indonesia currently benefits from trade preferences granted by the EU Generalised Scheme of Preferences, under which approximately 30% of total imports from Indonesia enjoyed lower duties, [Retrieved, March 2017] http://ec.europa.eu/trade/policy/countries-and-regions/countries/indonesia/

encouraged farm level marketing dynamism through the combination of a favourable macro policy, the availability of new land frontiers, and the low production costs associated with 'forest rents' (the cost advantages of growing cocoa on recently cleared land). In addition to growing demand of cocoa in neighbour country like Malaysia and Singapore, these combinations provided a suitable institutional setting for Sulawesi farmers to capitalise on conditions and integrating to the global cocoa production networks (Neilson, 2007). In effect, the entrepreneurship of smallholder farmers and local capitalist resulted in a competitive and liberal local market system. In the other hand, the formal institution exercised in the form of export standard (National standard for Cocoa, SNI), extension services, accessible micro-finance through formal institution did not developed (Neilson, 2007).

Following the collapse of the Soeharto regime in 1998, the intense political struggles calls for fundamental changes in Indonesian governance system, as the regions were asking for 'regional autonomy' (otonomi daerah) and moving towards decentralisation. The decentralisation process also did not contribute to institutional development in cocoa sector, despite the rhetoric argument that decentralisation will bringing the public services closer to the people. In contrary, decentralisation weakening the extension services department, as the local governments (re. provincial and district level) have autonomy to (re)arrange the institutional structure including merged different sectors of extension services under single department (re. agriculture and estate crops department, or estate crops and forestry department). The other trajectory from decentralisation is public service departments becoming more political rather than structural, as the elected leaders have prerogative power to orchestrate the key positions in administrative structures.

Despite the national government maintained the favourable policy environment for the local actor to integrating into the global cocoa production networks with limited interventions to establish formal institutions to support cocoa development, the liberal market had invited the foreign trading firms such as Cargill, Olam, and Ecom. The government decree⁶⁸aimed to facilitate the *plugging-in* of domestic firms into the global market, hence increasing market accessibility. The participation of transnational trading firms contributed to improved market accessibility for local actors, dynamic upstream economic activity and incentivised the intermediate trading actors. At the village level, collectors would commonly engage with more than just cocoa bean exchange, as their functions include being agro-input distributors, grocery sellers, and micro-finance providers. After the devaluation of Indonesia's currency in the wake of the 1998 monetary crisis, it was far more profitable for traders to supply the global market rather than domestic processors.

The major importers of bulk-unfermented cocoa were Malaysia, Singapore and the US. The European countries absorbed a smaller volume of trade due to stricter quality measures (which the poorer quality Indonesian cocoa frequently failed to comply with) and high import tariffs. For the Malaysian and US markets, however, the lower quality of Indonesia's unfermented beans was simply discounted rather than entirely rejected as a combined result of geographical factors and lower

⁶⁸ Specific regulations of foreign direct investment (FDI) to involve in export-import, Kemenperin no. 11/MPP/SK/I/1996

transport and logistic costs, and tariff reductions in line with the AFTA agreement within Southeast Asia.

From above discussion, development of Indonesian cocoa sector before 2010 is relatively different from Ghana and Ivory Coast, as the sector had not been subjected to the state dominance (or sovereignty) in the form of upstream cocoa development and market intervention. However, the state used the administrative power to accommodate a liberal market for the local actors to better integration into the global production networks.

6.2.2 Downstream industrialisation policies

The government's hands-off policy contributed to the maturity of a competitive upstream market and incentivised the participation of diverse intermediate trading actors in capturing economic gain from the liberal market, particularly in Sulawesi. By maintaining effective administrative roles in trading regulation, the government was also interested to capture the value-added of downstream industry and to become the Asian cocoa hub. Driven by this goal, regulatory incentives (VAT removal and zero import tax) aimed to compensate for the low-quality cocoa bean, which had hitherto limited the competitiveness of the downstream cocoa processing segment. A series of policy and regulatory shifts occurred from around 2010, with the explicit aim of nurturing downstream industrial development, as presented in Table 6.1.

Table 6.1 Policy shifts to support the downstream cocoa sector and associated structural change

Period	Cocoa bean	Cocoa products
Early development (before 2010)	- UU no 11/1994, application of 0% Export tax - Kemenperin no. 11/MPP/SK/I/1996, about procedures of FDI in export-import - UU no 18/2000 applies VAT 10% for primary commodity, PP no 7/2007 removes VAT 10%, - PP no 31/2007, 0% Import tax	
Farmers (n>10 ⁶)	- Collectors (n > 9,000) - Traders (n >1,000) - Regional/international exporters (n >5) National Exporters (n < 10)	Cocoa processors - National-less than 50k tons (n >30) - TNCs (n=2)
Downstream Industrialisation (2010-present)	- PMK no 75/PMK 011/2012, application of progressive export tax (5-15%) - MA RI no 70P/HUM/2013, apply VAT 10% - PMK no. 132/PMK. 010/2015, apply import tariff for cocoa bean (5%) - PMK 224/PMK.011/2012, Income tax (PPh) from importing article 22 (2.5%) - Permentan no. 67/Permentan/OT.140/5/2014 on mandatory fermentation (not effective yet)	- PP no. 94/2010 apply tax holiday for pioneer industries - PP no 31/2007 and PMK 76/2011 apply 0% Import tax on manufacture machineries - PP no 52/2011 apply tax allowance for strategic industries and areas - PMK no 132/PMK.010/2015, apply import tax 15-20% (except for ASEAN members) - Permenperin, No. 157/M-IND/PER/11/2009 for Mandatory SNI cocoa powder.
Farmers (n>10 ⁶)	- Collectors (n > 1,000) - Traders (n >500)	Cocoa processors - National (n=17 of recent established, 1) - International (n=3)
	Integrated cocoa trading and processing: Mars Symbioscience Indonesia, Cargill, JV Barry Callebaut-Comextra Majora, BTCocoa, and Olam Indonesia	

The process of 'downstreaming' the cocoa sector was especially supported by the imposition of the export-tax (PMK no 75/PMK 011/2012), which invited contradictory arguments from different members of Indonesia's cocoa association (ASKINDO). Domestic processors argued that maintaining cocoa bean exports meant that the value added was repatriated offshore since the trading segment was dominated by transnational firms, who were unlikely to support regional development. Ideally, it was argued that revenue from the export tax could fund national programs to support cocoa development programs (such as the *Gernas* program discussed below). In response, the head of ASKINDO - who was also a Director of a transnational trading subsidiary — argued: 'It [does] not make sense, the government is seeking funds from the farmer through depressing prices since a drop-in farm gate price may encourage the farmer to shift to other commodities ⁶⁹. The imposition of an export barrier, as well as shifting the government incentives from the intermediate trading actors to downstream processing, eventually challenged the dominant trading segments. The tariff barrier eroded the intermediate actors' margin, particularly that of the transnational traders.

Pursuant to the above argument, Neilson et al.'s (2014) empirical study of the export tax does not show that the policy had a negative effect on the farm gate price. The export tax has not linearly led to a decline in the farmers' returns. This neutral effect of the restrictive export tax was combined with other industrial incentives, e.g., zero import tax on manufacturer machinery, tax holidays⁷⁰ for pioneer industries, and tax allowances⁷¹ for high labour intensive and (or) highly acquired local resources industries. Supplying Indonesia-based processors promised to ensure higher margins for traders who escapes payment of the export tax. A combination of these industrial incentives has encouraged downstream investment and temporarily strengthened the domestic processors' competitiveness. As the domestic market became more viable, it also increased farm price transparency, and the upstream market remained competitive. The export tax increased costs for exporting traders, but incentivised the downstream industry, shifting buying power to the cocoa processors. For the competitive collectors, they escaped this policy by establishing alternative markets with established processors, and could offer the same farm gate price as the previously dominant international traders (see Appendix F).

While the competitive position of domestic (nationally-owned) grinding was challenged by the increasing presence and scale of new investment by transnational firms, it significantly increased the domestic processing capacity within less than a decade (see Figure 6.2). The pressure of the tariff barrier caused transnational firms such as Cargill and Olam to expand their business strategies towards a combination of economic scale and scope for value capturing. As well, it put pressure on smaller scale processors and limited the scope of value adding by local processors. Thus, to remain

⁶⁹ Fajar online news, Pengusaha beda sikap soal Permenkeu 67 tahun 2010, published on 07 April 2010, [Retrieved, December 2016] http://news.fajar.co.id/read/88227/45/index.php

⁷⁰ Tax holidays: government incentives for significant investment (minimum five million \$US), sufficient to drive national economic growth for at least five years, to extend maximum after commercially operating for ten years. The firm may claim 50% discount on income tax.

⁷¹ Tax allowance: tax discounts for 30% of total investment and compensation for less than ten years.

competitive among the vertically-integrated and large capacity of transnational firms, the domestic processors have no choice, but to obtain different forms of upgrading (re. product, process, functional, and inter-sectoral) or downgrading (function) according to the firm capacity.

Despite the increased investment in the cocoa processing, existing processors struggled to operate at maximum capacity. Investment in this segment was well beyond the supply capacity, resulting in strong competition to access beans at the farm level. With annual national cocoa production estimated by the government to be 700,000 metric tonnes⁷² of cocoa bean, the full capacity of the cocoa industry instalments is already more than 800,000 metric tonnes (see Figure 6.2). This imbalance in supply and demand has impacted mostly on the small-scale domestic cocoa processors who restrict their operations. They can only afford to operate during the harvest season and often close-down temporarily when the global market maintains a high price.

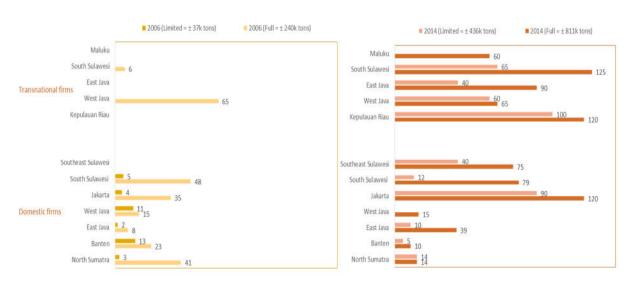


Figure 6.2 Shifting patterns of cocoa grinding capacity by geography and ownership (2006-14)

Source: Ministry of Industry and online news

Figure 6.2 shows that in 2006, the cocoa processing structure was primarily located outside of Sulawesi, especially on Java with its better infrastructure – although the scale was relatively small (less than 20,000 metric tonnes per firm annually). Subsequent to the Indonesian industrial policy intervention and the slow improvement of infrastructure outside of Java after 2010, new investments in the cocoa industry shifted to strategic locations, and this was dominated by foreign firms. Two new processors were established in South Sulawesi (Barry Callebaut and the Transmar group) and three companies invested in the business-friendly region of Surabaya (JB Cocoa and Cargill) and Batam (Asia Cocoa Indonesia). The trading firm Olam employed a vertically integrated strategy by establishing a cocoa processing facility after first establishing a cocoa plantation in the low labour cost and abundant frontier land of Seram Island, Maluku province. The geographic distribution of foreign investment was

⁷² It is widely felt that government statistics of cocoa production are an over-estimate and remains debateable among cocoa stakeholders. Many industrial actors argue that actual country production was approximately 400,000 metric tonnes, a level consistent with International Cocoa Organisation (ICCO) estimates.

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based on each firm's concern regarding a combination of specific regional assets, including reliable access to a supply-base, a business-friendly environment (free from multiple taxes), adequate infrastructure, and abundant land and low labour costs.

The application of an export tax strongly contributed to the industrialisation of the cocoa sector. Both domestic and transnational processing firms are contributing to the upgrading of Indonesia's position as a significant supply country for processed cocoa products (at least) in the Asian region. However, the transnational firms continue to dominate the current growth of downstream production, leaving the small-scale domestic firms continuously struggling to maintain their competitiveness and with limited capability to capture long-term gains. While the government incentive policy has failed to improve the competitiveness of most domestic processors, on the other hand it has attracted FDI through new investment and capacity expansion. The competitive transnational processors, who are now the strategic actors, are currently reshaping the oligopolistic structure of Indonesia's domestic cocoa processing networks.

The two stages of Indonesian cocoa development show limited role of the state to exercise the roles as a development agent, but more emphasised administrative role on creating enabling environment for the local actors to remain competitive and better integration into the global cocoa production networks. Although the policy supports were not necessarily benefited the local actors, but both hands-off and downstream policy partially has contributed to development of Indonesian cocoa sector where the (local and transnational) economic actors were actively (re) shaping the upstream cocoa production networks.

6.3 State engagement with sustainability initiatives

After decades of limited intervention, the growing cocoa processing industry increased domestic demand, and was a driving factor for the government to continue implementing its *Gernas kakao* program, which had been initiated in 2008. However, cocoa processing activities were soon dominated by a few transnational firms. This combined with government concerns that supply chain sustainability programs were limiting supply accessibility for domestic processors. The growing dominance of transnational firms in Indonesia, via both sustainability programs and integrated supply chains, raised concerns that the government's power to retain control over upstream sites of production was weakening. This was interpreted by some in the government to be a threat to sovereignty. In addition to the market demand for sustainable cocoa, the government attempted to establish an Indonesian version of a sustainable Cocoa Certification scheme (ISCocoa). However, it was more concerned with improving quality standards for cocoa beans and intervening in upstream market structures.

6.3.1 Ensuring supply to promote industrial investment: the Gernas Kakao program

Fold and Neilson (2016) claim that initially the government's interest in upstream development was primarily politically driven. The national movement in the form of the *Gernas kakao* program was initiated during the final year of the Vice President's tenure. Born in South Sulawesi, Jusuf Kalla was a candidate for the next presidential election; that is, for the period 2009-14. The program was used to solicit the votes of Sulawesi farmers, whose livelihoods depended on cocoa farming. The inauguration of the program reified an agreement with all the Sulawesi government leaders and cocoa stakeholders for shared funding, with the largest share of funding allocated to the South,

West, Southeast, and Central Sulawesi provinces (Manggabarani, 2011). *Gernas Kakao* was essentially a large-scale farmer support program that disseminated planting material, fertilisers, equipment and payments to farmers to rehabilitate their farms and boost production.

Sharing similar goals to improve the nation's cocoa production and quality, the *Gernas kakao* program designing process attracted the attention of the cocoa stakeholders who were also members of the CSP forum (dominated by the interests of global lead firms). They had expressed their concern over sustaining Indonesian cocoa development, as stated in *warta penelitian dan pengembangan pertanian* (2010)⁷³.

Gernas is a breakthrough with strong potential to improve the well-being of cocoa farmers, especially those from Eastern Indonesia. Because of that, CSP shared ample interest to support a successful Gernas kakao program, in the form of sharing opinions through a workshop in Bali, on 31 October to 1 November 2008, and through subsequent consultations. (Gernas adalah terobosan and berpontesi besar meningkatkan kesejateraan patani kakao, khususnya di kawasan timur Indonesia. Berdasarkan tersebut, CSP sangat berkepentingan untuk menyukseskan pelaksanaan Program Gernas Kakao, antara lain dengan memberikan sumbangan pikiran melalui lokakarya di Bali pada tanggal 31 Oktober - 1 November 2008, dan dilanjutkan dengan beberapa pertemuan berikutnya).

Their statement implied that the CSP members were trying to approach the government to participate in the design of the *Gernas* program. However, the government officials who designed the program excluded the CSP as a program partner, emphasizing instead the significant roles of the local governments (at the provincial and district levels) and ICCRI in delivering technical assistance.

Despite their shared interest in improving cocoa farm productivity, the government saw the CSP as dominated by transnational firms, with limited participation by domestic firms (Respondent MI1, pers. Comm., 2015; Respondent MI2, pers. Comm., 2015). In addition to the previous and existing sustainability programs (SUCCESS Alliance, AMARTA, and IFC-SADI) that had accepted transnational firms (MSI, subsidiaries of Olam and Armajaro) as partners, the participation of the CSP members in the *Gernas* program threatened to strengthen the transnationals' position in the upstream cocoa production, putting increased competitive pressure on the domestic firms. The government's response to the attempt by the CSP members (e.g., Mars processing subsidiary and Cargill trading subsidiary) to participate in the national cocoa program was that it saw them as a potential competitive threat to domestic actors who were also participating in both cocoa trading and processing networks.

Regarding the *Gernas kakao* program, although the government showed little interest in entering a PPP (public private partnership) with CSP members, the Ministry of Agriculture (specifically the Directorate General of Estate Crops) agreed to adopt a mass propagation technology, i.e., Somatic-Embryogenesis (SE) that was developed through a partnership between Nestlé and ICCRI. This support for the program came in the form of strengthening the quasi-government Research

⁷³ Lebih fokus dengan Gernas kakao, [Retrieved on April, 2017] http://pustaka.litbang.pertanian.go.id/publikasi/wr322105.pdf

Institute's (ICCRI) capacity as the only sub-contractor supplying Somatic-Embryogenesis (SE) seedlings. Nestlé signed an agreement with ICCRI after transferring SE technology that had assisted the Institute to produce large-scale cocoa seedlings that were further disseminated via the national program as part of a business strategy to 'create shared value'. As the (Legal & Corporate Affairs) Director of PT Nestlé Indonesia⁷⁴, stated:

We are pleased that with the SE technology granted from Nestlé, based on the partnership between Nestlé and ICCRI since 1994, ICCRI has supported the government in developing original Indonesian coffee and cocoa plantlets with better yield and resistant to disease in a shorter time.

The strategic partnership established between Nestlé and ICCRI had highlighted a symbiotic relationship. ICCRI's role as a government program partner served as an intermediate position that allowed Nestlé to indirectly influence the government program. Individual lobbying comes with high cost and risk, from negative publicity to an uncertain political outcome. Within this collaboration, Nestlé strategically externalised the upstream development costs to a well-established research centre strongly affiliated with the government.

Due to a combination of weak institutional capacity at different administration levels, lack of public publication of the program evaluation assessment and the politicisation of the program, the outcome of the program fell short of expectations and was criticised by several scholars. Commenting on its failure, Gusli et al. (2011) claim that the centralised dissemination of agri-inputs (SE planting materials and fertilizer) was not supported by local government capability to organise a logistic system. Interestingly, Mars had been active in promoting small-scale seedling businesses operated by the farmers across Sulawesi, and the Gernas program threatened the viability of these businesses. Bureaucratic ineffectiveness of centralised distribution reflected a lack of practical expertise to overcome logistic challenges. For example, attempts to maintain the quality of millions of SE seedlings disseminated across vast geographic upland regions were not supported by adequate infrastructure, as the supply was monopolised by ICCRI and its contractors (Siregar, 2011).

Despite the criticism surrounding the implementation of *Gernas kakao*, the program continued for some years since the increased investment in cocoa processing required supply assurance, particularly from the smallholder farmers. The continuation of the *Gernas* program was strongly supported by the largest nationally-owned cocoa processing firm, BT Cocoa, who was also the long-term serving director of AIKI (Indonesian Cocoa Industry Association). For example, during the CSP workshop on 'Optimisation of Partnership Towards Sustainable Indonesian Cocoa 2020', hosted by the Ministry of Agriculture on 15 April 2015, the President Director of BT Cocoa specifically targeted the government's policies:

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⁷⁴ Nestlé R&D Tours signed a Cooperation Agreement with the Indonesian Coffee & Cocoa Research Institute, published on 3 November 2009, [Retrieved on April, 2017] http://www.nestle.com/media/newsandfeatures/nestle-tours-cooperation-with-indonesian-coffee-cocoa-research-institute

To support cocoa sustainability, we (from AIKI) suggest 3 proposals: 1) Implementation and continuation of Gernas kakao for several more years is fundamentally necessary since investment in cocoa industry now exceeds the Indonesian (annual) production capacity; 2) We hope for the elimination of a VAT on primary commodities, since this (financial) burden on all cocoa stakeholders makes the idea of sustainable cocoa impossible; 3) AIKI hopes that the cocoa export tax is maintained at a flat 15% [instead of the progressive tax between 5-15% depending on global prices. (*Untuk mendukung keberlanjutan kakao, kami dari AIKI menyarankan 3 usulan: 1) Gernas kakao mutlak dilakukan dan dilanjutkan untuk beberapa tahun kedepan karena investasi industri kakao sudah melebihi kapasitas produksi Indonesia; 2) Bagaimana mungkin kakao bisa berkelanjutan kalau kebijakan PPN untuk komoditas primer menjadi beban semua pelaku kakao, kami harap PPN komoditas primer dihapus; 3) AIKI berharap agar bea-keluar kakao ditetapkan flat 15%).*

From the above statement, it seems obvious that the industrial association was expecting the government to continue to scale-up the *Gernas kakao* program, despite the failures of inept government and wasteful use of public funds (see Appendix I). Similar requests were also expressed by the Indonesian Industry Minister, who, during the inauguration ceremony for Cargill's new cocoa processing factory in East Java, urged the Ministry of Agriculture to continue the failed *Gernas kakao* program. He was reported as saying (Media Industri, 2014: 37):

The growing downstream cocoa industry in Indonesia needs to be supported by ensuring ample supply of raw material. As such, Ministry of Industry expects support from the relevant agencies [Ministry of Agriculture] to support development of the downstream cocoa industry through, for example, the continuation of the Gernas program as an effort to ensure the raw material supply for domestic cocoa processors. (*Tumbuhnya industri hilir pengolahan kakao di Indonesia, perlu didukung oleh ketersedian bahan baku yang mencukupi. Oleh karena itu Menperin mengharapkan dukungan dari instansi terkait dalam pengembangan hilirisasi kakao, seperti Program Gerakan Nasional (Gernas) kakao dapat dilanjutkan kembali sebagai upaya menjamin keteresedian bahan baku industri pengolahan kakao dalam negeri).*

Responding to these concerns, the Directorate General of Estate Crops (Ministry of Agriculture) also reinforced the continuation of the *Gernas kakao* program with new ambitious production targets. He stated (Media Industri, 2014: 35):

With implementation of Gernas kakao, national cocoa production will be stimulated to become, at the very least, the second largest in the world with a target of 1.1 million tonnes. (Dengan dilaksanankan Gernas kakao ini setidaknya produksi kakao nasional didorong menjadi nomor dua di dunia dengan target 1.1 juta ton).

As a result, a few months after the inauguration, newly-elected president Joko Widodo approved the continuation of the *Gernas* program for 2015 after visiting one farmer group in Mamuju, West Sulawesi that had been assisted by BT Cocoa in November 2014. The program had been earlier discontinued and excluded from the 2015 national budget plan (Respondent MI6, pers. comm., 2015). However, following pressure exerted by industry actors and affiliated ministries, the new

government included the *Gernas kakao* program in its amended national budget plan⁷⁵, notably renaming it the Cocoa Sustainability Development Program (*Program Pengembangan Keberlanjutan Kakao*, PPKB).

Despite the government's expressed interest in promoting the industrialisation of the cocoa sector, its capacity to provide extension services was limited. Re-implementation of the failed program signalled political interest. Fold and Neilson (2015) allude to 'the largely unsuccessful attempt to rejuvenate cocoa production through the highly-political GERNAS program'. The political orientation of the program may explain its deliberate exclusion of CSP members and disinterest in partnership with foreign lead firms. The whole program, which demonstrated the bureaucratic ineptness of local governments and a quasi-government research institute (ICCRI) also lacked independent evaluation. Despite its apparent failure, the domestic industrial association strongly supported the continuation of the Gernas program because the program explicitly accommodated the industrial actors' concerns regarding the imbalance between the national cocoa production and the growing cocoa processing industry⁷⁶. Concomitant with the rhetoric of improving cocoa farm production and the farmers' livelihoods, the Gernas program was re-implemented with the support of the industrial actors, marking a counterproductive outcome at the expense of public money and the smallholder cocoa farmers. It should, however, also be understood as an attempt to exert upstream control over production by a coalition of Indonesian government actors and local industrialists in response to the growing influence of foreign lead firms on the GPN for Indonesian cocoa.

6.3.2 Government attempts to promote sustainability: ISCocoa

The emerging interest of the transnational firms to engage in sustainability discourse was followed by increasing adoption of voluntary sustainable certification, leading to increasing vertical coordination with the smallholder farmers. This attracted the interest of the government, particularly of the Ministry of Agriculture and, in response, the Directorate General of Processing and Marketing of Agriculture⁷⁷ attempted to introduce the Indonesian Sustainable Cocoa (IScocoa) certification scheme in 2013. The government initiative to introduce a sustainability certification scheme followed similar attempts for Indonesian Sustainable Coffee (IScoffee) and Indonesian Sustainable Palm Oil (ISPO). This was affirmed by the Minister for Agriculture during the opening

⁷⁵ Also referring APBN-P, Anggaran Pendapatan Belanja Negara-Perubahan.

⁷⁶ Cocoa industry collapse because of crisis (re. cocoa), published on 14 July 2016 http://industri.kontan.co.id/news/industri-kakao-kolaps-akibat-krisis; National production predicted to decline 10%, published on 16 August 2016 http://agro.kemenperin.go.id/3973-Produksi-Kakao-Dalam-Negeri-Diprediksi-Susut-10%25; Update: Indonesia cocoa industry expects to process less beans this year, published on 22 November 2016 http://www.cnbc.com/2016/11/22/reuters-america-update-1-indonesia-cocoa-industry-expects-to-process-less-beans-this-year.html

⁷⁷ Direktorat Jendral Pengolahan dan Pemasaran Hasiil Pertanian (Ditjen PPHP).

ceremony at the 87th Meeting of International Cocoa Council on 18 March 2013, supported by the International Cocoa Organisation (ICCO)⁷⁸:

...The Minister for Agriculture, Suswono, has announced that Indonesia will also implement a cocoa certification scheme to convince consumers about the sustainability of Indonesian cocoa. Indonesia is moving towards cocoa sustainability. Currently, we are not yet implementing it, but we are moving in that direction. This will be in the interest of consumers. (...Menteri Pertanian, Suswono menyatakan, Indonesia juga akan menerapkan sertifikasi kakao yang dapat meyakinkan konsumen atas keberlanjutan (sustainability) kakao nasional. Indonesia akan menuju ke sustainable kakao. Saat ini memang belum diterapkan tapi arahnya ke sana, ini untuk kepentingan konsumen).

Although sustainability has attracted the respective governments' interest, the concept of sustainability introduced via the IScocoa agenda reflected the main issues faced by the domestic industrial actors (such as low quality unfermented cocoa, ineffective supply chain and weak government control). It did not really address other critical gaps, such as the limited enforcement of sustainable cocoa farming practices, reflected in the ongoing application of agro-chemicals, the intensification of farming practices and social issues (declining profits for smallholders) that threatened smallholders' livelihoods. ISCocoa was proposed by the sub-Directorate of quality and standardisation during a Workshop on Indonesian Cocoa, held on 18 September 2013 to address upstream cocoa production and distribution concerns⁷⁹.

The workshop that promoted ISCocoa identified the underlying rationale for the proposed initiative as addressing identified cocoa problems, which in the main appertained to upstream cocoa production, and reflected the emerging challenges faced by the industrial actors. These challenges included those linked to large scale unfermented bean production, declining cocoa farm productivity, and the limited capability of farmer-based organisations. Despite their concern regarding the low quality and tardy development of farmer organisations, the Indonesian cocoa farmers enjoyed a competitive farm gate price (at least compared to producers in West Africa) which was largely due to a liberal market system. The liberal market system had contributed to a complex upstream supply chain structure, but it also stimulated a competitive environment and a competitive farm gate price. In addition, a current alternative market (wet-dry bulk bean and certified cocoa bean) has been introduced by the transnational firms along with relatively improved and transparent farm level market practices.

The smallholder farmers had been reluctant to adopt fermentation due to inadequate financial incentives. They argued that because cocoa farm yield was declining, it would prove less economical to adopt a fermentation process that required additional labour and time, a certain minimum

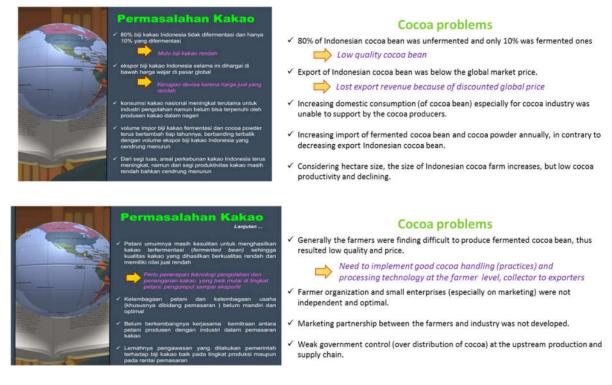
⁷⁹ Workshop of Indonesian Cocoa on 18 September 2013, presented by Director of quality and standardisation about Cocoa sustainability certification, [Retrieved on April, 2017] http://dekaindo.org/files/pdf/DITJEN%20PPHP-Sertifikasi%20Berkelanjutan.pdf

⁷⁸ Industrial actors welcoming cocoa certification scheme, published on 18 March 2013, http://www.republika.co.id/berita/ekonomi/makro/13/03/18/mjumw6-industri-sambut-positif-sertifikasi-kakao

volume to affect a fermentation process, and risked failure due to the unfavourable environment (Respondent LT8. pers. Comm., 2014; Respondent FG2, 2014). In addition to needing quick cash, the farmers were inclined to accept the discount consequences and maintain the production of unfermented cocoa bean. High global market demand compromised quality concerns.

The above identified issues reflected the struggles of (domestic) industrial actors who were facing increased competitive pressure on sourcing quality cocoa beans and were unable to adapt to the low quality of unfermented beans. While this was essentially expressed as a supply chain management concern, it was inaccurate to claim that there was lack of a market partnership between the farmer-industrial actors. Since 2010, a few transnational firms (MSI, Olam and ECOM-TMCI) have engaged with the farmer groups (or few cooperatives) or established market relationships based upon informal market contracts. Moreover, these informal contracts did not create a captive relationship as the certified farmers and (or) groups were not restricted to supplying other markets or buyers who offered better prices or services. However, to date, this marketing relationship between the domestic industrial actors and the farmers had not been established due to the disintegration of the trading segment and the domestic actors' dependence on sourcing cocoa bean from independent suppliers (collectors and traders). The last issue identified in Figure 6.3 - weak government control over cocoa bean production and distribution – was informative. Even though, the liberal market had contributed to competitive upstream markets, and had encouraged smallholders to plant cocoa, there was a perception that the government needed to intervene directly in supply chain marketing.

Figure 6.3 Government Rationale for IScocoa¹³



Following this rationale, the government offered solutions in the form of Ministry of Agricultural policies to address upstream cocoa production challenges. Its primary focus was on post-harvest cocoa farming management and reorganising the liberal upstream supply chain structure (See Figure

6.4). The government further proposed an even more interventionist scheme to accommodate the implementation of these policies. It would reinforce the national quality standard (SNI 2323:2008/Amd.1.2010) for cocoa beans by institutionalising the scheme into the local government structure to ensure the monitoring and distribution of upstream cocoa production networks (see Figure 6.5). The scheme emphasized the role of the Estate crop department in assisting farmer group-based fermentation unit. The local food safety authority⁸⁰ would be responsible for quality assessment and the verification of traceability. This scheme emphasised the dominant role of the government and its authority to intervene in upstream production networks.

The last of the three Ministry of Agriculture policies suggested in Figure 6.4 led to a draft regulation of cocoa bean quality and marketing, became known as the Indonesian Sustainable Cocoa scheme (see Figure 6.6). The IScocoa agenda later became a reference for Ministry of Agriculture regulation no. 67/Permentan/OT.140/5/2014 that addressed the output quality standard for mandatory fermentation practises (referring to national standard (SNI 2323:2008/Amd.1.2010) and the farm level market system (see Figure 6.5). Through this combination of the IScocoa certification scheme and a regulatory instrument to effect product-process upgrading, the government attempted to reclaim control over both upstream production and marketing. In other words, the government proposed integrated state control and verification of agencies at the district, provincial and national levels, while the farmer organisations/cooperatives served as certificate holders⁸¹.

Figure 6.4 Ministry of Agriculture rationale for a national cocoa program



Ministry of Agriculture policy regarding the national cocoa

- Cocoa national program (Gernas)
- Ministry of Agriculture regulation no. 51/Permentan/OT.140/9/2012 as a guideline for good post-harvest practices
- Ministry of Agriculture regulation draft on cocoa bean quality and marketing standards
 - ✓ Increasing national cocoa productivity
 - Mandatory fermentation of cocoa bean production
 - ✓ Good post-harvest handling (practices) on cocoa
 - ✓ Monitoring the distribution of quality cocoa bean

⁸⁰ Food safety authority established at the provincial level, currently only 26 of 33 provinces have established the agency.

⁸¹ Ministry of Agriculture regulation, Peraturan Kementrian Pertanian, No. 67/Permentan/OT.140/5/2014. [Retrieved on April, 2017]

http://perundangan.pertanian.go.id/admin/p_mentan/Permentan%20No.67%20Tahun%202014%20Persyaratan%20Mutu%20&%20Pemasaran%20Biji%20Kakao.pdf

Figure 6.5 Proposed scheme for a regulated cocoa marketing system¹³



Scheme to be implemented:

- Cocoa bean distributed meet the national quality standard SNI
- Mandatory cocoa bean fermentation practices
- Cocoa bean fermentation practices and marketing are conducting through Cocoa bean fermentation and marketing unit (CBFMU).
- Registration of CBFMU at the District/Regency estate crop department, who responsible for releasing the Registration letter
- CBFMU assisted by District/Regency estate crop department.
- local Food Safety Authority (FSA-L) monitors the implementation of cocoa bean quality under the certification of quality assurance system and product assessment
- CBFMU releases cocoa bean traceability letter (CB-TL) in every

The proposed IScocoa scheme tabled the multiple roles of the government and affiliated agencies, from designing the standards, providing technical assistance, registering farmer groups, and assessing cocoa bean quality to the releasing of certificates verifying the origins of the cocoa bean. This bureaucratic structure signalled the increasing control of government agencies in the upstream cocoa production networks. In contrast, the certification schemes (RA and UTZ) adopted by the transnational firms involved these roles being distributed among three actors: 1) Certificate holders (often firms) responsible for providing technical assistance and bean quality measurement; 2) Certification body (eg. UTZ) responsible for designing the standard, and for registering and releasing the certificate; and, 3) Independent auditor responsible for verifying compliance with the standards (eg. Control Union). This government contested certification scheme suggested a dominant role of multiple agencies to reorganise the upstream cocoa production and distribution. A combination of the less independent IScocoa and weak governance system would systemically increase the cost and bureaucratic control, opening-up multiple rent-seeking opportunities.

Figure 6.6. Proposed draft Ministry of Agriculture regulation (Permentan) for Iscocoa¹³



The dominant role of government in the competing sustainable cocoa scheme drew little interest from the industrial actors, particularly those transnational firms that had established their owned sustainability initiatives and adopted third-party certification schemes (RA and UTZcertified) better suited to the global market demand. Cognisant of the transnational firms' lack of interest in IScocoa, the Ministry of Agriculture attempted to reinforce Ministry regulation no.

67/Permentan/OT.140/5/2014 following an introductory workshop in May 2015. A decision was taken to reinforce the regulation by 2016⁸². However, the process of exerting integrated state-control over upstream production remained unclear after Presidential regulation (PP no. 45/2015) restructured the Ministry of Agriculture and abolished Ditjen P2HP in April 2015⁸³. The current mandatory fermentation (Permentan no. 67/Permentan/OT.140/5/2014) policy was postponed for the second time until 2018. The postponing of the regulation suggested a lack of Ministry of Agriculture capacity to reverse the intensified liberal market.

IScocoa's agenda, which was reinforced by Ministry of Agriculture regulation no. 67/Permentan/OT.140/5/2014, suggests a local adaptation of the established North based voluntary certification schemes, which reflected to challenges faced by domestic actors rather than a response to sustainability concerns. Also, the proposed IScocoa scheme failed to reflect the smallholder farmers' interest on how to minimise their vulnerability to volatile global markets and address falling farm profitability. The government scheme did not attempt to bridge the regulatory gap in sustainable farming practices or to consolidate voluntary private certification schemes. It didn't address growing rural-urban inequality, ongoing social structure change in the rural landscape or overtly attempt to minimise environmental destruction. The stated government program beneficiary, state-assisted farmer groups, struggled to implement fermentation upgrading due to uncertain market incentives. Yet, the industrial association urged the government to implement mandatory fermentation. Stated and a national cocoa bean standard. As the head of APIKCI (the cocoa and chocolate industries association) stated.

Sony [the Head of the Association] assesses the urgency of implementing a national cocoa bean standard (SNI 2323:2008/Amd.1:2010) in order to obtain more competitive cocoa bean quality and price compared to other cocoa producing countries, whose cocoa has started to invade the domestic market. (Sony menilai urgensi sertifikasi SNI kakao memang harus didahulukan agar biji kakao Indonesia memiliki kualitas dan harga yang bersaing dengan biji kakao dari negara-negara lain yang mulai menginvasi pasar tanah air).

⁸² Introducing Ministry of Agriculture regulation (Permentan no. 67/Permentan/OT.140/5/2014) on mandatory adopted fermentation at the farm level, published on 16 July, 2015, [Retrieved on April, 2017] http://dekaindo.org/ind/lokakarya-menyongsong-pemberlakuan-peratuan-menteri-pertanian-2015

⁸³ The abolition of Ditjen P2HP, published on 8 May 2015, http://nasional.kontan.co.id/news/ditjen-p2hp-kementerian-pertanian-resmi-bubar

⁸⁴ The cocoa industry urged the government to implement mandatory fermentation regulation for the upstream market across Indonesia, published on 14 December 2015. http://industri.kontan.co.id/news/pengusaha-minta-kewajiban-fermentasi-kakao

⁸⁵ Industrial association statements regarding the government's attempts to re-claim the upstream cocoa production, published on 2 September 2014. http://industri.bisnis.com/read/20140902/99/254446/sertifikasi-kakao-informasi-pemerintah-masih-belum-jelas

According to Sony, foreign firm domination has reached 75% of total capacity of national cocoa processing. Besides the financing challenges, the local firms also face marketing challenges. This is because of the brand [reputation] of [the transnational] cocoa processing industries. Furthermore, the domestic downstream actors are concerned over the supply constrains from collectors. (Bahkan menurut Sony, penguasaan asing mencapai 75% dari seluruh kapasitas produksi olahan kakao nasional. Selain keterbatasan dana, para perusahaan lokal juga lebih sulit mencari pasar. Hal ini disebabkan merek dari perusahaan industri pengolahan biji kakao. Selain itu, pengusaha di sektor hilir produk kakao juga mulai resah akibat terhambatnya pasokan bahan baku dari pengepul).

This statement explicitly shows the domestic firms' interest to reinforce the national standard and gain export value, despite significant declining cocoa bean exports and increasing domestic demand from the growing industry. Plainly, the domestic industrial association also criticised the increasing concentration of transnational firms in the upstream cocoa production, following the limited supply from local trading actors. Increasing transnational firms' upstream intervention appears to drive competitive pressure for the domestic processors, and the enforcement of national standards (including Permentan on 67) was expected to constrain these interventions. Despite the government's failure to restore upstream productivity and profitability (the Gernas kakao program), the industrial actors pressured the government to implement a national standard for cocoa bean. This represented a disincentive for the cocoa farmers who were obliged to adopt a farm level fermentation process. The increased import of fermented cocoa bean threatened to compromise the domestic sourcing of unfermented bulk cocoa bean. This criticism reflects the reality that lead transnational firms entered into competitive sourcing contracts with strategic and specialised suppliers (also foreign firms), which excluded the less competitive and small-scale domestic firms. The trajectory of state industrial policy and outside-in coupling strategy has proven inadequate to enrol the domestic firms into global production networks.

Reflecting back on the previous discussion by the National Reference Group (see discussion 5.2.3 Extra-firm bargaining strategy) reveals minimum participation on the part of the Ministry of Agriculture in engaging with international certification bodies (Rainforest Alliance, Fair Trade, and UTZcertified) vis-à-vis harmonising the national-international standard. This was despite the publication of the National Indicators for sustainable cocoa (authored by CSP and Mars) that attempted to integrate these schemes with a range of government regulations and policies. Transnational firms and certification bodies also commented on a perceived lack of government interest (Respondent CC1, pers. comm, 2014; Respondent SS7, 2014). From the government's perspective, the implementation of a certification scheme was dominated by the North-based actors, who were responsible for designing the standard, its implementation and verification (Respondent MI6, pers. comm, 2015). Despite acknowledging the transnational actors' existing support for the smallholder farmers (Respondent MI6, pers. comm, 2015), the government perceived a violation of sovereignty, as production conditions were being dictated by North-based actors. This concern was exacerbated by influential lobbying by the struggling domestic processors. In addition to recognising the market governance challenges and attempting to protect the domestic actors, Deputy Assistant of Estate Crops and Agriculture of the Coordination Ministry of Economy who has actively built engagement with the (cocoa) multi-stakeholder partnerships delivered a

diplomatic response and exercised a peculiar sense of authority (Respondent MI1, pers. comm, 2015):

We are delighted if the private sector wishes to assist our farmers and establish sustainable ecosystems. But, we cannot be dictated to and forced to design certain policies since we are constrained to strict regulation in making decisions. This is unlike the flexible nature of the private sector, so it is better if the private sector adapted to our regulation. (Kita senang kalau pihak swasta berniat membantu petani kita dan membangun ekosistem yang berkelanjutan, kami akan dukung. Tapi kami tidak bisa didikte untuk mengambil kebijakan tertentu, dalam pengambilan keputusan kami dibatasi oleh aturan yang ketat. Tidak seperti pihak swasta yang lebih flexible, lebih baik pihak swastalah yang beradaptasi dengan aturan kita).

Although the updated cocoa sustainability policy remains uncertain, the government's engagement in sustainability discourse reflected Fold's (1998) argument pertaining to the power struggles within the state as the regulatory options become more limited as a result of intensified globalisation. The government's attempt to reverse the upstream liberal market by re-organising the upstream cocoa production networks suggests the intricate political-economy relationships between the state and local capitalist actors. Yet, this process was followed by the lack of capacity not only to deliver a public service and to institutionalise the quality standard, but also an inability to intervene in the market driven nature of the contemporary GPN. The government's motivation regarding ISCocoa was explicitly shown to represent the interests of the domestic industrial actors in an increasingly competitive supply environment. Based on this discussion, the government's interest in introducing a national version of a sustainability certification scheme was to favour the domestic industrial actors, most likely at the expense of struggled smallholder farmers. In effect, the Ministry of Agriculture and the respective government agencies were trying to create bureaucratic barriers and to increase their control over the upstream cocoa production-distribution in response to the increasing domination of the transnational trading-processing firms.

6.3.3 State perception of the sustainability initiatives

The Indonesian government's participation in sustainability discourse aimed to sustain the country's cocoa sector development, but the government primarily sought to protect the domestic industrial actors from the growing power of transnational lead firms. The aim of the *Gernas kakao* program was to improve cocoa farm productivity and quality, but also within the context of securing the national supply capacity for industry. The introduction of the IScocoa scheme was motivated by concerns related to the challenges faced by the domestic cocoa industry, rather than minimising the environmental and social risks that threatened the farmers' livelihoods. Within this context, the government attempted to reclaim the governance of sustainable certification schemes currently implemented by north-based certification bodies rather than regulating content of the standards.

Domestic firms faced competitive exclusion from participating in the lead firm production networks. The government's *Gernas kakao* program failed to sustain the smallholders' competitiveness, to further strengthen the country's supply-based capacity. Fold and Neilson's (2015) comments on the political motivation to sustain the Indonesian cocoa sector were reminiscent of how the timber commodity chain reconstruction was negotiated through political struggles and renegotiation between the nation-state and involved firms (Gellert, 2003). This path dependency of political

struggles is identified in the continuation of the failed program under the rhetoric of improving the smallholder farmers' livelihoods. These realities of Indonesian political economy merged with the government's participation in the construction, or adaptation, of the sustainability discourse, which did not necessarily emphasise the environmental and social issues promoted by the international certification schemes. Even though the government introduced trade barriers and industrial policy incentives to lure foreign direct investment as a coupling strategy with the GPN, the ISCocoa scheme essentially created bureaucracy barriers to reorganise upstream cocoa markets. The government positioned itself as the protector for local actors, while considering transnational firms as rivals rather than partners for upstream cocoa development. They did this through their own innovative use of sustainability discourse.

Following similar concerns shared by the domestic industrial associations and the government, in a somewhat 'rambling' fashion (Respondents MI1; MI2; MI4, pers. comm., 2015) the government officials expressed their concern over the transnational firms' increased domination of the domestic cocoa-processing segment. As Respondent MI2, 2015 said:

The fate of local cocoa industry is under pressure because of the presence of large [transnational] industries. In such conditions, who is going to protect local industries? If the large industries are failing, they can [always] sell the factory and move to the other countries, but what happens when the local industries go bankrupt? (Nasib industri kakao lokal sangat tertekan dengan keberadaan industri besar, melihat kondisi ini siapa yang akan membela industri lokal. Kalau industri besar bangkrut, mereka bisa saja jual pabrik dan pindah ke negara lain, trus bagaimana kalau industri lokal yang bangkrut).

Likewise, the defensive suggestions by government officials to act in the national interest reflected the plight of many small-scale domestic processors who were struggling due to limited operation and limited capitalist capability, which taken together spelled idle operation. A similar attitude was expressed by a local government official (Respondent MI7, pers. comm, 2015):

Foreign firms already control the upcountry cocoa market and have direct relationships with the farmers. In such a situation, how can local traders compete? (*Untuk sektor kakao*, perusahaan asing sudah menguasai pasar di daerah dan berhubungan langsung dengan petani. Kalau sudah begini bagaimana pedagang lokal bisa bersaing).

The above comments serve to demonstrate the struggle endured by local actors in two functional segments, i.e., cocoa processing and trading, to remain competitive within the GPN. With reference to losing autonomy in the public sphere, the District government officials not only blamed the effect of a speculative liberal market system, but also the competitive pressures exerted by the transnational firms in terms of capacity and flexibility in delivering a range of extension services (Respondent MI6, pers. comm., 2015; MI8, pers. comm., 2014; MI7, pers. comm., 2015). The government's concern regarding the transnational firms' capitalist capability and flexibility to 'spatial switching' was previously identified by Massey (1984 cited in Coe et al., 2004: 472) as the result of trans-local actors' interactions in the GPN.

Reflecting upon the two discussions of government interventions and attempts to participate in sustainability discourse shows a conflict of political and economic interests. The Ministry of

Agriculture and District governments were trying to protect the domestic industrial-trading actors from increasing upstream competition. This set of industrial policy incentives aimed to improve the domestic actors' competitiveness and national competitiveness proved costly, at the expense of public funds and using rhetoric to improve smallholder farmers' livelihoods. This short-term gain did not address the long-term gains possible by improving the domestic actors' technological and organisational capacity. But the political struggles over the lack of government capacity to deliver public services (Fold and Neilson, 2015) and the devolution of political-economic authority to (decentralised) local governments and institutional agencies ultimately benefited the interests of the politicians and economic actors at the expense of vulnerable smallholder farmers.

As previously suggested by Kaplinsky (2000), simply participating in globalisation doesn't ensure economic or development gains, but rather it is more important to consider how to participate. The how to participate is not only emphasising the capability of actors participating in the GPN, but also the role of extrafirm actors, including the state, to accommodate and enable the process of participating in the global economy. The Indonesian cocoa sector is still dependent on export markets, while the oligopoly market structure has increased vertical competitive pressures for local actors. Adding to Ong (2000) argument on ways of the state-globalisation interactions the special economic zone (Batam, Indonesia) suggests the foreign corporation have taken the state governing authority. However, in the cocoa sector such authority had not been replaced by the corporation because of the hands-off policy approach and institutional limitations in attempt to reclaim the governing authority on exercising governing authority particularly linking to upstream cocoa development. The intensified liberal market is unlikely to reverse, while the dominant investment of transnational firms cannot rely upon the struggled institutions to deliver extension services and ensure the supply security. For the Indonesian government, the emerging firm sustainability initiatives have expanded the lead firm control over upstream cocoa production networks. Most importantly, the Indonesian state has interpreted the various lead firm sustainability initiatives (including certification, partnership platforms and even donor support activities) as veiled attempts to gain control of sites of upstream production. Such an interpretation is understandable given my analysis in Chapter 5 that demonstrated how lead firm discourses and practices around sustainability were intimately related to emergent governance structures and actor strategies in the sector.

Conclusion

This chapter shows how the government has attempted to influence the spatial dynamics of domestic cocoa production networks and capture greater value added from global market expansion. This was a response to lead firm strategies, many of which embrace sustainability discourses, to increase vertical coordination and ensure the supply production. These multi-scalar interests within the emerging firm sustainability initiative have resulted in the attempt to create local institutional barriers by the Government of Indonesia even though their limited institutional capacity has failed to strengthen the supply capacity of the upstream actors. The government's attempts to improve the country's comparative advantage and concretise an integrated upstream-downstream cocoa production networks were thwarted by the intricate interests of politicians and economic actors. The motivation behind these policies explicitly reflected domestic industrial actors' concerns regarding the increased dominance of the transnational firms in the GPN. The unprecedented outcome of the transnational firms' concentration put competitive pressure on

sourcing from the competitive upstream market as increased demand was not followed by increased supply from the smallholder farmers. Lead firms made the strategic decision to impose a responsible sourcing policy in the form of sustainability initiatives that restricted market accessibility and had the effect of restricting supply capacity for domestic processing and trading firms.

Sustainability slowly became a mainstream market instrument used to increase the vertical coordination between the lead firms and their (competent) capitalist supply partners, specifically to minimise the risks affecting the supply capacity of smallholder farmers. In tandem with the growing economic scale and scope of production, the transnational supply partners have strengthened their position while gradually excluding the less competitive domestic firms from participating in the global production network. In response, the Indonesian state has also mobilised the discourse of sustainability (*keberlanjutan*) in an attempt to both support local industrialists and exert political sovereignty. To date, however, these attempts have been mostly unsuccessful (eg. the bureaucratic control through Permentan no. 67/2014 has been delayed), and government participation in the sustainability discourse remains ambiguous. Moreover, the limited institutional capacity to reverse the liberal market trends suggest a continuation of declining state control to intervene in the upgrading process. These attempts to control the upstream production networks show an intricate relationship between the government and few industrial groups who are resisting the growing influence of transnational firms.

7. Farm level upgrading and sustainability initiatives

The emerging firm sustainability initiatives in Indonesia have shown increased farm level intervention in areas traditionally delivered by development agencies and the state. With the primary goals of improving smallholder farmers' supply capacity, and addressing various socioenvironmental issues, the transnational firm initiatives can also be understood as presenting opportunities for farm-level upgrading. Within the context of global value chain analysis, upgrading means 'moving-up' in terms of adding value from the product or process, or integrating new functions structured to capture greater value by participating in a GVC/GPN (Gereffi, 2005: 171). The idea of 'upgrading' corresponds to the use of 'value capture trajectories' in the GPN literature (Coe and Yeung, 2015). Initially, Humphrey and Schmitz (2002) identified four type of upgrading: 1) Process upgrading, more efficient reorganising of the production system; 2) Product upgrading, increase unit value of the product; 3) Functional upgrading, adding and increasing the skill content of activities; and, 4) Inter-sectoral upgrading, moving or expanding into a new production system. It should be emphasised, however, that several scholars (Barrientos et al., 2010; Selwyn, 2013; Milberg and Winkler, 2011) have argued that these four types of economic industrial upgrading are not necessarily accompanied by social upgrading, and that social upgrading may also occur in the absence of economic upgrading. The idea of upgrading does, however, provide a framework for conceptualising opportunities for livelihood improvements and rural / regional development within the GPN.

Chapter 6 addressed the institutional limitations of the Indonesian government's attempt to strengthen Indonesian supply capacity by introducing the Gernas Program. The state's inability to successfully facilitate the involvement of local industrialists in the GPN reflects similar developments in other major cocoa producing countries, such as the Ivory Coast where policies to encourage transnational investment in local processing delivered only marginal benefits to the local economy (Talbot, 2002). Looking back on previous non-state sustainability programs initiated in the early development of the Indonesian sector, value chain interventions primarily focused on product and process upgrading, and creating a direct linkage with the global market. However, these programs delivered limited outcomes. For example, the USAID-AMARTA⁸⁶ cocoa program attempted to encourage the upstream involvement of lead cocoa firms, but failed to deliver a high-quality and stable supply of cocoa beans (Henriksen et at., 2010). Neilson and McKenzie (2015) argue to the effect that these interventions simply encourage adoption of new technology in the absence of clear incentives. As such, they generated enhanced awareness about agronomic options amongst farmers, but not necessarily a willingness to apply those same practices. The adoption of new technologies required significant financial investment and additional labour that was not necessarily compensated by improved market prices.

The firm-based sustainability initiatives introduced new opportunities for different forms of upgrading. By applying a certification scheme along with the in-house design of the Mars CDC-CVC business oriented-outreach model, Mars aimed to improve the yields and profitability of smallholder

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⁸⁶ United States Agency of Development International-Agribusiness Market Support Activity (USAID-AMARTA)

farming production system — a form of process upgrading. In this chapter, I will now identify the different form and value capture trajectories of farm level upgrading introduced via the implementation of certification schemes and the Mars CDC-CVC business extension model. These increased upstream interventions suggest the substantial role of the transnational cocoa-chocolate firms in influencing the local production system structure as well as smallholders' livelihoods. I will assess the extent to which upgrading opportunities through sustainability initiatives are translated into improved livelihood outcomes for cocoa farmers in Indonesia. To do so requires a more sensitive understanding of the rural development context and prevailing livelihood strategies within cocoa-growing communities. The following sections discuss different forms of farm-level upgrading, while exploring who captures the value of sustainability-linked upgrading, and considers the resulting livelihood trajectories for smallholder farmers.

7.1 Cocoa-based livelihoods on Sulawesi

Cocoa production on Sulawesi is overwhelmingly dominated by smallholders who spontaneously adopted cocoa in the 1990s. This cocoa boom period coincided with a growing population, and while land was initially abundant, there was eventually limited land for the continued expansion of cocoa farming. The average land holding has shrunk from more than 2.5 hectares in the 1990s (Ruf and Yoddang, 2004: 180-81) to 1.4 hectares per household today. This relatively small scale of cocoa farms also included individual plots claimed by a single farmer in multiple locations. Farmers who have reached middle age either pass on their small plots to their heirs or have them managed by relatives. Following an erosion of forest rent, the farmers acknowledged that maintaining the cocoa farms has become increasingly labour intensive and costly, and that often there is insufficient return to support their livelihoods. However, they remain optimistic and will continue to maintain cocoa farms, as commented by a farmer (Respondent GL4, pers. comm, 2014):

Although our cocoa farms are less productive and infested with diseases, along with other local farmers I will not abandon cocoa farming. Because this is an export crop, its price never declines too much. Because of cocoa, many of my friends have children who have studied in the university and they have gone on the Hajj. (*Meskipun kebun kakao sudah kurang berproduksi dan kena penyakit, tapi saya dan petani disini tidak mau tinggalkan kakao. Karena ini tanaman ekspor dan harganya tidak pernah turun sekali. Karena kakao, banyak teman disini yang anaknya sekolah sampai universitas dan pergi haji*).

Driven by economic interest, the adoption of cocoa farming in Sulawesi was divided into two approaches. Many of the cocoa farms in the Luwu region are monocropped, with limited shade trees and intercropping. In West Sulawesi regions like Polewali Mandar, the adoption of cocoa was intercropped with already established native fruit trees (Durian and Langsat) and coconut trees. Out of this intercropping, cocoa provided the major revenue for the family farming business, because the fruit trees are seasonal and primarily depend on the domestic market.

7.1.1 Household structure and farm characteristics

The following description of cocoa farmer characteristics was based on a preliminary survey of the sustainable certification scheme in Polewali Mandar District of West Sulawesi, (Hafid et al, 2013, refer also to Appendix E). In Sulawesi, the household structure is patriarchy-oriented and farming is a

family business. Family members – both male and female – work together to manage and maintain the farms. Eighty per cent of households in West Sulawesi comprise more than four individuals, as the members collectively manage the farms and undertake the harvest. The middle-aged farmers are generally literate, with most of their children finishing their schooling at least to the primary level (see Table 7.1).

In West Sulawesi, cocoa farm yields have declined over the last decade leaving the farmers to face bust periods with limited alternative livelihood options (Respondents FG2 and FG3, 2014; Respondents FG5, FG6, FG8, 2015). A perennial crop, cocoa is usually harvested twice a year over a five-month period. Ideally, the farmers spend the remaining seven months re-investing in farm maintenance, a replenishment period often marked by minimum inputs since farmers claimed that they already struggled to meet their daily subsistence needs. Agro-chemical spraying to combat widespread pest-disease infestation, however, has become a common practice among the cocoa farmers because of the labour efficiency (Neilson et al., 2011) and relatively low cost.

Table 7.1 Characteristics of cocoa farmers in Polewali Mandar District, West Sulawesi (n: 158) 87

1. Household structure		
- Farmer age (average)	42 years	
- Less than 3 individuals	22%	
- 4-5 individuals	47%	
- More than 6 individuals	31%	
2. Highest education	Farmers (n: 158)	Household members (n:713)
- No enrolment	13%	19%
- Primary (9 years)	74%	68%
- High school (and university)	13%	13%
3. Livelihood (income sources)		
Estimated annual income		
- All sources	777 US\$	
- Only cocoa	494 US\$	
- Cocoa/ha farm	378 US\$	
4. Cocoa farm (Mean)		
- Farm size (Ha)	1.4	
- Years of growing cocoa	20	
- Annual production	481 kg	
- Yield (kg/ha)	358 kg	
- May (peak month) harvest in 2012	113 kg	
5. Marketing (majority sold to)		
- Transnational trader	43%	
- Local trader	2%	
- Collector	48%	
- No answer	7%	

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⁸⁷ Based on a Sustainability impact assessment survey I undertook in West Sulawesi, 2012. An ACIAR-funded the research project: Improving the sustainability of cocoa production in Eastern Indonesia through integrated pest disease and soil management in an effective extension and policy environment, HORT/2010/011.

In an effort to combat declining cocoa farm yields and ongoing pest-disease infestation, short-term gain was introduced via previous programs and projects (e.g., *Gernas kakao* and AMARTA). This involved applied grafting of unproductive trees and regular application of agro-chemical spraying and fertilizer. However, the yield outcomes generally failed to match farmer aspirations. The project-based programs had limited impact on achieving long-term increases in cocoa yield and farm profitability. Farmers felt that the interventions had limited impact on reducing their vulnerability to risk and uncertainties related to environmental deterioration and global market fluctuations.

As farming serves as the primary livelihood activity within these rural communities, the farmers who participated in our survey stated that cocoa farming represented more than sixty per cent of their total annual income. Additional income accrued from other crops, livestock, and temporary casual work outside the regions. However, some of the 'better off' farmers hired casual workers for laborious works (e.g., pruning, applying fertilizer, and harvesting), but these jobs were usually short term and uncertain. Previous government project such as Prima Tani⁸⁸ has introduced integrated cocoa farming practices by raising livestock (goats) on cocoa farms. But this top-down program approach had limited capacity for being scaled up and there was limited market demand for goats (initially at least, although some respondents more recently claimed that demand from the neighbour regions had encouraged goat farming - Respondents FG8; FG9; FG19, 2015). Their hope is to minimise their vulnerability from dependence on cocoa farming and capture opportunities in relatively stable local markets.

7.1.2 Cocoa farming costs

Deterioration of forest rent has led to increased costs associated with cocoa farming. Most of the earlier cocoa sustainability projects promoted good farming practices from a rather linear perspective and the assumption that increased knowledge about 'Good Agricultural Practices' would result in higher adoption rates, increasing yields and improved livelihoods. Upgrading to good farming practices, however, was associated with higher input applications (especially labour) than conventional farming practices. Despite neglecting to consider local livelihood constraints and limited capital resources, and the possibility that demands on rural labour were higher than assumed, farmers were expected to voluntarily adopt the practice. Instead, they opted to maintain the conventional low input farming practices. In response, in 2012, a pilot project introduced a program involving a combination of micro-finance and technical assistance. This problem-driven Cocoa Innovation Project (CIP)⁸⁹ aimed to maintain farm profitability by providing access to microfinance and phone-based extension services. While these accessible financial services were restricted to investment in farming projects only, the farmers gained a certain degree of authority

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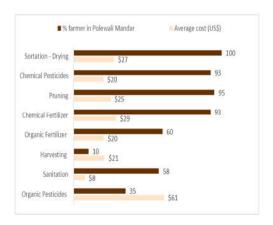
⁸⁸ Prima Tani program introduced in 2005 by Agriculture Research and Development agency, as instrument to link the research innovation and agribusiness actors and stakeholders, [Retrieved on April, 2017] http://pustaka.litbang.pertanian.go.id/publikasi/wr27505j.pdf

⁸⁹ This Cocoa Innovation Project (2012-2013) was a continuation of the AMARTA II program. This two-year project funded by the World Cocoa Foundation and ACDI/VOCA, also partnered with BTPN bank, Armajaro trading firm and the International Finance Corporation.

over selecting which practices and types of input to willingly adopting based on their personal assessments.

The project was implemented in four major cocoa-producing regions including North Luwu and Polewali Mandar. Based upon information gathered through the pilot project (Respondent SS23, 2015 and see Appendix H), Figure 7.1 shows that most of the farmers from both districts expressed concern over pest infestation. The Figure shows higher investment in pest outbreak targeting than improving the soil quality. For example, all the assisted farmers from Polewali Mandar had invested in both chemical and organic pesticides, whereas only half of their number were willing to invest in fertilizer. Also, all the assisted farmers from North Luwu who applied pesticides and fertilizers preferred chemical over organic inputs. A comparison of farming practices employed in different districts shows a higher percentage of North Luwu farmers were willing to invest their capital across most of the farming practices. Only half of the Polewali Mandar farmers were willing to invest in harvesting and post-harvest practices such as bean sorting and drying. Overall, the total annual investment in cocoa farming was approximately US\$200, which is almost fifty percent of the total revenue per hectare (see Table 7.1). The project's final report showed a higher rate of debt return identified among the North Luwu farmers than those from Polewali Mandar District.





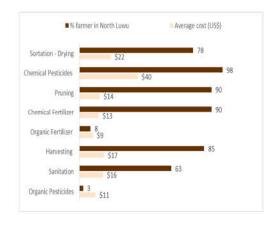


Figure 7.1 not only shows the farming cost structure, but also how much farmers spent relative to how many actually performed the task: clearly, they were more concerned about pest and disease infestation. Their concentrated efforts try to minimise the risk, which meant paying less attention to replenishing the exhausted soil from the forest rent. Although most of the North Luwu farmers were willing to invest in fertilizer, their capital investment in organic pesticides was much lower than in chemical pesticides as the farmers were more familiar with chemical applications. The farmers' unwillingness to invest in fertilizer was likely related to perceptions of high cost. Meanwhile, the pesticide brands promoted by the agrochemical company agents were associated with lower costs and labour efficiency, despite the limited verification of the brands effectivity. Also, there is a possibility of pest-disease resistance after long periods of application. The farmers' high investment

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⁹⁰ Raw data (see Appendix J) was analysed with the permission of the project manager. The project has completed in 2013.

in commercial pesticides may only temporarily deliver the desirable effects, and are likely unable to ensure long-term effect such as eliminating infestation from the farm ecosystem.

7.1.3 Livelihood risks and opportunities

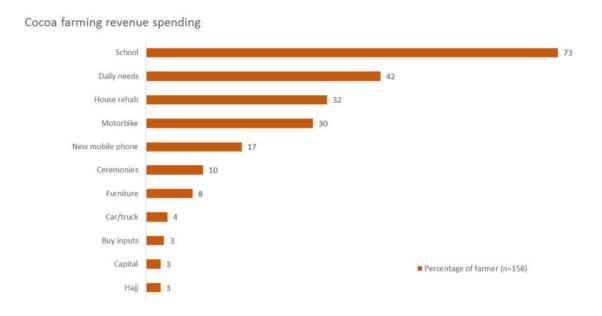
Besides their ongoing pest-disease problems, cocoa farmers also face the uncertainty of environmental risk due to changing weather patterns, e.g., drought, floods and landslides. A combination of high environmental risk and exhausted cocoa farm conditions is contributing to a decline in farm yield, by extension further affecting the smallholder farmers' incomes and livelihoods. As the above section shows, there is a high cost of managing these risks accounting for an estimated half of total annual revenue from cocoa farming, and much of this was spent on agrochemical applications. Meanwhile, the market price is based on global supply-demand dynamics rather than reflecting to the actual cost of cocoa farm management. Their understanding of this risk has prompted the Sulawesi farmers to own multiple locations of small-plot farms as a strategy to minimise their vulnerability to mass deterioration of farm productivity. Although this strategy demands extra labour and is less efficient, overall it seems to have contributed to the slowing down of the vulnerability of the declining farming profitability. The farmers from West Sulawesi said that, over time, heavily damaged farms tended to be abandoned leaving the farmer to concentrate on the relatively productive farms (Respondent FG6, 2015; Respondent FG8, 2015).

Although the farms have become important livelihood instruments to generate household income, re-investing and maintaining farm productivity was far from the household spending priority. For example, the cocoa farmers from the Polewali Mandar region were asked open-ended questions regarding how they spend the revenue generated from their cocoa farms (Figure 7.2). The relatively low priority afforded to farm inputs is indicative of their unwillingness to reinvest on farm, and behind the non-productive items of consumption. e.g., house rehabilitation, attending ceremonies and buying new furniture. From this perspective, it seems that social aspects gained more interest, particularly the preserving of social relationships and improving the family's social status among the rural communities. For example, attending ceremonies to rehabilitate the traditional wooden houses into brick houses is now a priority to upgrading the social standard of living (see Appendix C.2). Investment in children's education is also reflective of broadly held desire for children to work in the non-agricultural sector.

The ongoing implementation of certification schemes was focused on farm management and establishing vertical coordination between the upstream and industrial actors in the interests of collectively establishing a sustainable supply chain. Driven and incentivised by the lead firms, the ongoing schemes were implemented by supply partners dominated by transnational trading firms. The supply partners, who were also known as certificate holders, were responsible for establishing a farmer-based control system (Internal Control System). The ICS serve as an 'arms-length' control system for the firms to ensure cocoa sourcing occurs from certified farms and that proper record keeping is maintained. Control over the ICS by the firm, and its position as the formal certificate holder, means that it has effective management operational control of the ICS, including over the distribution of any certification premiums. The nature of the voluntary volume-based premium, in addition to the actual price, was unlikely to motivate genuine practice change amongst certified farmers given their low levels of productivity. Regarding the transparency issue surrounding the

incentive distribution, many non-government organisations and cooperatives argued that a certification scheme would only benefit the certificate holder rather than ensuring fair distribution among the smallholder farmers (Respondent SS13, 2014; Respondent SS14, 2014).





It is difficult to claim with any certainty what the farm-level impacts are from certification schemes. My 2012 impact assessment (the findings linking to livelihood from which are presented in Appendix K) examined the early implementation of a certification scheme in the Polewali Mandar region delivered by a local NGO who owned the Wasiat and Amanah cooperatives. This involved a comparison of certified farmers against nearby non-certified farmers. Wasiat provided technical assistance for the adoption of an UTZcertified scheme under a market contract with Armajaro trading, which was supplying Nestlé. The farmers who participate in the certifications scheme showed certain degree of knowledge on prohibited chemicals (including the brands) and seeking for the recommended (less harmful) agrochemicals to comply with the standards. Applying agrochemical was preferable than adopting manual maintenances (e.g. frequent weeding, removing infected pod, and regular pruning) to obtain healthy farms, yet the manual means more labours investment in addition to high cost of inputs application. Both standards did not prohibit the application of chemical fertilisers, but encourage the application of organic ones that can be recycled from the pods and pruned branches, to combine with manures application, and (or) intercropping with nitrogen fixing trees.

Linking to financial accessibility, the both groups of farmers were engaging in different degrees with financial services, although certified farmers had better access to financial services from cooperatives and local banks (Figure 7.3). The non-certified group tended to obtain loans from local collectors and had higher bank debts than the certified group who had lower debts than other providers. Based on this debt structure, the non-certified farmers appear more vulnerable to falling into a debt trap than the certified farmers whose debts remained within the range of cocoa farm revenue.

Despite the up-country presence of transnational firms, many farmers maintained their relationship with collectors and local traders who often also served as informal loan providers. This combination of economic and social relationships is less likely to collapse. Responding to the farmers' need, the local trading actors were also providing farming inputs (supplies of fertiliser and agrochemical pesticides) that seemed less likely to be replaced by the formal institutions or to be eliminated from the upstream production networks.

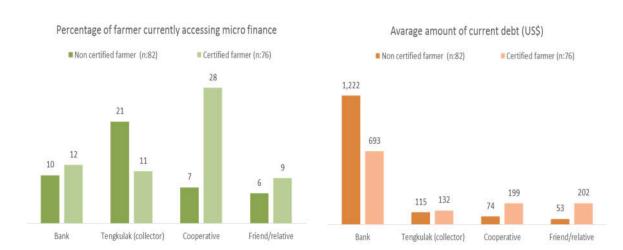


Figure 7.3 Comparing micro-finance accessibility between the certified and non-certified farmers

Different ethnic groups within Indonesia appear to adopt different livelihood approaches. One previous study (Fahmid, 2013) linked ethnicity with willingness to innovate, arguing that Bugis and Mandar farmers were more individualised than Javanese migrants, who tended to have strong solidarity and inclined towards group work. The study identified that the Bugis farmers were focused on investing in productive capital accumulation of land expansion and the application of agro-inputs, the Mandar farmers from West Sulawesi were focused on applying their local resources and tacit knowledge as key investment, while the Javanese farmers were more familiar with upgrading to intensified practices of cocoa farm management.

Recognising these cultural differences, and the broader limitations of formal institutions to support upstream cocoa development, Mars introduced an individual approach to extension delivery. This individual approach reflected the importance of economic motivations of behaviour within cocoa farming communities, which were incorporated within the farming business model, which Mars refers to as a Cocoa Village Clinic (CVC). This approach introduced additional functions that previously were undertaken by the local traders to support cocoa development, but more focus on farming development such as agro-inputs and extension service providers. As this business extension model focus on improving cocoa farm productivity, finding the effectivity of commercial agro-inputs and integrated farming practices are tested and verified in CDC before further distributed across CVCs. Therefore, Mars holds the control over the farming innovation and service coordination system to reshape the upstream cocoa production development. Mars adapted these functions to specifically focus on the delivery of cocoa farming services embedded within the CDC-CVC extension model (see Table 7.2). Further discussion of functional upgrading introduced through CVC farming business model is discussed in section 7.2.3.

Table 7.2 Summary of CVC functions and outcomes in the Luwu region

CVC Function	Activities	Current Outcome
Supplying agro-inputs	- Entering collaboration with the agro-input	- Improving access to agro-inputs and
	providers.	farming tools
	- Regular coordination with CDC on producing	- Updated technology and market
	desirable planting materials.	demand
	- Engaging and collaboration with farming tool	
	providers.	
Extension services	- Building coordination with government officials	- Reputation as reliable and eligible
	and local leaders.	contractor for government or non-
	- Establishing and maintaining demonstration	government projects
	plots.	- Maintaining the attractiveness of
	- Actively engaging with their peer farmers in	cocoa farming
	promoting CVC business and updated technology	- Having economic and social
	on farming practices.	relationships with their peer farmers
	- Facilitating micro-finance accessibility with	- Improving micro-finance accessibility
	banking or other financial support. Managing	with formal institutions
	Internal Control System (ICS) for adopted	
	certification.	

7.2 Farm-level upgrading through sustainability initiatives

Upgrading is a lengthy and complicated process. At the industrial level, firms are continuously seeking economic rent from innovation and repeatedly upgrading to higher value-added production process. At the upstream level, the upgrading process has been highly dependent upon value chain intervention by the extra-firm actors including government and development agencies and, more recently, the certification bodies. The following sections discuss different forms of upgrading embedded in the sustainability initiatives as currently implemented by most of the transnational supply partners and their implications for rural smallholder farmers.

7.2.1 Product upgrading

The term product upgrading can be applied to the process of improving cocoa bean quality and achieving a higher per unit price. This type of upgrading is challenging in the Indonesian cocoa sector, where the 'hands-off' government policy created competitive markets with few quality controls and distinctive cocoa development in Indonesia. In contrary to Ghana and the Ivory Coast, where the state plays crucial roles to properly institutionalise product upgrading (designing, implementing and enforcement of quality controls). In Indonesia, profits are sought through volume-based production rather than seeking higher margins through quality differentiation. The global market was willing to compromise on buying unfermented beans in exchange for stable bulk production, thus price discounting was applied rather than outright rejections. A combination of a lack of early technical assistance and relaxed market conditions contributed to retaining the production of bulk unfermented cocoa bean for the global market.

At the farm level, initial attempts to encourage quality-oriented product upgrading was undertaken by local trading actors (collectors and traders). Because the smallholder farmers were often seeking

quick cash, they were hesitant to prolong the drying days, as it involved additional time and labour. It was only the value chain interventions via sustainability projects early in the 2000s that encouraged relatively direct access to the global market via transnational trading actors that quality expectations became more widespread. Eventually these interventions contributed to application of standardised quality measures, slowly reducing the asymmetrical knowledge gap between farmers and the local trading actors, where quality-based price differentiation emerged.

The emerging firm sustainability initiatives have intensified and driven reinforcement of quality-based assessment along with the growing interest in adopting certification schemes. Transnational traders are using the farm-gate price to incentivise desirable quality attributes, with an additional premium to encourage volume-based certified bean transactions. This process of product upgrading is slowly reshaping quality based assessment and incentives at the farm level.

a. Quality-based assessment

Early quality-based assessment was introduced by various transnational trading firms as they slowly increased their economic scale via their upcountry presence in the dominant cocoa producing regions. However, the early presence proved challenging for the firms to remain competitive because the established local trading actors had built captive relationships with the smallholder farmers. By collaborating with cocoa sustainability projects (SUCCESS, AMARTA, READ, and SCPP) that had promoted value chain interventions, the transnational trading firms introduced a direct global market linkage with the smallholder farmers as a more transparent alternative export market. However, these collaborations also had their limitations when it came to achieving economic scale of direct sourcing (Henriksen et al., 2010). This was in part due to declining farm yields, even though the market promised higher prices from the transparent quality assessment and farm-level market price.

The emerging demand for sustainably certified products meant that quality-based incentives became mainstreamed. This transparency of marketing both attracted and encouraged the farmers to allocate more labour to comply with the quality requirements, e.g., more drying days, reducing waste and mould, and supplying a uniform bean size. The quality-based assessment has now also been adopted by the local traders as a way of maintaining both trust and economic relationships with the smallholder farmers, although the assessment remains partial.

The quality requirements set out by the firms matched those referred to in the national standard for cocoa beans (SNI 2323:2008/Amd.1:2010). However, the extent to which the self-defined requirements firmly referred to the national standard was highly dependent on the firm. While the adopted certification scheme (RA and UTZ) did not define the product standard, the scheme put more focus on the process standard of managing the agro-environment appropriately and maintaining acceptable social practices. The self-defined quality requirements were regionally adjusted to meet local conditions. For example, the same firm may apply different quality requirement assessment records in different regions. More complex quality requirements were applied in North Luwu due to the emerging demand for partially fermented cocoa bean, but less complex requirements were applied in the Polewali Mandar region (see Appendix D).

Despite the differences in defining cocoa quality requirements, compliance generally required increased investment in labour, assessment instruments, and was time consuming. The high cost of applying effective quality assessment has created an entry barrier for some local trading actors to integrate into their purchasing practice. Indeed, some transnational trading firms temporarily close their buying stations during the off-peak season to minimise labour costs (Respondent LT5, pers. comm., 2014; Respondent LT12, pers. comm., 2014). Quality assessments were based on random sampling, i.e., manually counting the cocoa bean to define the uniformity of size, and a cutting test to determine the incidence of defective beans (the level of mouldy, slaty, insect-damaged, germinated or flat bean). Due to the nature of random sampling, the small volume supplied by the farmers challenged the efficiency of farm level transactions, since manual assessments were time-consuming. To overcome this inefficiency, the certification standards suggested the establishment of an ICS (or group) as a collecting hub to improve the vertical coordination of the collection and assessment process.

With the growing adoption of sustainable certification schemes, the quality standards definition has extended to farming production processes rather than the cocoa bean itself, hence increasing the complexity of defining quality content (as previously identified by Reardon et al., (2002) and Ponte and Gibbon (2005)). Reflecting on the context of sustainability initiatives, the lead branded chocolate firms played a significant role on dictating to the contract suppliers which scheme should be adopted and how it should be coordinated and integrated to the specific segment of the supply chain. Following the externalisation of cocoa processing and industrial chocolate production functions to contract suppliers, sustainability initiatives appear to add another function that further contributing to shape labour division and create an entry barrier for some supply chain actors.

The process of mainstream quality-based assessment introduced by the transnational trading firms emphasized a capitalist capability that was limited among the local trading actors. Although the quality requirements remain self-defined, integrating a quality system into the trading process would require substantial investment in human and financial capital. As quality assessment becomes mainstream practice and the ICSs become more capable of performing the collection function, this trajectory is slowly excluding the small-scale local trading actors from the global production network. For participating farmers, this offers an opportunity for product upgrading through quality-based price differentiation. However, quality improvement also comes at a cost and not all farmers are willing to make the necessary investments of time and money, and increasingly rigorous quality assessments are removing the option for farmers to engage in 'downgrading' as a livelihood option.

b. Sustainable market premium

Alongside the quality-based incentive, the implementation of certification schemes has introduced a volume-based premium for complying with the certification standards or codes of conduct. Lead manufacturing firms were offering incentives to encourage the adoption of the certification schemes, and this presented an opportunity for their strategic processor suppliers to pass this on to their own farmer supply base. The schemes were also adopted by a few cooperative and farmer groups, albeit with financial support from the North based international organisations or non-economic actors. As dominant certificate holders, major trader-processor firms were responsible for

managing compliance to standards as well as the distribution of market premiums across the supported ICSs.

Although the voluntary premium has encouraged the adoption of certification, the cocoa farming practices defined by the certification standards are not necessarily oriented towards improving bean quality and farm yield. Shifts towards environmentally friendly and socially responsible farming practises are not necessarily aligned with definitions of product quality, and market incentives for certified cocoa was volume-based. Regarding the declining farm yields, the smallholder farmers who participated in the certification scheme claimed that the annual premium was inadequate to support their livelihoods (Respondent GL5, 2014; Respondent GL6, 2014). This incentive has more benefit for the firms' certificate holders due to the volume based incentive obtain from the large quota of their market contract. Despite, the fact that the alternative market introduced by the scheme has minimised the smallholder farmers' dependence on local trading actors, a few farmer leaders remain sceptical on the positive outcomes regarding implementation of the scheme, Respondent GL4 (2014) explained:

The certification schemes were simply intended to build a direct relationship between farmers and transnational firms, but they were unable to dismantle the social relationships that existed between the farmer and local traders. (*Sertifikasi hanya bertujuan untuk membangun hubungan antara petani dan perusahaan internasional, tapi tidak bisa memutus rantai silaturahmi antara petani dan pedagang*).

With the (relatively insignificant) price premium for compliance being passed down to assisted farmers along with a degree of price transparency, farmers have been empowered to choose and alter their marketing options. For example, they can sell to local traders when there are labour constraints and a need for quick cash, but when the price is more competitive and they have the resources to meet quality standards, the farmers prefer selling to international traders.

The narrow focus of the on-farm extension services and disregard for substantial issues like easy-flexible access to micro-finance and daily basic needs, have led the farmers to claim that the implementation of the schemes is more oriented towards simply administrative compliance and communication of the updated standards rather than actual service delivery (Respondent FG3, 2014; Respondent FG8, 2015). In response to this criticism, the certificate holder staff claim that they are only following the standards and their own premiums need to be negotiated annually with their customers. Due to the voluntary market incentive, the certificate holders have to maintain and support the sustainability teams who deliver extension services and coordinate the collection function at the farmer (Respondent LT14, pers. comm, 2014; Respondent LT5, pers. comm., 2014).

The farmers assisted by the cooperative and non-government organisations acknowledged that there is more transparency of negotiated premium communicated to the farmers in these cases. However, because the cooperatives generally lack economic scale and organisational capability to meet the market contract quotas (see Chapter 5), the extension of certificate holder status to farmers is highly dependent on external supports. The cooperative staff acknowledged the challenges in complying with rigorous market barriers and obtaining direct sourcing from

smallholder farmers, such as the complex quality assessments and sourcing policies exercised by the customers.

As previously argued by Jha et al., (2011), due to volume-based incentives and persistently low yields, the economic implications of the certification schemes for the smallholder coffee farmers' livelihoods were relatively insignificant. However, the scheme has contributed to increased engagement between the smallholder farmers and the transnational firms and minimised farmer dependence on local traders, but it has not necessarily improved the functioning of farmer based organisations and cooperatives. Reflecting on the adoption of Rainforest Alliance in the Ivorian cocoa sector, it has been shown that the certification premium only covered the costs of agrochemical application and farmer training, while compliance cost varied widely (Lemeilleur et al., 2015). This perspective shows that market premiums from certification may have limited financial incentive for the smallholder farmers, but the farmers can still benefit from the technical assistance as a way to capture value after improving farming practises.

7.2.2 Process upgrading

The lead firms' primary goal in implementing upstream intervention in the Indonesian cocoa sector has been to ensure the supply capacity of the smallholder farmers. Following the decline of cocoa farm yield and the farmers' competitiveness, a series of sustainability initiatives proposed earlier has focused on improving the actual process of cocoa farming, usually through 'Good Agricultural Practices'. As repeatedly debated by the industrial actors, a change of farming practices is fundamental for obtaining a desirable quality of cocoa bean. In other words, product upgrading is defined by process upgrading. Lead firms' upstream intervention via sustainability initiatives emphasizes process upgrading through agronomic improvement of small farming practices. Technology transfer is therefore embedded within virtually all sustainability initiatives, and this offers an opportunity for farmers to engage in process upgrading by producing cocoa in a more efficient manner.

a. Improved farm yield

As earlier suggested, certification standards or codes of conduct have limited direct concern over encouraging improved farm yield, while the lead firms' participation in sustainability discourse in Indonesia was driven by insecure supply capacity. This explicit goal resembles the Mars concept of upstream cocoa development, as the CDC-CVC extension model aims to 'triple the yield on cocoa farms'. However, Mars argues that the CDC-CVC concept was more comprehensive than the previous short-term gain practices such as improving good agricultural practice and replanting high-yielding seedlings. The concept emphasizes the critical role of accessible agro-inputs - particularly fertilizers - in supporting the ongoing farm productivity gains, in addition to adopting good practices and desirable planting materials. Attention to increasing yields has therefore become a core element of how lead firms have introduced sustainability initiatives in practice.

Despite most of the cocoa- associated programs and projects' sharing a goal of improving farm yield, there are differences in designing and delivering these concepts. The CDC-CVC aimed to introduce standardised practices and to maintain decentralised coordination of monitoring their five-yearly

progress to guarantee the expected outputs. At the farmer level, adoption of the CVC model of farming as a business required substantial capital investment. While the CVC model has demonstrated the potential for improved farm yield, farmers recognised that this was accompanied by increasing application of farming inputs and subsequently to increased production costs. As improving on-farm practices are following by regular application of appropriate fertilizers dosage and increase labour of maintaining a healthy environment to minimise pest-disease infestations. Sustaining cocoa farm profits has meant upgrading from less to comprehensive agro-input applications. On the other hand, the earlier project-based programs tended to share the knowledge and updated technology without necessarily enforcing their adoption, as Neilson and McKenzie (2015) describes as being aware of the idea versus willingness to apply it at farm level. Thus, ensuring the farmers actually apply the standardised farming practices has been a core objective of the CDC-CVC model.

The mainstream focus on improving farm yield often reflects the generic demand for higher yield and the pest-disease resistant characteristics of planting materials commonly identified by the farmers and cocoa stakeholders. There is also a possibility of modifying and adapting the intrinsic content of the cocoa bean to reflect the higher value demanded by the industrial actors; for example, cocoa butter and flavonoid extract. However, the separation of research output from the market domain has challenged the traditional government's capacity to deliver specific agro-input services in response to dynamic global market demands. The government's limited opportunities to capture economic rent through the technology of genetic modification to create desirable varieties has encouraged Mars to 'domesticate' its farming knowledge and technology as a long-term strategy to sustain industry growth. For example, the rising price of cocoa butter over the last decade has encouraged the development of higher fat content varieties. As Mars' field staff said (Respondent CC2, pers. comm, 2015):

Unlike (public) research institutes that only focus on the quantity of (cocoa farm) production, nowadays the trend of our research focuses on (bigger) bean size and fat content. If it's possible, we are looking for cocoa varieties that have fat content above 60 per cent. (Tidak seperti lembaga penelitian yang hanya fokus pada kuantitas produksi, saat ini trend penelitian kami fokus pada ukuran biji dan kandungan lemak. Kalau bisa, kami mencari varietas kakao yang memiliki kandungan lemak lebih dari 60 persen).

The establishment of a field research centre near the cocoa-producing region of North Luwu, and the ongoing implementation of sustainability initiatives have accelerated the uptake and adoption of desirable cocoa varieties compared to other cocoa-producing regions such as Polewali Mandar and Mamuju. As Mars development centre in East Luwu continuously generates new improved varieties and technology practices, there is more dynamic, voluntary engagement among the farmers and cocoa stakeholders who share an interest in cocoa farming development. For example, the visual confirmation of economic benefit from the adoption of improved varieties has led to higher demand and significant price differentiation of improved varieties of seedlings. From this perspective, Mars has verified that the farmers will voluntarily seek and adopt new technologies once they have evidence of economic benefit.

However, the concern over emphasizing cocoa farm yield and productivity along with implementation of firm sustainability initiatives was also identified through adoption of Rainforest Alliance certification scheme in the Ivory Coast. Lemeilleur et al. (2015) demonstrated a positive correlation between the scheme implementation and farm productivity, as the scheme referred as 'straightforward agricultural extension' at the expense of consumer willingness to pay for sustainable standards, thus questioning the legitimacy of eco-labelling and/or sustainability certification scheme. Although within the Indonesian context, the direct relationship between the adoption of certification schemes and improved farm productivity remains unclear. But, the Mars concept of sustainability, previously described as 'certification plus', is strongly oriented towards such an outcome.

b. Transfer of technology

Despite a series of *Gernas* programs, the government's contribution to generating and extending the updated technology of efficient and better practices in cocoa production has been limited. The program was considered to be innovative simply because of the application of the mass production of Somatic Embryogenesis seedlings. It did not involve improved engagement between downstream demand and upstream supply. Although the adoption of this technology has assisted the government to deliver mass production, distribute desirably-uniform varieties, and improve the quasi-government cocoa research institution (ICCRI), but the output of this technology has not necessary benefited smallholder farmers. Application of this top-down approach generally excluded the farmers from engaging with the proposed technology, positioned them as passive recipients of technology.

Mars has also controlled the design and distribution of updated technologies through the CDC-CVC concept of extension services, but the assisted farmers contributed to selecting which technology fit to their condition. The CDC, as a field research station, conducts 'in-vitro' experiments on different aspects of farm management, while the dispersed CVC businesses conduct 'in-vivo' experiments and distribute the outputs to nearby smallholder farmers. As an independent and integrated field research centre, the Mars development centre mainly focuses on a range of experiments linked to agronomic practices that focus on increasing farm yield. This involves exploring desirable hybrid varieties, and verifying the efficiency of agro-chemical application, nurseries, and demonstration farms' different types of grafting techniques (see Appendix C.1).

The CDC-CVC model of technology transfer positions the cocoa doctor (or the owner of CVC business) as an agent who contributes to screening of adaptable and approved technologies before promoting them across peer farmers. While Mars has ownership and control over what kind of research outputs they attempt to distribute, the owners of CVC businesses have control over selecting which technologies are suited to the geographic conditions, and how they adapt to the socio-economic circumstances. This presents opportunities for process upgrading that not only allows the farmers to verify which varieties and technologies are more suitable and profitable for the region, but also positions them as decision-makers on managing their own farming businesses.

This different process of technology transfer shows that sustainability initiatives allow the transnational firms to exercise decentralised control over developing an adapted service delivery for

scaling-up desirable varieties and technologies. With their in-house design of sustainability initiatives, the transnational firms have more flexibility to develop 'sustainable farming practices' that reflect their particular interests. This decentralised model of transfer technology has assisted the training of farmers exclusively selected based on their individual capitalist capability and social capacity. The selection of assisting farmers within the dominant patriarchy communities is reflecting to more practical rational in promoting 'good cocoa farm' rather than selecting from the specific groups of community (e.g. ethnicity and social status). Thus, the selected farmers tend to own visible and accessible farms to attract public attention, relative capital assets to scale up and adopt technologies, and individual qualities to outreach more farmers such as productive age, energetic, and appealing to gain interest from the other farmers.

7.2.3 Functional upgrading

Sustainability initiatives do offer opportunities for functional upgrading at the farm-level, involving the introduction of new value-adding activities by farmers and is especially evident in the Mars CDC-CVC concept. Selected farmers have been assisted to develop into service providers (cocoa doctors) for others by demonstrating and managing profitable farming business (the Cocoa Village Clinic, or CVC). The concept emphasises direct economic value capture from diversifying the farming business of the CVC, which in turn is supported by the Cocoa Development Centre (CDC).

Focusing on farm level upgrading, the CVC concept has attempted to improve the individual's capability to sustain a cocoa farming business, reflecting the fact that farmer groups do not serve individual interests. Having learnt from the previous group-based assistance program, which resulted in limited actual practice adoption, Mars attempted to change the farmers' mindsets by showcasing successful farms and prosperous farmers through a 'seeing is believing' approach. Other farmers, it was hoped, would voluntarily adopt the practice after seeing evidence of improved farms and livelihoods. The Mars CDC in East Luwu has produced approximately eighty 'cocoa doctors' who have been mandated to establish CVC businesses and provide agronomic services to their peers (Respondent CC3, pers. comm, 2015).

The farmers who trained as 'cocoa doctors' to operate the CVC were expected to serve different roles as farmers, trained agronomists, and entrepreneurs. Conventionally, these roles would be performed by different actors and institutions who were neither part of the community nor shared any of the farmer livelihood challenges. Recruiting cocoa doctors from the farming community would minimise the social gap and improve the trust of the community. At the same time, it would improve the cocoa doctors' self-confidence and encourage them to stand out among their peers (Respondent CC1, pers. comm, 2014; Respondent CC3, pers. comm, 2015). The assisted farmers served additional functions to support Mars production system, including supplying agro-inputs, providing extension services, and collecting cocoa bean (see Table 7.1). An equivalent process was observed amongst certification schemes that required 'extension' staff to act as ICS, many of whom were recruited from the farming community, and who generally had access to improved educational opportunities.

While the disengagement of traditional extension providers from farming communities in projectbased programs discouraged farmers from voluntarily adopting good practice and undermined individual capabilities, this integrated function (i.e., extension services and agro-inputs supply) of CVCs attempted to improve both vertical coordination with industrial actors and horizontal coordination with the supporting actors (such as agro-input suppliers, local government, financial institutions and peer farmers). This has also allowed functional upgrading for the cocoa farmers turned cocoa doctors, while continuing to encourage production improvements amongst the farming community and enhancing supply capacity.

a. Agro-inputs supplier

A reliable supply of agro-inputs is a crucial element for achieving higher farm yields that might allow process upgrading. Following the deterioration of forest rent and the devastation caused by pest disease infestation, the cocoa farms entered a bust period marked by less assured information and partial technical assistance on how to restore farm productivity. A combination of affordability and obvious symptoms of pest disease infestation encouraged the farmers to intensively apply agrochemicals despite their limited information and confirmation of their effectiveness by experts or official agents. The CDCs aimed to fill this gap by providing technical support and information on the application of agro-inputs, while CVCs supplied the inputs. Through this model, Mars hoped to embed more reliable information regarding chemical use within the supply network.

Making agro-inputs available at the farm level was the primary focus of the new CVC businesses that was followed by significant financial investment, as described in the CDC-CVC manual (Mars 2013: 22):

A start-up Productivity Package is necessary to set up a successful CVC. The package must consist of:

- 1. Agronomy and business training combined with coaching services from the Cocoa Academy and CDC.
- 2. Relevant infrastructure in place, such as nursery (US\$1,000 for 5000 seedlings), a 'Wow farm' and budwood garden (US\$ 300 for 300 trees), a warehouse (US\$ 2,000 for 10 tons of fertilizer), communication equipment (US\$400, and in some cases, an irrigation system for the nursery (US\$1,000), at [a]total cost of US\$4,700.
- 3. A credit system for \$6,000 to carry inventory of inputs and tools.

In an attempt to ensure adoption of the productivity package, Mars signed a Memorandum of Understanding with local formal financial institutions to facilitate micro-finance accessibility and support the entrepreneurial capacity of assisted farmers (Respondent CC1, pers. comm, 2014). The experience of accessing a formal financial institution signified the importance of asset accumulation, since credit provision opened an opportunity to increase the scale of the farming businesses. This intervention delivered more comprehensive assistance that was not limited to ensuring the availability and accessibility of agro-inputs, but also encouraged farmer entrepreneurship. The CVCs had become 'delivery instruments' widely promoting and distributing desirable varieties and farming practices across the rural communities.

b. Extension services provider

Technical assistance and knowledge is now embedded within agro-input supply by some value chain interventions. This further encourages process upgrading, as farm rehabilitation and enhanced supply often relies upon appropriate agro-inputs application and better farm practices. In contrast, prevailing technical assistance projects from the government for the estate crops sector tend to be politically motivated, and are often designed to meet short-medium goals rather than long-term planning, for definite goals like food sovereignty (Ministry of Industry, 2009; Ministry of National Planning and Development, 2013). These politically-driven, short-term term goals create a negotiable space to consider which sectors to support and disregard, and as a result, estate crop extension activities tend to be under-resourced. Rather than depending on this unreliable public domain and disengagement from upstream cocoa production networks, sustainability initiatives have attempted to fill the gap of accessible supports.

As well as adding to the functional roles of the assisted farmers as extension agents, the CVC model has meant that owning a profitable farming business has become an instrument to show-off the output of improved farming practices and gain the attention of fellow farmers. The requirement for significant financial investment to transform conventional farming seemed a less viable option for many smallholder farmers. Based on Mars' assessment, to establish a nursery and rehabilitate cocoa farms required financial support totalling between US\$4,700 – US\$11,000, with a wide range of potential profit depending on local market conditions (Mars, 2013). Field observations revealed that the successfully trained farmers mostly came from areas with limited exposure and experience of cocoa farming development, showing high demand for quality planting materials and limited availability of agro-inputs.

To demonstrate how a cocoa farmer has upgraded to new functional activities as a result of engagement with a sustainability initiative by examine a success story of one cocoa doctor (Andi Asri) from Wajo district (the South of Luwu district). Andi Asri success to transform small plot cocoa farm into cocoa business was rather distinctive than the other cocoa doctors from dominant cocoa producing areas who have been exposed to a range of technical assistances and relatively accessible global market. His success on developing cocoa business, partially because limited development of cocoa farming in Wajo District, from the faring production, global market accessibility, technical assistances, and agro-inputs services. With limited development comes with limited competition in cocoa farming business, Andi Asri becomes a pioneer to upgrade the conventional cocoa farming into cocoa (agri)business, linking the peer farmers into the global market and establishing his private extension service business with supports from Mars.

Andi Asri claims to be gaining annual revenue of more than US\$ 35,000 from his CVC business (sixhectare farm, nurseries, agro-inputs distributions, and farming tools selling). Andi further planned to build an insecticide factory to support cocoa sustainability in Wajo district (Cokelat magazine, 2015: p.53). Identifying himself as a private extension agent, he claimed that his work had impacted on the community by supporting improved farm yield, increasing volume supply for local traders, and creating farming jobs for casual workers. Other farmers who participated in the cocoa doctor program have also benefited through process and functional upgrading (suppliers of agro-inputs and farming tools, and by acting as bean collectors). The significant profit accruing from the cocoa

farming business has inspired most of the assisted farmers to concentrate and employ an asset accumulation strategy for expanding the economic scale and scope of their farming businesses. For example, increase their nursery capacity, buying additional land and transform them into cocoa farms, and increasing their scale of agro-input supply (Respondent GL11, pers. comm, 2015; Respondent GL13, pers. comm, 2015).

7.3 Upgrading and dependence on the cocoa GPN

Another aspect of sustainability engagement associated with offering new upgrading opportunities, is that farmers become increasingly invested in the cocoa sector, where rural livelihood improvements assume a linear rationale of agricultural modernisation leading to improved livelihood. At the same time, upgrading opportunities are becoming increasingly dependent on a GPN characterised by competitive, oligopolistic structures. Smallholder farmers are reliant upon markets and extension provision delivered by transnational industrial actors. This dependence appears to benefit lead firms concerned about supply risks. As explicitly stated in the CDC-CVC manual (Mars, 2014: p.8):

A CDC requires ongoing investment by an institute or company, while a CVC will generate its own revenue and is cost neutral for the sponsor. The profit motive for more and repeat business means that CVC owners are highly motivated to reach many farmers and deliver high quality work. On the other hand, the benefit of higher volumes and better quality of beans, and the loyalty of participating farmers, allow companies to obtain quality premiums and trade higher volumes.

While the Mars CDC-CVC concept of agricultural extension services focuses on encouraging high-input farming practices, the sustainability certification schemes focus on improving vertical coordination with the dispersed smallholder cocoa farmers. This vertical coordination partially was aiming to encourage the contracted suppliers, particularly the transnational intermediate firms, to participate and share resources in delivering a range of services. This process of improving vertical coordination among the supply chain actors suggests the dominant role of transnational firms as market and extension service providers. Eventually, the initiatives received financial support from the north based organisation through public private partnership programs (e.g. SCPP and MCA-Green Prosperity), as the program included certification schemes as instruments to reach and coordinate dispersed smallholder farmers. Although the certification scheme improved vertical coordination, while minimising social and environmental deterioration and improving farming practices, it did not necessarily address progressive quality improvement or risk management.

The scarcity of land and deterioration of forest rent leading to increasing supply risks induced support to adopt a high input farming approach and single sector farming business, as reflected in the CDC-CVC business extension model. This cocoa farming business model oriented to overcome yield gaps through improved agronomic technologies also emphasises capital investment, often requiring credit from formal financial institutions. This coordinated effort to facilitate the competent farmers to develop cocoa farming as a business, to access financial support and to adopt improved agronomic technologies suggests an initial step towards capitalist farming where livelihoods depend on a single-crop. This extension business model was built upon the oligopolistic market demand

where the value gained from the improved farming business depended on cocoa market prices. The single-crop oriented business model creates vulnerability, since deteriorating market prices⁹¹, because of over-supply or market failure, could eventually affect the whole farm system.

As the smallholder farmer is systematically enrolled into global cocoa production networks, the competition among the millions of farmers intensifies, adding competitive pressures in managing their cocoa farms. At the same time, the increasing farming costs after shifting to higher agro-inputs practices and environmental risks are borne by the farmers. Indeed, under the firm sustainability initiatives, the farmers may engage with more relevant and effective technical assistance, but such assistance were partially pragmatic to the farmers' circumstances and are not necessarily compensated by the market price. The vertical coordination is applied from the firm perspective to improving the smallholder supply capacity and efficiency of the upstream production system, and so helps minimise the supply risks of the transnational firms. But it does not necessarily compensate for the increasing agro-inputs cost and uncertainty of climate change that may affect the farming outputs.

The improved farm business depends on linking farmers to credit from public finance institutions. From the support side, most credit providers have stringent a policy that requires land as a fixed asset of collateral to assure the loan repayment, while declining market prices and an inability to manage such risks can lead to dispossession of the land. This scenario is beyond the control of smallholder farmers. Although credit can support the farmers to engage with process upgrading, it does not necessarily protect the smallholder farmers from the unprecedented risks linked to market demand, or risks outside the market domain such as unfavourable climate and/or intensified pest-diseases infestation. The sustainability initiative, as embodied in the CVC farming business, creates dependence to the extension services that delivered by the transnational firms. This approach offers temporary gain from farm level upgrading practices, yet the smallholder farmers continues to bear the credit consequences unprecedented risk exposure.

This single sector upgrading opportunities reflect the lead firms' interest in securing supply, ensuring quality, and establishing commercial relationships within their uneven power relationships with more than a million smallholder farmers. The coordinated technical assistance made available under the sustainability notion to support and create entrepreneurial farmers is effecting change in the rural landscape wherein smallholding farming is no longer profitable due to uneven capitalist competition among peer farmers. As the certification scheme becomes mainstream for cocoa production and eventually loses the economic value of market differentiation, downgrading is no longer option for maintaining cocoa farms by abandoning or shifting to low value crops. Meanwhile, the capitalist farmers become the subject of intense competition, have to endure the high cost of high agro-inputs farming business, the uncertainty of environmental risks, and political disruption.

https://www.bloomberg.com/news/articles/2017-03-22/cocoa-slump-threatening-top-producer-is-deja-vu-for-80s-traders; UPDATE 2-Hit by falling cocoa prices, Ivory Coast slashes budget, published on 20 April, 2017, http://www.reuters.com/article/ivorycoast-economy-idUSL8N1HS29L

⁹¹ Slumping cocoa prices are testing to the limit top producing countries to ensure stability for farmers, heightening risks for the domestic economy and world markets, published on 23 March 2017,

Conclusion

Sustainability in this context reflects an aim to assist smallholder farmers to engage with different forms of farm-level upgrading, with the primary goal to ensure supply security. This firm sustainability initiative emphasises value creation by shifting to higher input farming practices associated with single-crop farming business practices. Although temporarily the farmers benefit from process and functional upgrading, these initiatives also emphasise the importance of capital accumulation and economic scale of production. At the same time, lead firms and contract suppliers maintain their dominant position in exercising control through vertical market coordination and driving efficiency. This pressures the smallholder farmers' capability to bear market price volatility and environmental risks.

Sustainability initiatives have shown increasing intervention in cocoa development by transnational firms, and vertical coordination with supply partners through to smallholder farmers. The adoption of certification schemes has established a traceability system whereby certificate holders coordinate the sourcing of cocoa bean from the farmer level, in addition to ensuring compliance to sustainable farming standards. The schemes have (1) introduced product upgrading opportunities by enforcing quality-based assessment and price transparency, and (2) introduced a volume-based premium to incentivise the compliance to sustainable farming standards. With certificate holders served by the concentrated transnational trading firms, the established traceability system aims to monitor the efficiency farm level assistances and bench-marking efforts of certificate holders. The sustainable farming standards focus more upon the broad picture of environmental and social issues rather than specifically upon improving cocoa farming yield and ensuring the supply capacity of the smallholder farmers. As a result, firms such as Mars combine existing standards with their own system of farmer supports.

As well as encouraging the adoption of certification schemes by supply partners, Mars has designed a private CDC-CVC extension service with the primary goal of improving cocoa farm yield. This model of extension service has increased both vertical and horizontal coordination within the farm-level cocoa production networks. Adopting an individual approach, Mars is attempting to drive and upscale CVCs as farming businesses, which operate as assisted farmer extension service providers. This combination of farming business and extension service facilitates individual functional upgrading of farmer agents, and this, in turn, is a crucial element in encouraging other farmers to engage with product and process upgrading. Although the initiative has filled the gap of poor coordination between input supply and cocoa farm production, the capturing of value from this upgrading opportunity requires prior capabilities, a condition that will disqualify the participation of less well-resourced farmers. As more capitalist farmers enter different forms of upgrading, capturing and accumulating value added, the process threatens to create uneven competition between the capitalist and smallholder farmers. This capitalist competitive pressure will eventually exclude the smallholder farmers. This scenario of imbalance capitalist competition on capturing the value from the global production networks between the upstream local actors and transnational firms has previously showed in Ghana cocoa production networks (Barrientos et al., 2007).

The initiative to deliver extension supports by creating farming businesses and delivering sustainability initiatives involves increasing vertical coordination and increased farmer dependence

on the presence of the transnational firms, with primary goal to improve cocoa farm yield and further ensure supply security. Yet, under the certification schemes such farm level impact remains unclear despite the schemes have established a traceability platform to monitor the supply risks (re. opportunistic practices, non-transparent market, and high-cost upstream production networks) and identify the smallholder farmers in different geographic location. Broadly under the sustainability banners, the transnational firms have reclaimed the dominancy of domestic market and control the public services from the value creation to redistributing of knowledge based on the economic interest, to sustain chocolate-cocoa industries.

8. Sustainability and (uneven) regional development

Extending the cocoa production networks analysis to include regional development, in this chapter I discuss the intricate trans-local dynamics linked to the emerging firm sustainability initiatives. The previous chapters have discussed the inter-firm coordination dynamics and cocoa production trajectories from a production networks perspective. This chapter focuses upon a territorial-based analysis of the complex interactions that have consequences for the competitive pressure on local actors to participate in the lead firm production networks. The increased dominance of transnational firms on the growing regional cocoa industry is effectively reshaping new patterns of uneven development. Applying an actor-based analysis, the GPN approach highlights the role of the lead firms as important strategic actors shaping regional transformation. GPN scholars Coe at al. (2004: 469) define regional development within the globalising economy as follows:

[R]egional development is conceptualised as a dynamic outcome of the complex interaction between territorialised relational networks and GPNs within the context of changing regional governance structures.

Moving away from the GCC-GVC industrial focus on how regional clusters are incorporated into production systems, the GPN approach introduces a multi-scalar analytical nexus of dynamic 'strategic coupling' into global production networks that are often mediated by a range of extra-firm actors including the state. While this does not necessarily result in positive development outcomes, strategic coupling offers the potential to stimulate the processes of value creation, enhancement and capture that can eventually contribute to regional development (Coe et al., 2004). Pursuant to the emerging sustainability initiatives of the strategic lead actors engaged in restructuring upstream production networks and reshaping regional transformation, in the following sections I discuss the trajectories of strategic coupling and processes of value capture within upstream cocoa production networks. Considering their importance from an historical perspective, I briefly contextualise these developments within the ongoing regional development dynamics in the Sulawesi region.

8.1 Making Sulawesi a supply-based region

Cocoa sector development across Indonesia occurred in the post-independence era as a result of economic opportunities related to informal accessible markets and the spontaneous actions of smallholder farmers (Ruf and Lancon, 2004). The adoption of cocoa farming by smallholder farmers in Northeast Kalimantan in the 1980s was dominated by local migrants in the region and by middlemen – some of whom were smugglers - who connected the farmers to the market in Tawau (Malaysia). But this spontaneous cocoa farming adoption had limited capacity to drive resource-based development at a significant scale and to contribute to the creation of regional assets. This was partly due to the uncertainty variously driven by risk of pest infestation, market access and labour supply.

Following a similar pattern of spontaneous cocoa adoption, the Sulawesi cocoa boom in the 1980s and 1990s rapidly increased the scale of cocoa production in the region. Local migration within this less-populated region brought abundant labour to convert the forest into cocoa farming through relational knowledge exchange networks among the *Bugis* ethnic groups. The social networks among the *Bugis* groups delivered extension support that encouraged the adoption of cocoa farming

production including agro-input supplying and cocoa bean marketing. The migrant farmers with small amounts of capital obtained cheap forest land from local owners and transformed it into cocoa farms. With limited government intervention, relatively open markets facilitated the growth of upstream collecting/trading segments. Local actors were either directly exporting to nearby markets (Singapore and Malaysia) or simply supplying the domestic and international exporters. The rapid increase in cocoa farm production and strong global market demand became regional assets that attracted a range of trading actors to participate in the Sulawesi upstream market. Included among these actors were international trading firms, despite the lower quality of bulk unfermented bean compared to that of West African cocoa.

Since the early 2000s, external support from importer countries like the US, often in the form of project-based sustainability programs, attempted to further strengthen the supply capacity of the cocoa- producing regions. Applying value chain interventions and using market incentives, the sustainability projects even more explicitly integrated the smallholder farmers into the global cocoa production networks. As an initial step towards directly enrolling the smallholder farmers in the global trading network, the programs appear to have improved the local actors' global market possibilities. But, the programs had limited capacity to restore cocoa farm yields (Henriksen et al., 2010), minimise environmental risks, and ensure broader rural development.

Following the establishment of a competitive upstream market, but within a still struggling small-scale domestic processing sector, the government introduced a roadmap for the development of an industrial cocoa cluster in 2009 (Ministry of Industry, 2010). This was followed by a series of industrial policy interventions (see discussion in Chapter 6) that aimed to ensure domestic supply of cocoa beans for industry. At the same time, Mars (later followed by other branded chocolate firms) publicly committed to sourcing sustainable cocoa by 2020. The ongoing implications of these translocal dynamics contributed to a restructuring of Indonesia's cocoa production networks that are constantly reshaping regional industrial development in the Sulawesi region.

8.2 Introducing strategic coupling practices

As previously discussed in Chapter six, the government was open to inviting foreign direct investment in the sector. It was considered necessary to engage with global market networks by helping the domestic firms to access global production networks. The government recognised that a key mechanism for driving economic development was to plug domestic firms into the GPNs. As Dicken (2011: 448) argues, due to the dominant role of the lead firms in organising global production activities, it is difficult for local firms/economies to prosper outside of these networks. In response to the lack of competitiveness of the domestic cocoa industry, the coupling process via global firm investment aimed to ensure value capture within Indonesia and to facilitate significant skill improvement and technology transfer.

The early coupling process was dominated by the international trading firms, when the Indonesian government favoured resource-based exports with limited development of the downstream cocoa sector. The year 2006 saw the initiation of a policy attempt to retain the economic value of downstream development. But the policy incentives were inadequate to significantly drive the development of the downstream cocoa sector. Subsequent policy incentives repeated this approach and enacted a response primarily from transnational firms, but not necessarily from the domestic

firms. These trajectories of policy incentives appear to confirm Yeung's (2009: p.3) argument that government policy interventions to facilitate structural coupling and drive development, while necessary, remain insufficient to promote regional development.

Mars' investment in cocoa processing facilities in 1996 was driven by regional supply capacity, as the Sulawesi region contributed approximately seventy per cent of national production. Olam's investment was driven by the economic scale and favourable trading policy for various high value export commodities including cocoa. After recognising that the trading segment was dominated by local actors who had established both economic and social relationships with the smallholder farmers, both Mars and Olam were the first major buyers who applied a direct cocoa sourcing strategy to smallholder farmers. However, the presence of the transnational firms eventually proved a challenge for the local actors involved in both cocoa processing and trading segments. Hampered by limited capabilities and poor competitiveness, the local actors struggled to plug-in to the lead firms' production networks and improve their competitiveness to participate in globalisation.

In 2009, the Indonesian government introduced a five-year roadmap for agroindustry cluster development, including development of cocoa as ratified into Ministry of Industry regulation no. 113/M-IND/PER/10/2009. The primary goal of the roadmap was to develop a regional industrial cluster and transform Indonesia from a cocoa bean exporter into a cocoa products exporter (Ministry of Industry, 2010). This was followed by the introduction of a progressive export tax for cocoa beans in 2010 which substantially increased new investment in the cocoa-processing segment (see discussion in Chapter 6). The implications of export restriction not only increased the domestic processors' operational capacity, but also increased foreign direct investment by transnational firms. The latter established cocoa processing facilities both on Java Island and in various regions including Sulawesi (see Figure 6.2). Among these investments, Barry Callebaut invested in a new cocoaprocessing facility through a joint venture with local actor Comextra Majora trading after acquiring Petrafood processing facilities in West Java. Cargill and Olam, which were both originally established as trading firms, functionally upgraded into cocoa processing and consequently became vertically integrated. During this period of domestic restructuring of the cocoa production networks, only one small-scale national firm, i.e., Kalla Kakao industry established a cocoa- processing facility in Southeast Sulawesi. Six new investments were established by transnational processors, such that transnational processing capacity quickly exceeded domestically-owned capacity. Today, the Indonesian processing segment is dominated by a few transnational firms with large processing capacity. The domestic processors remain small-scale and unable to expand their economic scale and scope of production.

Among the domestic cocoa- processing firms, only BT Cocoa, which had a significant economic scale of production, upgraded its processing facility in 2013 - following a long-term market contract with Nestlé⁹² - to supply a new beverage factory in West Java. Recognising BT Cocoa's supply capacity, the market contract was followed by an agreement to implement a cocoa sustainability initiative.

⁹² Nestlé asked BT Cocoa to supply cocoa products after partnering in implementing a cocoa sustainability initiative in Mamuju, West Sulawesi, published on 2 August 2013. http://industri.kontan.co.id/news/nestle-minta-bt-cocoa-memasok-bubuk-cokelat/

Following this agreement, BT Cocoa functionally downgraded its operation and opened cocoa buying stations across Sulawesi (in Makassar, Mamuju, Palu, and Kolaka). It subsequently commenced the implementation of a sustainability initiative (BT Care) in Mamuju and Bali. For BT Cocoa, entering into a market contract with Nestlé was a milestone, despite the fact that the volume of the contract was still far below BT Cocoa's supply capacity. Nestlé's plan to relocate its Malaysia and Philippines factories to Indonesia provided an opportunity for BT Cocoa to obtain a larger volume of market contract⁹³. The move into the trading function required direct engagement with the smallholder farmers. This value capture trajectory shows that a firm's engagement in value capturing activities does not necessarily follow a deterministic upgrading path.

For the original trading firms like Olam, the industrial policy reduced the opportunities for value capture from the trading function alone. However, due to its economic scale and supply capability, Olam was able to obtain a long-term supply contract with Mars, which had recently increased its cocoa processing capacity and added integrated functions (e.g., cocoa processing and farm plantation) to become a vertically integrated firm. Olam's capacity to manage both horizontal and vertical pressure was not easily emulated by the small-scale domestic firms. For example, the implications of the export levy were to downgrade the status of the domestic exporters to domestic suppliers and function as collectors. Also, increasing vertical market barriers such as third party certification schemes put competitive pressure on the local trading/collecting actors, who now had to compete with the strong and competent transnational trading-processing firms. Among the domestic trading actors, only Comextra Majora was able to secure a supply position after its joint venture with Barry Callebaut which was in turn a supplier to Nestlé and Mondelēz.

The small economic scale of cocoa processing - and limited capacity to engage with additional functions - has put competitive pressure on domestic actors from both the processing and trading segments to supply the leading branded manufacturers. The increasing engagement of lead firms in sustainability discourses has increased the vertical pressure for intermediate actors to directly engage with the smallholder farmers. This functional upgrading (and downgrading) has not only required capital investment, but has also become the subject of competitive pressure among the concentrated global vertically integrated suppliers.

Domestic branded lead firms such as Garuda Food preferred to enter long- term outsourcing contracts with Barry Callebaut⁹⁴ rather than with local cocoa processors. This supply agreement

⁹⁴ Garuda Food and Barry Callebaut signed a long-term chocolate outsourcing agreement and the delivery of an important part of Garuda Food's compound chocolate requirements, published on 16 June 2015. [Retrieved on April, 2017] https://www.barry-callebaut.com/news/2015/06/garudafood-and-barry-callebaut-enter-long-term-supply-agreement-indonesia

⁹³ Nestlé plans to relocate its factories in Malaysia and the Philippines in Indonesia, published on 20 June 2010, http://industri.kontan.co.id/news/nestle-bakal-relokasi-pabrik-ke-indonesia-1

extended from joint innovation on chocolate research and development⁹⁵ to supporting Garuda Food's strategic growth in the domestic market after their recent expansion in China and India. Following in the footsteps of Nestlé and Petrafood, Garuda Food acknowledged that the presence of Barry Callebaut would enhance Garuda Food's core competences particularly in designing future product and brand development. From this strategic partnership, Garuda Food, as a branded manufacturer, was able to direct the global industrial chocolate producers to establish new investments near their manufacturing plants, thereby externalising their chocolate production and transferring research costs back to Barry Callebaut. This reified intermediate position (particularly in Indonesia's domestic production networks) among their peers, in addition to seeking more value capture from future domestic market growth and more broadly from the emerging Asian countries.

Lack of local actor competitiveness encouraged the Indonesian government to continue paving the way for strategic coupling with the global cocoa production networks. Since the early development of the cocoa sector, the government had invited international export-import firms to increase their local (trading) actor market accessibility but not necessarily their competitive capability. A similar pattern of structural coupling that was applied to drive the development of the Indonesian cocoa industry resulted in a temporary improvement in the domestic processors' competitive capability which, by extension, slowly increased their production capacity. However, whereas this effort interplayed with the vertical pressure of the lead firms' sustainability commitment and dynamic configuration of the global cocoa production networks, the intermediate segments (tradingprocessing) became vertically integrated and concentrated among a few transnational firms. As this structure extended to Indonesia's cocoa production networks, the domestic processors again found themselves facing competitive challenges including vertical barriers imposed by lead firms and horizontal barriers of capitalist capabilities (e.g., integrated functions and low cost production) exerted by the transnational trading-processing firms. As a result, the model of 'outside-in' coupling strategy implemented through industrial and trading policies proved inadequate to horizontally improve the domestic actors' capitalist competitiveness and participation in the global cocoa production network.

8.3 Local coupling and (uneven) regional development

As the early development pattern demonstrated, the growth of cocoa production in the Sulawesi region was economically driven and spontaneous, allowing value capture from its trading function, and confirming Sulawesi as a supply-based region. In tandem with the current downstream cocoa development, the region's supply base asset has become the economic rationale for the domestic and transnational firms to establish and expand their cocoa processing facilities (see Figure 6.2). A combination of supply base assets and the current establishment of processing facilities has upgraded Sulawesi into a vertically integrated cocoa region. Coe et al. (2004) argue that the important dimension of development is the extent to which value capture occurs in the context of the firm's capability to retain surplus within its organisation boundaries, and ideally to further redeploy this within the region. Focus on the regional development in Sulawesi, the recent

⁹⁵ Expansion of chocolate factory, in addition to cocoa processing facilities in Bandung and Makassar, published on 5 October 2016. [Retrieved on April, 2017] https://www.barry-callebaut.com/news/2016/10/barry-callebaut-celebrates-grand-opening-its-first-chocolate-factory-indonesia

development has shown dominant role of the transnational actors to sustain supply base function and vertically-integrated to processing function. Yet, such development recognised limited investment of the local economic actors to capture the value creation and retain the surplus within its organisation boundaries, as the investment dominated by transnational firms. This make Sulawesi economic development is dependent to the investment and presence of transnational firms, and dislocation of investment may occur once the regional assets deteriorated.

Reflecting on the GPN perspective, the term 'regional development' refers to the dynamic aggregate effects of the value capturing trajectories of a range of firms located in a specific territory. Regarding the discussion surrounding lead firm sustainability strategies and the government response to increasing upstream market intervention, the outcomes of these intersections are further linked to development of the Sulawesi region. In the following sections I discuss the aggregate effects of value capture as translated into development impacts at the local and regional levels. Coe and Yeung (2015) allude to the four indicators of the global production networks impact on the intersection of the configuration of production networks and supply- based assets: 1) Capital flows; 2) Organisational ecology; 3) Knowledge and technology transfer; and, 4) Employment effect.

8.3.1 Capital flows

In an attempt to strengthen Sulawesi's supply-based capacity, capital investment was delivered via different forms of program partnerships and the establishment of upcountry buying units. A comparison of Mars' and Nestlé' investment in sustainability initiatives shows that Mars' investment in developing the in-house CDC-CVC model involved intensive capital inflows crucial to establishing development centres and to financing CVC farming businesses. Nestlé's investment in defining and implementing sustainability initiatives was more limited and primarily involved negotiating with the contract suppliers. The capital flows within the context of implementing sustainability initiatives were highly dependent on the extent of each lead firm's attempt to strengthen and improve its role in upstream cocoa production.

Mars' establishment of a cocoa processing subsidiary in the Sulawesi region was driven by a combination of exploring the value capture from high value grounded research on exploring novel credentials of the cocoa bean (flavanols), and ensuring the supply capacity of the region. The company's investment was not simply undertaken to encourage and incentivise the adoption of a third-party certification scheme, but also to develop an extension model as an instrument to encourage an integrated cocoa farming business. This model of sustainability was also extended to the contract suppliers (in addition to adopting certification schemes) to achieve the spatial scale impact of cocoa development.

Mars' concept of a franchise CDC-CVC extension model has been enacted to its contract suppliers and program partners. The company's Cocoa Development Centre in East Luwu District has grown in terms of scale and scope of services. Mars' curriculum on agronomic training and internship have been adapted and developed for other formal education institutions including agriculture vocational schools and local universities. The recent new cocoa development centre investment in the Pangkep District of South Sulawesi showcases the importance of economic scale in promoting and delivering

cocoa extension services⁹⁶, and is supported by the provincial government. The capital flows directed towards the CVC farming business came in the forms of individual investment and/or obtaining financial support from formal micro-finance institutions. Capital investment within the cocoa production networks primarily aimed to enhance the value of the farming businesses and to further improve the supply capacity of the Sulawesi region.

Within the context of implementing a certification scheme, the capital flows of financial incentives were voluntarily provided by the lead firms under a supply market contract to further reinvest in the contract suppliers' sustainability activities that involved a range of extension services. Along with the implementation of the schemes, the incentive was internalised to support the sustainability team, to transform it into extension services for the smallholder farmers. But because the main adopters of the certification schemes were the contract suppliers, the value capture for the smallholder farmers in terms of distribution of premium incentives and delivery of extension services depended on the supplier. Due to the volume-based incentive, the contract suppliers tended towards compromising the quality of the extension services' efficiency. For example, while the certified contract suppliers tended towards reducing the number of certificate holders, they increased the market contract volume to enhance the value of the sustainable market (see Table 5.1). However, managing the large volume of market contracts challenged the local actors' capability (cooperatives and farmer groups) as the sizable contracts were often obtained by the transnational firms' subsidiaries (for example, Olam and Ecom).

Studies of China's industrial sectors argue that FDI does not necessarily translate into positive outcomes for the local economy. Foreign research development laboratories have limited intention of collaborating with local firms, academics and research institutions (Fu, 2011). Foreign investment in the design and implementation of firms' sustainability initiatives is not limited to compliance with certification standards. It involves knowledge and technology generation from which the industrial actors are often otherwise disconnected. Buoyed by the financial support of the North-based countries, and with the aim of encouraging sustainable market and farming practices through public private partnership programs, Mars also independently finances adapted field research centres and the in-house CDC-CVC business extension model. Since 2005, the early development of Mars research development centre and CVC farming businesses involved a range of collaborations with national and international cocoa stakeholders. But these collaborations only strengthened Mars' capacity to extend its upstream research and development without necessarily exploring the interchains opportunities for farmers to minimise the vulnerability of single sector oriented development. The private finance and independent research centres established across the Sulawesi region position Mars - along with its supply partners - as knowledge and technology creators. Although these capital flows in the development of the cocoa sector may benefit those cocoa farmers who have the capacity to develop their farming businesses, this supply linkage also supports Mars'

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⁹⁶ New investment of four million US\$ for a cocoa development centre in Pangkep District, three times the cost of the existing development centre in East Luwu, South Sulawesi, published on 19 August 2016. http://makassar.antaranews.com/berita/76814/mars-investasi-jutaan-dollar-bangun-pusat-penelitian-kakao

production system, adding competitive pressure on the local firms (collectors, traders and processors).

The value capture of lead firm capital investment in sustainability initiatives is mainly distributed among the transnational contract suppliers and capitalist farmers. While the industrial policy has attempted to protect the local actors, it has not necessarily initiated efficient linkages or minimised the capitalist capability-technological gap between the national and international firms. With the currently limited participation of local traders and processors in capturing value from the lead firms' sustainability initiatives, the local government's limited capacity to facilitate a coupling process via joint capitalist investment and regulatory incentives works to widen the technological gap. This means that eventually the inefficient and non-competitive local firms will be excluded from the lead firm production networks. As the value creation from the emerging sustainability initiatives has mainly been captured by the transnational contract suppliers, eventually the Indonesian downstream and upstream cocoa production networks will be concentrated among a few transnational firms.

8.3.2 Organisational ecology

Following the fragmented upstream supply and increased concentration of two downstream segments, the branded chocolate manufacturers and vertically integrated cocoa processing-trading firms are employing various sustainability initiatives. The lead branded firms are reorganising their production networks by disintegrating their cocoa processing facilities and increasing their vertical coordination with the contract suppliers. This allows them to effectively compete in the oligopolistic global market structure. Yeung (2009: 331) refers to this reorganising for more efficient and flexible production networks as an 'organisational fix'. Yeung further argues that whereas organisational fixes result from the choice of business strategies, investment and divestment in specific regions depend on the regions' capacity to complement the lead firms' needs (in the form of lower production costs, for example). The disruption of a production system due to increased labour costs and increased taxes may lead to what is known as a *spatial fix*, reflecting the ongoing phenomenon of foreign firms' increasing investment in cocoa-producing countries, but reducing their investment in the North based consuming countries.

For more than three decades, the regional cocoa production networks in the Sulawesi region were dominated (1) by trading actors with a range of economic scale and geographic distribution, and (2) by the presence of small-scale domestic cocoa processors. After the cocoa sector became a priority sector for a downstream development strategy, the government introduced an export tariff that significantly increased the costs of international trading. Although this industrial policy attempted to strengthen the local industrial actors' capacity, the policy trajectory – and its resultant *spatial fix* - interplayed with the lead firms' economic interest in ensuring supply security and was followed by restructuring of Indonesia's cocoa production networks. This spatial fix, which was followed by an organisational fix, increased the vertical competitive pressure on the local actors to participate in the lead firm production networks. And, it further emphasized the substantial role of the transnational firms in defining the future development of the Sulawesi region, as will be further discussed in the following section.

The recent downstream development in Sulawesi has been supported by two transnational firms -Barry Callebaut and the Transmar group - which have made new investments in cocoa processing facilities. However, nation-wide Barry Callebaut has also made multiple new investments. These include its acquisition of Petrafoods, a joint venture with local trading firm Comextra Majora, and its establishment of a new industrial chocolate factory after entering a strategic partnership with Garudafoods. Meanwhile, the existing Cargill and Olam trading firms incorporated new functions including cocoa processing into their trading operation, with Cargill preferring to construct a new processing facility in East Java rather than in Sulawesi, mainly because of the established industrial cluster and better quality infrastructure. Olam preferred to establish a vertically integrated cocoa production and processing facility on Seram Island, Maluku province. This decision was mainly based on the low labour cost of managing a cocoa plantation and the abundant land, despite the limited infrastructure established. Mars recently increased its processing capacity, and this expansion was followed by new CDC investments across the Sulawesi region. Among the new investments in cocoa processing, only the locally-owned firm Kalla Kakao (of the Kalla group) established a new processing facility in Southeast Sulawesi (in Kolaka). This investment was followed by the signing of collaboration agreements to implement extension services with a local NGO to assist nearby farmers to undertake product and process upgrading. Despite the different strategies employed for the purposes of new investment and expansion, these transnational firms have shown the importance of capitalist competitiveness in terms of adapting to ever-changing policies and responding to increased market barriers, responses that are not easily replicated by the local firms.

The growing investment in the cocoa industry within this stagnant supply production period has been supported by sustainability initiatives. The initiatives have become an instrument to enable the transnational actors to increase vertical coordination with the supply- based actors to further ensure supply for new investments. The state responded with policies that strengthened the position of transnational subsidiaries, leading to an increasingly concentrated processing sector that marginalised the smaller-scale local processors. Reflecting on the discussion in Chapter 6, this trajectory of production network restructuring has been seen as a threat rather than as an opportunity to support regional development. The interplay of trans-local challenges and economic interest in capturing value from the growing cocoa industry resulted in coordinated efforts among the competitive supply chain actors and lead firms to introduce sustainability initiatives. For the disintegrated lead firms (Nestlé and Mondelēz), the role of contract suppliers is crucial as a means to implement 'arms-length' sustainability initiatives. For example, Barry Callebaut, one of Nestlé's contract suppliers, is adopting a certification scheme via a collaboration with 'arms-length' traders in Polewali Mandar (see Figure 8.1), and BT Cocoa is participating in a sustainability initiative in Mamuju via a Sustainable Cocoa Production Program (SCPP) implemented by Swisscontact (see discussion 5.3.3 in Chapter 5).

For the Mars' subsidiary, the contract supplier roles are a combination of 'arms-length' and upscaling of sustainability initiatives. The subsidiary exercises decentralised control over the establishment and coordination of these initiatives. Becoming a part of Mars' production network is followed by a supply quota of certified cocoa and agreement to establish a CDC-CVC to gain economic scale and impact of sustainability outputs. For example, Olam's subsidiary established a CDC-CVC in Kolaka District and Ecom subsidiary in Polewali Mandar District (see Figure 8.1).

Although this additional function of delivering sustainable extension services may have provided mutual benefit by sharing resources to ensure supply security, the decentralised CDC-CVC system maintains Mars' key position in creating value from transferring upstream knowledge and technologies.

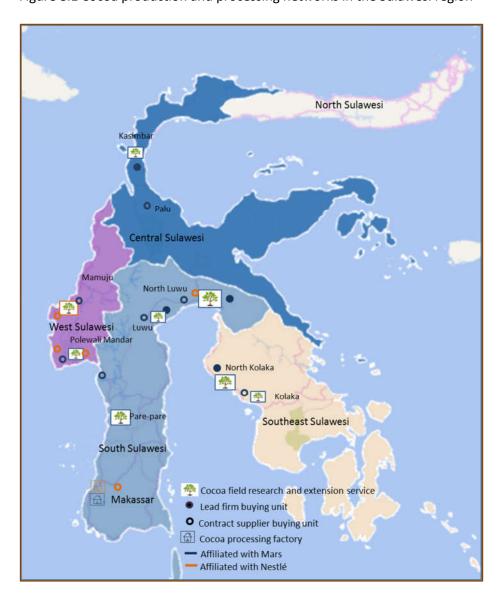


Figure 8.1 Cocoa production and processing networks in the Sulawesi region

Looking at the lead firms' role in the reorganisation of the cocoa production networks, the emerging sustainability initiatives have coupled the Sulawesi region with the global production networks. But this has not necessarily been followed by the enrolment of the local firms. The supply capacity of the region has complemented the lead firms' need to create and enhance economic value from the growing Asian market. Under the sustainability initiatives, the global firms orchestrated a coordinated production network that connected smallholding farm production with large-scale processing performed by contract suppliers. Reorganisation of the upstream cocoa production networks by Mars and Nestlé aimed to improve the firms' capitalist competitiveness through more efficient and flexible forms of upstream production networks previously performed by less efficient

and more diverse local actors. With the increasing role of the global firms in organising Sulawesi's cocoa production networks, regional development's fate became more dependent on firm strategic decisions and commercial practices.

8.3.3 Knowledge and technology transfer

Harvey (1989, cited in Yeung 2009: 331) notes that firms are continuously seeking new competitive advantages such as advanced technologies and communication systems as part of the dynamics of the capitalist accumulation process, a phenomenon referring to *time-space compression*. This competitive pressure concept has increased the demand for a time-to-market (Schoenberger, 2000 and Sheppard, 2002 cited in Yeung 2009), a critical instrument in obtaining technological advances that will support the firms to win market shares. Within the cocoa-chocolate industries, seeking new frontiers of competitive advantage is also part of the strategic development for cocoa-chocolate processors. It results in a *turn-key* relationship which Fold (2002) refer to as bi-polar. For example, Fold (2002) claims that the processors' investment in the automatic processing of large volumes of cocoa led to a more efficient production system and an improved logistical system after replacing sacks with the containerisation of bulk bean trading. Although the improved capability of supply partners to complement the lead firms' core competences resulted in their vertical disintegration, the lead firms continue to increase the *vertical specialization* that is currently a feature of upstream cocoa production and research.

The global production networks concept emphasizes the importance of knowledge and technology transfer in retaining value creation and enhancement. Innovation amongst Indonesia's industrial and upstream production, however, was scarcely created by the domestic actors. The quasi-state research institutions' capability to deliver new frontier innovations are highly dependent upon government support. The ongoing domestic development of the cocoa industry, and the emerging lead firms' sustainability initiatives indicate the distribution of value creation in the cocoa processing and farm-level production networks. The value creation from the cocoa processing segment has been established by most of the transnational firms as part of a long-term strategy to sustain and increase economic rent via increases in the economic scale and scope of the production system. This established value creation and enhancing of the cocoa and chocolate industries is not easily replicated and adopted by domestic production networks. As previously suggested, the development and rapid diffusion of knowledge has emphasised the importance of local policy networks of public and private actors to drive local innovation rather than being simply the result of incidental synergies in the industrial cluster or atmosphere (Scott, 1996 cited in Humphrey and Schimtz, 2002). The current industrial policy that aims to bridge the technology gap, for example zero tax on importing agro-industry (including cocoa) machinery, remains temporarily to incentivise the processing actors to improve their competitiveness.

The knowledge creation and technology improvements embedded in sustainability initiatives to sustain cocoa farm production have broadened the industrial actors' domain to the extent of delivering extension services to the scattered smallholder farmers. The sustaining of Sulawesi's supply based assets is closely related to smallholder supplying capability and the efficient upstream production networks that define a region's ability to continue coupling in the global cocoa production networks. Although the Indonesian government has tried to improve and strengthen this regional asset, its institutional capacity to produce and deliver farming technology through national

programs and policies has been limited due to weak coordination and limited resources among the affiliated agencies (see discussion in Chapter 6). Traditionally, the government affiliated research and extension institutions are responsible for producing knowledge and delivering extension services. But, the complex structure and political dynamics have affected the agencies' capacity, evident in the failure of the *Gernas* program. Despite the resource-based milieu of the Sulawesi region, the lack of institutional thickness to effectively facilitate knowledge creation (Amin and Thrift, 1994) has motivated the transnational firms to deliver extension services instead.

Having experienced the national government's reluctance to engage in public private partnership since the early introduction of the Gernas program in 2008 (see discussion, section 6.3, Chapter 6), Mars developed an adapted farming business extension model instead of depending on government programs. The concept of CDC-CVC aims to capture value from an improved and integrated farming system (see Chapter 7). In effect, Mars filled the gap in the limited traditional state agencies' roles in generating cocoa farming knowledge and delivering extension services to the smallholder farmers and, more broadly, to the cocoa stakeholders. The concerns associated with this role was accessibility and capability, because of the vertically coordinated nature (see my discussion of farmlevel upgrading in Chapter 7) of the upgrading process. The transfer of technologies (efficient agrochemical and high yield pest resistant varieties) is restricted to those farmers who participate in Mars' sustainability initiative. As the market contract is bound to the capability to establish a CDC-CVC, it is unlikely that the (uncompetitive) capitalist local actors will upgrade their commercial relationships by adopting functional extension services. Thus, the supplying role will be concentrated among few capitalist transnational firms. This limitation also extends within the context of the certification schemes, wherein the transfer of technology is mainly extended to (better-off) certified farmers who own more productive farms than their smallholder counterparts who tend to own less productive damaged farms.

Mars' participation in upstream cocoa development has expanded its vertical specialisation in both the upstream and downstream production networks. This has affected the learning and knowledge transfer trajectories previously provided by the government and international development agencies, and reorganised the production networks. The value creation of sustainability initiatives has centred on the lead firm (Mars) capability to not only transfer knowledge and technology, but also to produce the adapted knowledge and technology that has eventually undermined the government's traditional role. Although lead firm sustainability implementation in the Sulawesi context has created upstream value via an integrated farming and extension business, the focus of this technological learning and transfer is at the base of the production network, which is dominated by low-skilled labour intensive activities rather than on strengthening the domestic cocoa industry. The supply partner's ability to support and complement the lead firms' sustainability initiatives has led to a learning process primarily captured by the transnational (trading-processing) suppliers. The government's industrial policy proved inadequate to strengthen the domestic firms' capitalist capability and to limit the lead firms' and contract suppliers' trading services. The subsequent intensification of the various sustainability-affiliated extension services excluded the domestic processing-trading actors from participating in the lead firm global production networks.

8.3.4 (Rural) employment

The establishment of different forms of sustainability initiatives was followed by the recruitment of private extension service agents previously organised by the government, and project- based sustainability programs. Since the early value chain interventions in the 2000s (see Chapter 5), the trajectories of the project- based sustainability initiatives have introduced the concept of private extension service agents with the specific role of sustaining the cocoa sector. However, these services tended to have limited scaling-up and timeframes due to the nature of the project-based programs. Following the emergence of sustainability initiatives, the concept of private extension services became more prominent and acceptable among the rural communities. Working for a private firm was seen as a respected and stable employment opportunity.

Within the Sulawesi rural region, employment creation in the resource-based sectors, for example in agriculture and mining, tended to show slow development progress partly due to its dependency on the national program and revenue shared. Nearly two decades of decentralisation has had limited impact on improving the local institutional capability to drive rural development and sectoral development (Brodjonegoro and Asanuma, 2000; Firman, 2009). The implementation of national programs (e.g., the *Gernas* kakao program) that were also project-based was followed by the recruitment of temporary fresh graduate extension agents rather than integrating the program into the local extension agency structure.

Due to the uncertainty surrounding the government program, and the limited capacity of the local institutions to sustain the public extension service under sustainability initiatives, the transnational lead firms and contract suppliers are establishing their own extension service agents. The combination of social and economic interest behind the initiatives has gained the interest of other institutions and organisations in collaborating with and supporting these private extension services. This growing adoption of the Mars' CDC-CVC extension model has signalled a long-term commitment to rural employment that was previously temporary under the project-based contract. The contract suppliers' growing adoption of a range of sustainability initiatives has extended the demand for employment extension services in most of the cocoa producing regions.

Mars efforts to upgrade traditional cocoa farming into modern farming businesses - as manifested in CVC farming business - suggest a transformation of social class and rural landscape from smallholding into capitalist farming business. This phenomenon is not necessarily new within the Sulawesi context. Li (2014), comments on the process of capitalist accumulation and dispossession among the Lauje highlanders, Central Sulawesi. Li (2015) further writes that after centuries of growing food crops, the famers have shifted to mono-crop cocoa production because the highland was too poor for intensive food production. Growing cocoa shifted from 'a choice to compulsory'. The highlanders had to transform their land into private property, and were obliged to produce efficiently. The prevailing land conditions and cocoa farming challenges have polarised the highlanders into two classes, the 'haves and the have nots' (Li, 2015).

Linking to Mars' functional upgrading, the CVC, as a coordinated cocoa farming business, has emphasized intensive capitalist investment in restoring the cocoa farming business. Chapter 7 shows the importance of capitalist investment to obtain functional upgrading and seeks pragmatic economic opportunities from the poorly coordinated state institutions. This concept of a profitable

farming business required start-up investment from a credit system followed by accumulation of single sector farming services and productive assets (land, farms, and capital). The focus of most of the assisted farmers who have established their cocoa farming businesses was on the accumulation of productive assets, a goal clearly articulated by an assisted farmer from East Luwu (Pye-Smith, 2011: 21):

Take for example, the story of Muh Syarif, a cocoa trader in Lera village, East Luwu regency. In 2007, he bought a hectare of abandoned cocoa farm and began grafting superior varieties onto the old trees after visiting a demonstration plot in Pongo. He is now getting over 3 tonnes per hectare and has used some of his profits to buy and rehabilitate other cocoa gardens.

The ongoing smallholder farming challenges followed by declining farm yields -to the extent of abandoning the farms – reflected to the highlanders' dilemma. Abandoning the farm led to dispossession by the capitalist farmers who tended towards accumulating productive assets and attaining a more efficient-profitable farming system albeit at the expense of the struggling smallholder farmers. Although the successful farmers managing the growing CVC farming business contributed to the local employment creation of casual farming jobs with quick access to cash, the outcome was relatively irregular and highly dependent on the farming season. The increasing numbers of capitalist farmers engaging with more capital-intensive cocoa farming, along with the uneven capitalist competition, put additional pressure on the smallholder farmers. The consequences of this intensified uneven competition led to a capitalist relationship via a dispossession and accumulation process of productive assets that further reified rural poverty.

Employment creation under the sustainability initiatives aimed to enhance cocoa production value, not only in terms of social value (producing under improved farming practices), but also economic value to ensure smallholder supply capacity for the sustainable cocoa-chocolate industries. With value creation and enhancement expected to generate from this employment, the farm level production networks concentrated on a single farming system that was dependent on the presence of the transnational firms. This single sector-oriented upstream cocoa development emphasized the industrial actors' interest in sustaining supply capacity and encouraging a capitalist farming system followed by the exclusion of the struggling smallholder farmers (those with limited capital) and the emergence of increasing numbers of capitalist farmers.

The transnational firms' dominant role in providing extension services and dictating the market system not only increased the specialisation within the global value chain, but also the power beyond the market domain. The market driven and oriented services enrolled the smallholder farmers into the global production networks, where they became subject to intensified global competition. Ultimately, the fate of the farming business was defined by the oligopolistic lead firms and their supply partners. The domestic presence of the transnational processors remained for as long as the cocoa producers were capable of meeting and complying with a stringent sourcing policy while internalising the cost of farming risks and overcoming global price volatility and an everchanging market demand.

8.4 Conclusion: Lead firm sustainability, value capturing and regional development

This study explores the incorporation of the emerging lead firms' sustainability initiatives into industrial governance and the extra-firm bargaining strategies employed to improve upstream cocoa production competitiveness. The implementation of a range of sustainability initiatives has contributed to intensifying concentration of 'bi-polar' production networks previously identified by Fold (2002), but I have also identified a need to articulate this beyond conventional industrial interfirm relationships. The industrial coordination by the lead firm chocolate manufacturers and contract supplier of cocoa-chocolate producers are increasing their control over upstream cocoa production. The recent restructuring of global production networks (see a detailed discussion in Chapter 4) shows a trend towards an outsourcing strategy applied by the lead firms after increasing their investment in the emerging market regions. The contract suppliers have increased their power in terms of becoming vertically integrated and more concentrated even than the branded lead firms. This vertically integrated function is necessary to extend the lead firms sustainability initiatives and to build direct relationships with the dispersed smallholder farmers, as the contract suppliers serve as an 'arms-length' extension of the lead firm.

Increasing global upstream intervention by the transnational industrial actors via sustainability engagement has been driven by economic concerns linked to unstable supply and social-political issues including child labour practices and political instability (Bitzer et al., 2012; Barrientos, 2013). These concerns were reflected in significant increasing global cocoa price in 2008 after political turmoil in Ivory Coast. In Indonesia, economic driven linking to declining farm productivity and growing investment of transnational firms in domestic cocoa industry, accordingly engaging in sustainability discourse is expected to overcome the supply security to sustain the recent investment. Managing these supply related risks are beyond the conventional outreach of the lead firms who had disintegrated their processing function to the contract suppliers and withdrawn from upstream cocoa production. Responding to the emerging risk environment, the lead firms have increased their engagement with sustainability discourses and built horizontal coordination with extra-firm actors - including the state - to minimise the uncertainty of political, social and environmental outcomes generated outside the production network. In addition to growing market demand, after the transnational industrial actors' increasing investment in both emerging markets and the cocoa producing countries, managing the risk environments is vital to sustaining the industries' growth and maintaining a lead position within the production networks.

Although previously this horizontal coordination took the form of lobbying that linked end market policy and regulatory incentives (Raynolds, 2003; Grant and Stocker, 2009), sustainability engagements in the forms of sustainability partnerships (such as CSP and PISAgro) have become an instrument to engage in the public space, particularly in the cocoa- producing countries. This emerging firm sustainability engagement with the horizontal extra-firm actors contributes to the debate surrounding the over-emphasis of industrial governance proposed by the proponents of the GCC-GVC framework (Gereffi, 1993; Gereffi et al., 2005). As well, it recognises the intricate relationships with the extra-firm actors (Ponte, 2014; Dicken et al., 2001; Coe et al., 2008). Exploring the lead firm engagement in sustainability discourse suggests that sustainability has become a strategic instrument to enter extra-firm bargaining strategies for minimising risk environments and capture maximum (economic) value from favourable environments. The sustainability-inflected

nuances of extra-firm bargaining strategies also identifies industrial actors as key and equal partners (Hartwich et al., 2008; Pattberg (ed.), 2012; FAO, 2016; Narrod et al., 2009) in the negotiation of policy. At the same time, the strategies implemented allow for increasing financial returns and shareholder value rather than simply addressing social injustice (Banerjee, 2008).

Integrating the sustainability notion into sourcing policy (third party certification schemes, a traceability system, and sustainability programs) has created upstream market barriers. These market barriers have driven the transnational intermediate actors, particularly the cocoa trader/processors, to engage in additional functions, most notably the delivery of extension services. The extension service in the form of scaling-up the certification schemes across the supplier partners had unclear the impact of improving farm productivity, but adoption the schemes is necessary for commercial relationship and maintaining market accessibility. While for the branded chocolate manufacturers, the schemes offer an instrument to minimise the supply risks from the oligopoly supply structure and independent verification provide legitimacy on the firm commitment to participate in sustainability discourse.

Combination of integrated market and extension service functions imply the strategic role of intermediate actors, not only in terms of economic scale of cocoa trading-processing, but also the scope of production activities that currently required to vertically coordinate with the branded manufacturers and dispersed smallholder farmers. Following major acquisitions leading to vertically integrated trading/processing firms, industrial cocoa-chocolate producers are now more globally concentrated than the branded manufacturers (see discussion in section 4.2.2 of global cocoa processors and chocolate couverture), and the lead firms are seeking means of managing the growing power of these intermediate actors. This growing power threatens to destabilise branded manufacturers lead position in the global cocoa-chocolate production networks (as argued earlier by Fold, 2002: 244-5). This study highlights increasing industrial-centred power beyond reorganisation of industrial activities, as the lead firms' sustainability initiatives have resulted in increased vertical coordination with the upstream cocoa production networks. Not only has this intensified the bipolar relationships and reduced upstream complexities, but it also minimises the spatial supply and environmental risks, and engages with the smallholder producers for more efficient supply chains.

Given that the global intermediate actors have become more competent and flexible when obtaining functional upgrading and downgrading within intra-firm control of internal production networks, the focus of sustainability initiatives in Chapter 7 shows the introduction of different forms of farm-level upgrading (e.g., product, process and functional) to the smallholder farmers and upstream actors. These initiatives have systematically invited the smallholder farmers' participation in the global production networks, in the process subjecting them to the dark side of globalisation (Kaplinsky, 2000; Kaplinsky 2005). Their participation will be sustained if the farmers maintain lower costs and more efficient cocoa farming production than farmers in other cocoa producing countries. This process of facilitating farm level capability to systematically respond to highly competitive industrial actors shows the importance of capitalist investment to producing a sustainable and stable supply of cocoa, while the voluntary volume-based incentives are mainly controlled by the concentrated transnational industrial actors. Despite the voluntary nature of the volume-based incentive, under uncertain environmental factors (e.g. changing rainfall patterns, soil degradation, increased pest disease infestation and global price volatility), the smallholder farmers are encouraged to adopt high

cost, yet apparently more efficient, farming systems (see Figure 7.1). This means that they are inevitably drawn into uneven upstream competition with the emerging assisted capitalist farmers (see discussion in section 7.2.3 of functional upgrading).

Selwyn (2011) and Tokatli (2013) claim that enabling farm-level innovation and new markets does not necessarily result in positive development outcomes due to the significant accessing gap in competencies and the concentrated business environment. The different forms of farm level upgrading introduced via sustainability initiatives suggest that economic interest prevail (the emphasis by industrial actors on improved farm productivity) rather than minimising environmental and social issues. The establishment of a traceability system and volume-based incentives aimed to minimise the supply risks encountered by the industrial actors. It showed limited interest in minimising smallholder livelihood vulnerability from the global price volatility and their dependence on a single cash crop. While increased farm production outputs (see Figure 6.1) are now evident after a few years of firm sustainability initiatives in the major producing countries (the Ivory Coast and Ghana), this has not necessarily been followed by a reduction in child labour practices (Tulane University, 2015) or compensation for farming risk generated by climate change and land degradation. Kaplinsky (2000) described the process of 'immiserising growth' whereby increasing cocoa farm outputs because of increasing yield and rural employment occur at the same time as falling economic returns because of falling global prices due to oversupply. Eventually, increased efficiency and decrease in the supply risk of cocoa farming production will sustain industrial growth. But, this could come potentially at the expense of increased farmer livelihood vulnerability and the deterioration of social aspects within rural farming communities.

Alongside with implementation of firm sustainability initiatives, the Indonesian government's attempts to develop a domestic cocoa industry after imposing a combination of trade-barriers to ensure domestic supply and industrial policies to incentivise the growing industry. This industrial policy provided a disincentive to trading actors, but was responded to by transnational trading firms through adding functions and becoming vertically integrated trading-processing. The incentive of industrial development not only affected the local trading actors, but increased large scale foreign investment in processing segment, putting competitive pressure on the small scale local processors. In addition, the increasing upstream sustainability interventions of transnational firms were followed by an increase in market barriers and upstream vertical coordination for local actors. This by extension discouraged the local actors from participating in the lead firms' production networks, as a series of industrial policies introduced to support the domestic firms' competitiveness proved temporary. In addition, the government lacked institutional capacity to strengthen the smallholders' supply capacity and drive farm-level upgrading. Eventually, this intricate trans-local intervention contributed to the restructuring of the domestic production networks.

The state's 'outside-in coupling strategy' was followed by flawed programs and weak institutional capacity, the public spending for downstream cocoa development suggests an intricate web of political-economic interests. The government remained unable to improve the competitiveness of the local industrial actors, to enable them to participate in the global cocoa production networks. On the other hand, the transnational trading firms were able to overcome the vertical and horizontal pressures and position themselves as strategic partners, in the process reifying the lead firms' commitment to delivering sustainability initiatives. The capitalist capacity of the transnational

trading-processing firms, which was inherent in their economic scale and their capacity to complement the lead firms, was not easily emulated by the local firms. This government coupling strategy via the industrial policies alone has been insufficient to drive the competitiveness of local firms. The limited competitiveness of local firms is slowly excluding them from the global cocoa production networks.

From a territorial perspective, it remains pre-emptive to determine the extent of positive development impacts for Sulawesi as a result of coupling with the global production network, considering that it has only been approximately five years of sporadic implementation of the sustainability initiatives. Although the ongoing value capture of farming technology and coordinated cocoa production suggests increasing investment by transnational firms, the voluntary adoption of the recommended technology is highly dependent on the smallholder farmers' livelihood strategy and level of dependence on cocoa farming to support their livelihood. However, the upstream research investment by transnational firms to strengthen regional supply assets is creating a dependent relationship, as the region become more dependent on the presence of the transnational firms. This development outcome shows that the combination of industrial policies and initiatives designed to attract foreign direct investment suggested by GVC proponents (Gereffi, 1995 cited by Talbot, 2002:708) has proven inadequate to strengthen the regional assets. The limited competitive capabilities of the local actors were unable to drive the growing cocoa industry, and the weak institutional capacity to deliver extension services has been replaced by the transnational firms. Thus, the region's plugging-into the global production networks has not necessarily been followed by equal distribution of the economic gain that has accrued from the upgraded economic activities (Ponte, 2002; Blowfield, 2003; Talbot, 2002; Arnold and Pickles, 2011; Milberg and Winkler, 2011; Barrientos et al., 2011). The transnational industrial actors' gain through the economic scale and scope of production, but this has been at the expense of the cheaper productive capital supplied by the smallholder farmers that is creating new processes of uneven development.

The firms' sustainability engagements have been observed to increasingly interact with a variety of extra-firm actors, including the state, NGOs, certification agencies and international development organisations. This engagement in the Indonesian cocoa sector suggests a need to rethink value chain governance away from the overemphasis on industrial governance, as evident in the previous value chain studies that suggested overly fetishizing upgrading with positive development outcomes in the agrofood sector (Barrientos et al., 2010; Selwyn, 2013; Milberg and Winkler, 2011). The increasing participation of the transnational firms in upstream cocoa development has attempted to capture value from the supply security delivered by the smallholder farmers. However, the value creation under sustainability initiatives through farm level upgrading suggests a stronger economic interest of industrial actors to minimise supply risks and increase their vertical coordination (or control) of the dispersed smallholder farmers. Regarding Mars' value capture trajectories, their concept to restore profitability of the cocoa farming business highlighted the capitalists' ability to shift to high input farming and to accumulate productive assets as a long-term strategy to maintain their efficient and profitable farming businesses. This capital accumulation process, encouraged by the implementation of sustainability initiatives, is eventually leading to the capital dispossession of the less competitive smallholder farmers, a process previously observed by Li (2014, 2015), creating widening social gap and deepening rural poverty. The emerging sustainability initiatives have,

however, created rural employment for the delivery of agronomic services. But, this employment has been highly dependent upon the presence and strategic development of the transnational leading firms.

The lead firm sustainability engagement systematically encouraged smallholder farmers' participation in the global production networks, in the process subjecting them to the intense competitive pressure of globalisation (Kaplinsky, 2000; Kaplinsky 2005). Their participation in the emerging firm sustainability initiatives were based primarily on the economic interests of industrial actors to minimising their upstream supply risks. To sustain this participation depended on the capability to maintain low cost-efficient cocoa farming production. This has meant that integrating the sustainability notion into business practices, initiated by the branded chocolate manufacturers, has led to increasing market barriers and a dependence on global firms. This further implies the importance of capitalist competitiveness to complement the industrial actors' strategy of development. The fortune of the Sulawesi region's coupling with the global production networks shows that the value capturing and retaining for regional development has been dominated by the transnational firms. The reality is that the regional supply assets have become dependent on the presence of the transnational firms. The weak institutional capacity to deliver extension services has resulted in the function being overtaken by the transnational firms. The local actors limited capitalist capability has disqualified their participation in the growing cocoa industry. The development trajectories of the region's plugging-into the global cocoa production networks have not been followed by equal distribution of the economic gain realised from the upgraded economic activities. While the transnational industrial actors' participation in sustainability discourse has gained capitalist competitiveness, it has come at the expense of cheaper productive capital supplied by the smallholder farmers, an outcome leading to future uneven development.

This study has shown the dynamic restructure of global-local cocoa production networks, as the lead transnational firms played dominant role to reconfiguring the economic governance and capturing the economic value from the increasing participation in the upstream cocoa production. Although recently the state has shown (somewhat) policy interventions to sustain the upstream development, but this intervention remained politicized with limited engagement with the key players, in the other hand the state needs foreign direct investment to support the development of cocoa industry. With the local actors are struggling to continue participating in the global production networks, the state needs to build inter-scalar communication and engagement with the transnational firms (rather than sees as rivals), creating enable competitive environment for both global-local firms to engage in innovation that provides conditioning stages for the local firms to become more competitive. Another trajectory from the firm sustainability initiatives is the ongoing widening social gap between the capitalist and smallholder farmers, and unequal power between the farmers and the industrial actors. In addition to enabling role, the state needs to moving away from the (short-term) project based programs and more focus on long-term empowerment program, nurturing inclusive local institutions rather than adding more bureaucracy structure in the upstream production networks. Finally, creating a coordinated inter-sectoral (and scalar) policy and programs to prevent deepen poverty and widen social gaps at the local government level whilst improving the local institutional capacity.

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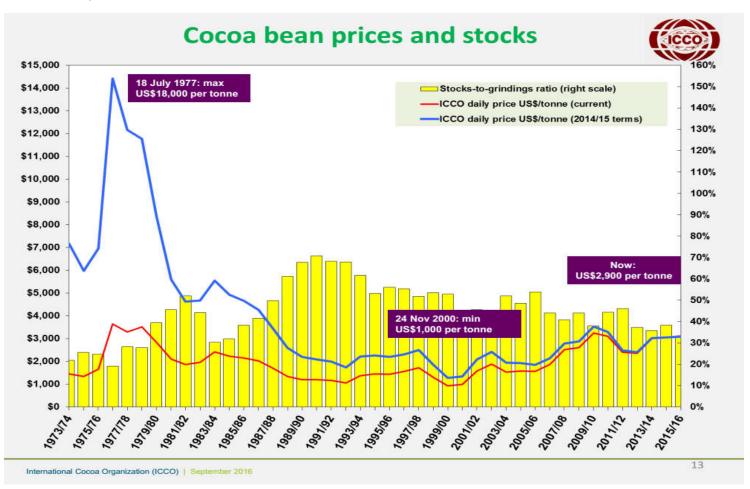
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Appendix A. Overview of global price fluctuated against the stock grinding ratio

The slide was copy from the overview of cocoa supply and demand presented by Laurent Pipitone during the ICCO Cocoa Market Outlook Conference, London, 27 September 2016



B. Overview of Interviews

B.1 Key Informant Interview Reference list

Code	Date	Location	Format	Language	Respondent	Organisation/business	Spatial operation
Econo	mic activities at the	village and district level	<u> </u>				орегинен.
GL1	24 April 2014	Guliling-Mamuju	In Person	Indonesian	Leader	Farmer group	Village
GL2	24 April 2014	Pamulukkang-Mamuju	In Person	Indonesian	Leader	Farmer group	Village
GL3	24 April 2014	Kalukku-Mamuju	In Person	Indonesian	Leader	Farmer Group	Village
GL4	29 May 2014	Batu Pangada'ala-Polman	In Person	Indonesian	Leader	Farmer group	Village
GL5	29 May 2014	Rappang Barat-Polman	In Person	Indonesian	Leader	Farmer group	Village
GL6	30 May 2014	Binuang- Polman	In Person	Indonesian	Leader	Farmer Group	Village
GL7	3 March 2015	Masamba-North Luwu	In Person	Indonesian	Leader	Farmer group	Village
GL8	3 March 2015	Tarobok	In Person	Indonesian	Leader	Farmer group	Village
GL9	3 March 2015	Kapidi	In Person	Indonesian	Leader	Farmer Group	Village
GL10	4 March 2015	Lumbewe	In Person	Indonesian	Cocoa Doctor	Owner of CVC business	Village
GL11	4 March 2015	Jalajja	In Person	Indonesian	Cocoa Doctor	Owner of CVC business	Village
GL12	4 March 2015	Asana	In Person	Indonesian	Cocoa Doctor	Owner of CVC business	Village
GL13	4 March 2015	Kasituwu	In Person	Indonesian	Cocoa Doctor	Owner of CVC business	Village
Gl14	2 March 2015	Masamba	In Person	Indonesian	Cooperative leader	CV Marewa-assisted by Veco and Wasiat	Village
LT1	23 April 2014	Mamuju	In person	Indonesian	Owner of trading firm	Trader-has major contract with a local cocoa processor	District
LT2	23 April 2014	Mamuju	In person	Indonesian	Owner of trading firm	Trader-mostly engaging with regional buyer	District
LT3	26 April 2014	Malunda-Majene	In person	Indonesian	Owner of trading firm	Trader-mostly engaging with regional buyer	District
LT4	30 May 2014	Polman	In person	Indonesian	Director of Bumi Surya	Arm-length trader of Barry Callebaut	District
LT5	30 May 2014	Polman	In person	Indonesian	Sourcing manager	Subsidiary of ECOM-TMCI for Polman-Mamuju	District
LT6	30 May 2014	Polman	In person	Indonesian	Collector also group leader	Independent collector	Sub district
LT7	30 May 2014	Polman	In person	Indonesian	Collector	Independent collector	Village
LT8	31 May 2014	Larompong- Luwu	In person	Indonesian	Collector	Independent collector	Village
LT9	31 May 2014	Larompong- Luwu	In person	Indonesian	Collector	Independent-often supply to MSI	Village
LT10	1 June 2014	Malangke-North Luwu	In person	Indonesian	Collector	Independent-often supply ECOM-TMCI	Village
LT11	1 June 2014	Baebunta-North Luwu	In person	Indonesian	Collector	Independent-often supply ECOM-TMCI	Village
LT12	1 June 2014	Masamba-North Luwu	In person	Indonesian	Sourcing manager	Subsidiary of Olam for North and East Luwu	District
LT13	2 June 2014	North Luwu	In person	Indonesian	Owner of trading firm	Trader-often Olam, but also other regional buyers	District
LT14	2 June 2014	Masamba-North Luwu	In person	Indonesian	Sourcing manager	Subsidiary of ECOM-TMCI for North and East Luwu	District

B.1 Key Informant Interview Reference list (Continue)

Code	ode Date Location		Format	Language	Respondent	Organisation/business	Spatial
							operation
Activit	ies and respons	ibility at the provincial and	national level				
CC1	4 Feb 2014	Makassar	In person	Indonesian	Certification manager	Mars Symbioscience Indonesia	National
CC2	18 Feb 2015	Luwu	In person	Indonesian	CDC-CVC field staffs	Mars Global	District
CC3	4 Mar 2015	Luwu	In person	Indonesian	CDC-CVC field staffs	Mars Global	District
CC4	15 Apr 2015	Jakarta	In person	English	Procurement manager	Nestlé Indonesia	National
CC5	11 Mar 2015	Makassar	In person	Indonesian	Sustainability manager	ECOM-TMCI	National
CC6	12 Mar 2014	Seram, Ambon	By phone	Indonesian	Cocoa plantation manager	Olam Indonesia	National
CC7	26 Apr 2014	Malunda, West Sulawesi	In person	Indonesian	Sustainability staff	BT Cocoa	National
CC8	9 Feb 2015	Makassar	In person	English	Asia-pacific Sustainability manger	Barry Callebaut	Asia-pacific
CC9	26 Mar 2014	Makassar	In person	Indonesian	Procurement manager	BT Cocoa	National
MI1	24 Apr 2015	Jakarta	In person	Indonesian	Assistant deputy of estate crops and agriculture	Coordination Ministry of Economy	National
MI2	9 Apr 2015	Jakarta	In person	Indonesian	Staff responsible for cocoa	Ministry of Industry	National
MI3	5 Apr 2015	Jakarta	In person	Indonesian	Estate crops coordinator	Ministry of Industry	National
MI4	6 Apr 2015	Jakarta	In person	Indonesian	Estate crops coordinator	Ministry of Trade	National
MI5	15 Apr 2015	Jakarta	In person	Indonesian	Dirjen estate crop	Ministry of Agriculture	National
MI6	15 Apr 2015	Jakarta	In person	Indonesian	Deputy of Dirjen estate crop	Ministry of Agriculture	National
MI7	13 Feb2015	Polewali Mandar	In person	Indonesian	Head of estate crop department	Polewali Mandar District	District
MI8	15 Feb 2015	Polewali Mandar	In person	Indonesian	Estate crop official	Polewali Mandar District	District

B.2 List of respondent for semi-structure interview

Code	Date	Location	Format	Language	Respondent	Organisations	Spatial
SS1	31 May 2014	Luwu	In person	Indonesian	Certification coordinator	Mars Symbioscience Indonesia	Indonesia
SS2	21 Mar 2015	Makassar	In person	Indonesian	Field staff	Mars Symbioscience Indonesia	Indonesia
SS3	21 Mar 2015	Makassar	In person	Indonesian	Field staff	Mars Symbioscience Indonesia	Indonesia
SS4	4 Feb 2015	Makassar-CSP meeting	In person	English	Productivity & cocoa development researcher	Mondelez	Asia Pacific
SS5	15 Apr 2015	Jakarta-CSP meeting	In person	Indonesian	Sustainability manager	BT Cocoa	National
SS5	4 Feb 2015	Makassar-CSP meeting	In person	Indonesian	ME staff	Olam Indonesia	National
SS7	15 May 2014	IICC- Conference	In person	English	Country representative	UTZCertified	National
SS8	28 Dec 2015	Netherlands	By email	English	ME officer	UTZcertified	Global
SS9	21 may 2014	Bantaeng	In person	Indonesian	RA manager	Rainforest Alliance	National
SS10	21 May 2014	Bantaeng	In person	Indonesian	Field staff	Rainforest Alliance	District
SS11	30 May 2014	Jakarta	By phone	Indonesian	Auditor	Control Union	National
SS12	3 Jun 2014	Bogor	By phone	Indonesian	Auditor	Bio-Cert	National
SS13	5 Jun 2014	Makassar	In person	Indonesian	Program manager cocoa-coffee	Veco	National
SS14	30 May 2014	Polewali	In person	Indonesian	Director	Wasiat	District
SS15	30 May 2014	Polewali	In person	Indonesian	Field staff	Wasiat	District
SS16	28 Feb 2014	Makassar	In person	Indonesian	Project manager-SCPP	Swisscontact	District
SS17	31 Dec 2016	Makassar	By phone	Indonesian	Program officer	Swisscontact	District
SS18	22 Apr 2014	Mamuju	In person	Indonesian	Field coordinator-Mamuju	Swisscontact	District
SS19	31 May 2014	Luwu	In person	Indonesian	Field coordinator-Luwu Raya	Swisscontact	District
SS20	24 Feb 2015	Mamuju	In person	Indonesian	Operational manager	Swisscontact	District
SS21	26 Mar 2014	Makassar	In person	English	Country representative	IDH	National
SS22	15 May 2014	Bali	In person	Indonesian	Program officer	IFC	National
SS23	3 Feb 2015	Makassar	In person	Indonesian	Program manager (2011-14)	WCF-CIP project	National
SS24	3 Feb 2015	Makassar	In person	Indonesian	Executive director	CSP	National
SS25	5 Feb 2015	Makassar	In person	Indonesian	Staff	CSP	National
SS26	15 Apr 2015	Jakarta	In person	Indonesian	Member	PISAgro	National
SS27	15 Apr 2015	Jakarta	In person	Indonesian	Chairman of Executive Board	DEKAINDO	National
SS28	15 May 2014	Bali	In person	Indonesian	General Secretary	ASKINDO	National
SS29	13 Feb 2015	Jakarta	In person	Indonesian	House Representative	Golkar Party	Province
SS30	13 Apr 2015	Jakarta	In person	Indonesian	House Representative	Gerindra Party	National
SS31	12 Apr 2015	Makassar	In person	Indonesian	House Representative	PDIP Party	National
SS32	15 May 2014	Bali	In person	Indonesian	Scientist 1	ICCRI	National
SS33	16 Feb 2015	Makassar	In person	Indonesian	Scientist 2	ICCRI	National
SS34	19 Feb 2015	Makassar	In person	Indonesian	Scientist 3	ICCRI	National

B.3 List of Focus Group Discussion

Code	Date	Location	Language	Group name	No of	Supporting organisation	Spatial
					participants		
FG1	24 April 2014	Tadui- Mamuju	Indonesian	Kakao Abadi	10	Nestlé and Swisscontact	Village
FG2	24 April 2014	Pammulukang-Mamuju	Indonesian	Sekata	6	Nestlé and Swisscontact	Village
FG3	29 May 2014	Binuang-Polewali Mandar	Indonesian	Marannu	6	TMCI-Ecom subsidiary	Village
FG4	30 May 2014	Anreapi-Polewali Mandar	Indonesian	Tunas Harapan	8	TMCI-Ecom subsidiary	Village
FG5	25 February 2015	Tadui-Mamuju	Indonesian	Padaidi	10	Nestlé and Swisscontact	Village
FG6	25 February 2015	Tapore - Mamuju	Indonesian	Harapan Baru	9	Nestlé and Swisscontact	Village
FG7	25 February 2015	Kalukku-Mamuju	Indonesian	Batumameang	8	Nestlé and Swisscontact	Village
FG8	27 February 2015	Luyo-Polman	Indonesian	Lestari	10	Cooperative, Wasiat-Veco	Village
FG9	27 February 2015	Luyo-Polman	Indonesian	Bina Harapan	6	Cooperative, Wasiat-Veco	Village
FG10	27 February 2015	Mapili-Polman	Indonesian	Mesakada	7	Cooperative, Wasiat-Veco	Village
FG11	28 February 2015	Betetanga-Polman	Indonesian	Tammu tammu	12	TMCI-Ecom subsidiary	Village

Appendix C.1 Overview of on-site visit of ongoing implementation of sustainability initiatives in East and North Luwu Districts



Farmer training poster that has complemented under SCPP program in North Luwu



Updated map of Mars Research Cocoa Centre in East Luwu, each block-1 ha



Drying cocoa practice among farming community in North Luwu



Mars assisted CVC business in East Luwu

Appendix C.2 Overview of on-site visit of ongoing implementation of sustainability initiatives in Polewali Mandar District





Board to identify the farmer group who participate in certification scheme program

Pesticides spraying was common practices for the cocoa farmers in Polewali Mandar



Good farming practices poster was promoted by Barry Callebaut and local trader, Bumi Surya



A farmer who participated in certification scheme was renovating the house

Appendix C.3 Overview of on-site visit of ongoing implementation of sustainability initiatives in Mamuju District







Demonstration farms in Mamuju, collaboration of Mumuju Government, Nestle, ICCRI and Swisscontact





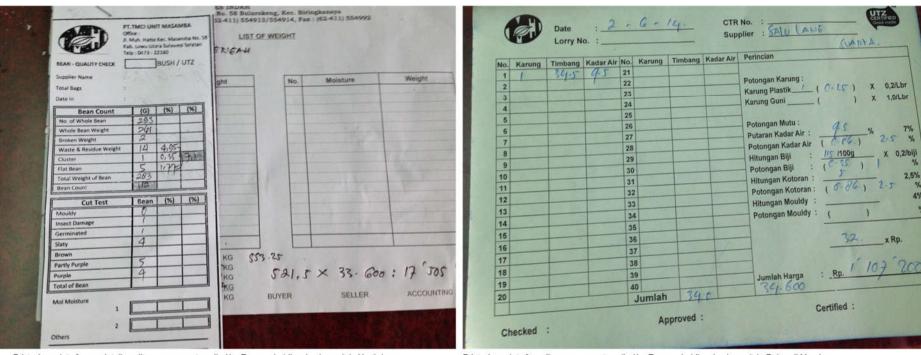


Farm gate price update board as promoted by BT Cocoa



Focus group discussion with cocoa farmers, dried cocoa sacks at the background ready to sell

Appendix D. Comparing adapted quality assessment performed by a transnational firm (re. Ecom subsidiary) depending on geographic supply capacity



Printed receipt of more detail quality assessment applied by Ecom subsidiary buying unit in North Luwu

Printed receipt of quality assessment applied by Ecom subsidiary buying unit in Polewali Mandar

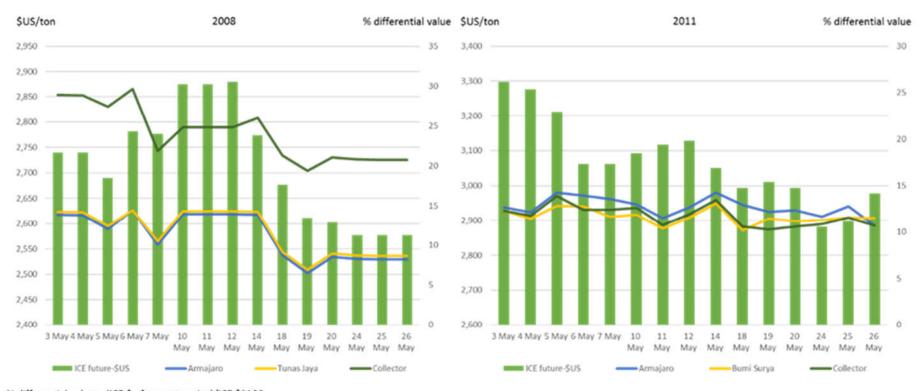
Appendix E. Questionnaire of pilot survey in 2012 about the emerging certification schemes

B. FARM CHARACTERISTICS I. VITAL STATISTICS

			1. VI	IAL STATISTICS			
 Information on your household Household member (initials) 	l structure Age	Gender	Living elsewhere	Hours work on cocoa farm	School gra	des completed (SD, SMP, SMA, Univ	ersity)
1 2 3		F/ M F/ M F/ M		daily			
4 5		☐ F/ ☐ M ☐ F/ ☐ M					
How many years have you been gro 3) Areas of owned farms? Farms	wing cocoa?	y(ears	Size (ha)	Number of plot	Number of tree/plot	
Othe	roductive fari er crop, er crop, er crop,						
8) Do you know how much your how 9) If NO, can you estimate the follow Household member		ne last year? 🗌 Y	Percenta	YES, how much? R ge (Note: should up to 100%)	Rp	— Comments	
☐ Cocoa ☐ Other tree crops ☐ Livestock				_			

Other agriculture		
☐ Tradesmen (Tukang)		
Trader (pedagang)		
Transport (Ojek-supir)		
Wage labour (buruh)		
Small manufacture (pabrik)		
Remittances (uang kiriman, sumbangan)		
Other,		
Other,		
	C. ECONOMIC SUSTAINABILITY	
	I. PRODUCER RISK	
8) How do you know the cocoa price?		
9) How much dried cocoa bean have you harvested on your farm i	n the last	
a) Month?(kg/bag-karung)		
b) Year?(kg/bag-karung)		
10) Who bought your cocoa over the last month?		
☐ Farmer cooperative ☐ village collector ☐ trade	exporter	
13) Have you used money from cocoa sales for any of the followin	g items / activities?	
Sending children to higher education,		
Buying a motorbike,		
Buying a car / truck,		
Building a new house,		
Going on the hajj,		
Paying for an important ceremony (wedding, circumc	sion, eidadha)	
☐ Buying new mobile phone		
Other,		
14) Do you have access to credit before the harvest? \Box YES / \Box	NO.	
If yes, where from?		
Bank Ame	ount	
	ount	
	ount	
Friends or family Ame	ount	
□ No		

Appendix F. Comparing the farm gate price among the trading actors in Polewali Mandar district before and after implementation of export tax (Ministry of finance regulation, No 67/PMK. 011/2010)



% differential value = (ICE \$ - farm gate price)/ICE \$*100

Source: Owned data collection from previous works

Appendix G. Overview of rural communities, the emerging capitalist farmers







Capitalist farmer who owned shop and cocoa nurseries business in East Luwu

Appendix H. Overview of rural communities, livelihood opportunity and challenge



Cocoa farms intercropping with seasonal fruit trees, Polewali Mandar



Attempt to integrate palm oil into cocoa farming, North Luwu



Farming is family business, drying floor next to cocoa nursery



After sun drying followed by bean sortation

Appendix I. Wasted government program fermentation facilities during field work in 2014 and 2015



Idle fermentation boxes to support Gernas program, farmer group in Mamuju



Small supply cocoa was inadequate to sustain fermentation business, a farmer group in Polewali Mandar





Idle UPP (Agricultural Extension Unit) at District Level to support Gernas program Idle marketing unit of Gapoktan (farmer groups) and never used fermentation box to support Gernas program

Appendix J. Raw data of cocoa farm cost allocated by the farmers in Polewali Mandar

Farmers	Pruning	Organic Fertilizer	Chemical Fertilizer	Sanitation	Harves ting	Sortation - Drying	Chemical Pesticides	Organic Pesticides
1	250,000	0	300,000	50,000	0	425,000		0
2	250,000	0	300,000	100,000	0	450,000	108,000	0
3	400,000	200,000	400,000	50,000	0	250,000	119,000	460,000
4	550,000	0	300,000	100,000	0	150,000	278,000	20,000
5	100,000	300,000	120,000	100,000	0	250,000	260,000	385,000
6	200,000	0	300,000	50,000	0	450,000	127,000	0
7	300,000	150,000	200,000	50,000	0	300,000	60,000	460,000
8	210,000	100,000	150,000	0	0	200,000	245,000	0
9	150,000	0	200,000	235,000	0	450,000	195,000	0
10	100,000	0	300,000	150,000	0	270,000	180,000	0
11	200,000	0	400,000	50,000	0	400,000	193,000	0
12	50,000	0	100,000	50,000	0	150,000	85,000	0
13	200,000	0	500,000	50,000	0	250,000	135,000	0
14	450,000	200,000	250,000	0	0	200,000	75,000	460,000
15	150,000	0	400,000	50,000	0	300,000	138,000	0
16	150,000	0	100,000	50,000	0	200,000	145,000	0
17	200,000	0	300,000	40,000	0	350,000	130,000	0
18	150,000	0	100,000	50,000	0	250,000	65,000	0
19	240,000	0	350,000	50,000	0	350,000	110,000	0
20	400,000	200,000	150,000	50,000	0	200,000	121,000	460,000
21	150,000	250,000	250,000	50,000	0	300,000		0
22	250,000	350,000	400,000	50,000	0	450,000	500,000	0
23	300,000	200,000	250,000	0	50,000	200,000	356,000	0
24	250,000	200,000	150,000	0	0	100,000	121,000	0
25	300,000	250,000	450,000	0	0	200,000	128,000	652,500
26	0	250,000	600,000	75,000	0	200,000	101,000	1,098,000
27	350,000	100,000	350,000	0	0	250,000	82,000	15,000
28	50,000	350,000	150,000	0	0	300,000	200,000	0
29	150,000	100,000	200,000	0	0	150,000	115,000	820,000
30	300,000	0	250,000	0	0	150,000	136,000	0
31	250,000	250,000	150,000	20,000	0	150,000	50,000	750,000
32	200,000	0	150,000	0	0	150,000	69,000	0
33	150,000	150,000	150,000	0	0	150,000	30,000	582,000
34	350,000	100,000	200,000	0	0	150,000	105,000	700,000
35	50,000	50,000	200,000	50,000	0	250,000	184,000	0
36	300,000	100,000	200,000	0	0	150,000	169,000	0
37	250,000	50,000	200,000	0	0	250,000	71,000	850,000
38	100,000	60,000	0	0	250,000	141,000	814,000	0
39	100,000	150,000	0	0	200,000	145,000	650,000	0
40	0	250,000	0	0	250,000	127,000		0

Appendix J. Raw data of cocoa farm cost allocated by the farmers in North Luwu

Farmers	Pruning	Organic Fertilizer	Chemical Fertilizer	Sanitation	Harvesting	Sortation - Drying	Organic Pesticides	Chemical Pesticides
1	300,000	0	50,000	250,000	150,000	150,000	0	350,000
2	50,000	0	100,000	0	150,000	200,000	0	300,000
3	100,000	0	100,000	0	150,000	200,000	0	400,000
4	0	0	100,000	0	150,000	400,000	0	50,000
5	50,000	0	100,000	0	150,000	450,000	0	400,000
6	450,000	0	150,000	350,000	150,000	100,000	0	350,000
7	0	0	50,000	100,000	300,000	300,000	0	350,000
8	100,000	0	100,000	0	150,000	150,000	0	250,000
9	50,000	0	100,000	0	150,000	250,000	0	250,000
10	50,000	0	100,000	0	150,000	150,000	0	450,000
11	150,000	0	100,000	150,000	150,000	250,000	0	400,000
12	50,000	0	100,000	0	150,000	100,000	0	400,000
13	100,000	0	100,000	0	150,000	200,000	0	400,000
14	200,000	100,000	0	50,000	250,000	300,000	0	400,000
15	150,000	0	150,000	100,000	150,000	350,000	0	450,000
16	250,000	0	50,000	100,000	150,000	400,000	0	350,000
17	200,000	0	100,000	100,000	250,000	200,000		
18	200,000	0	100,000	100,000	250,000	300,000	0	350,000
19	100,000	0	50,000	50,000	250,000	250,000	0	300,000
20	300,000	0	100,000	350,000	200,000	100,000	0	500,000
21	50,000	0	100,000	0	50,000	100,000	0	300,000
22	100,000	0	350,000	0	150,000	100,000	0	250,000
23	50,000	-	150,000	50,000	100,000	-		250,000
24	50,000	-	-	200,000	50,000	-	-	700,000
25	50,000	-	100,000	300,000	-	-	-	200,000
26	100,000	0	150000	0	0	0	0	300000
27	0	0	100,000	300,000	50,000	0	0	250,000
28	50,000	50,000	250,000	100,000	0	50,000	0	450,000
29	100,000	0	100,000	150,000	100,000	50,000	0	400,000
30	100,000	0	0	100,000	50,000	0	0	300,000
31	50,000	0	50,000	0	100,000	100,000	0	350,000
32	0	0	300,000	0	50,000	100,000	0	250,000
33	200,000	0	100,000	50,000	50,000	0	100,000	350,000
34	100,000	0	50,000	150,000	150,000	100,000	0	350,000
35	100,000	0	100,000	50,000	0	100,000	0	400,000
36	150,000	0	100,000	0	200,000	200,000	0	400,000
37	100,000	-	150,000	250,000	350,000	150,000	-	600,000
38	100,000	0	0	50,000	0	0	0	400,000
39	100,000	100,000	200,000	100,000	100,000	150,000	0	450,000
40	100,000	0	100,000	50,000	0	0	0	300,000

Appendix K. Result sections of the impact assessment on certification scheme in Indonesian cocoa industry

3. Results of the pilot survey⁹⁷

It should be emphasised that the following results are preliminary and are based on a set of draft indicators that will be further reviewed. The primary purpose of this study was to trial a survey method, with a secondary purpose of analysing impacts from participation in a certification scheme. Results are presented here for initial discussions with relevant stakeholders only and should certainly not be used to judge the success, failure or otherwise of certification schemes. The survey format itself was organised into 6 sections, but the results (only) were focus on: C. Economic Sustainability indicators; D. Environmental Sustainability indicators; E. Social Sustainability indicators; and F. Perceptions towards certification. The results for each section of the survey will now be discussed.

C. ECONOMIC SUSTAINABILITY

The economic sustainability of the cocoa sector is required to continue productive farming activities as well as to maintain quality of life. To develop indicators of economic sustainability, a range of parameters were used: production and post-harvest activities; income and expenditure; quality and market access; and access to microfinance.

C.I. Cocoa production, prices and competitiveness

Production is a common indicator to determine improvements in the farming system. However, getting an answer to questions about a farmer' production in the previous year was difficult. This is because farmers rarely keep records of their produce sales to middlemen or local traders (as shown in Figure 3 above). Nor is it standard practice for these buyers of cocoa to provide a receipt. This means that answers are reliant upon the memory recall of the farmer.

Cocoa Production and yield

Not all of farmers are able to accurately estimate their cocoa production in the previous year (only 80% of the control group and 65% of the target group), although more were able estimate their cocoa harvest during the previous month (90% of the control group and 97% of the target group). The surveys were conducted in June through to August during the main harvest in Sulawesi. Target farmers reported much higher productivity during both time periods (Figure 9).

⁹⁷ The summary based on the pilot survey result of the emerging certification schemes, as detail found in Hafid, H., Neilson, J., Mount, T., & McKenzie, F. (2013). Sustainability impact assessment of a certification scheme in Indonesian cocoa industry: 2012 Pilot survey result. http://www.geosci.usyd.edu.au/documents/cocoa2.pdf

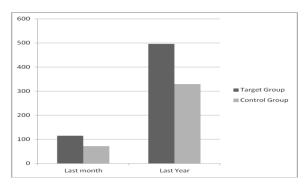


Figure 9. Farmer estimates of cocoa productivity (kg per ha of cocoa land)

Post-harvest handling and marketing

There was a very significant difference between the two groups in relation to post-harvest handling and marketing, suggesting that certification has been associated with a considerable transformation in this area. Figures 10 and 11 clearly show that most target farmers are drying their cocoa much longer (4-5 days) compared with most control farmers (1-2 days). Farmers receive significantly lower prices for wetter beans because of the high water content. Figure 12 shows that the certified target group is now overwhelmingly selling directly to the exporter rather than selling through more traditional local collector networks. However, target group farmers did also admit to selling some of their beans to local traders if they needed money quickly, or if the harvested volume was relatively small, or if they still had outstanding debts with the local collector.

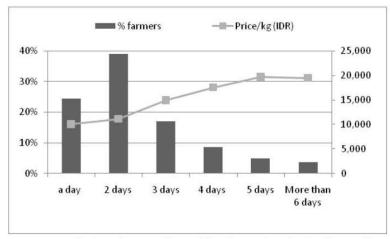


Figure 10. Days drying of cocoa when sold and associated price (Control Group, n:82)

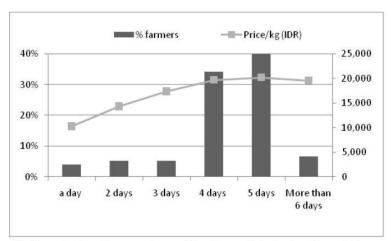


Figure 11. Days drying of cocoa when sold and associated price (Target Group, n:76)

Due to the lower moisture levels, target farmers received much higher prices than control group farmers. With each further day of drying, moisture content decreases and begin to approach the required 10% level. It is difficult to accurately estimate the moisture level from the survey based on number of days dried, as this will depend on a number of factors (drying yard materials, weather etc). Based on an assumption that cocoa dried for at least 5 days has reached the optimal moisture level (10%), and is therefore used as an index of 1, we have then adjusted the prices received for cocoa dried less than 5 days to take into account higher moisture levels and so obtain a more accurate estimate of prices received per content of cocoa⁹⁸.

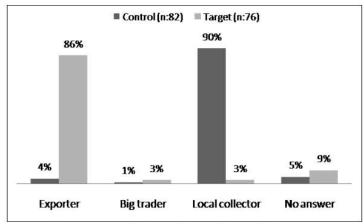


Figure 12. Marketing of cocoa beans by farmers

These adjusted prices are presented in Figure 13, and suggest that the prices received by target farmers are still significantly higher than in the control group. Interestingly, however the control group farmers who dried their beans properly for 5 days or more did actually receive a similar price to those in the target group. It seems likely that the direct trading relationship with the exporter has also contributed to the higher farm-gate price. This price data was collected during the period March

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 $^{^{98}}$ We have estimated that the price of cocoa sold after being dried for 4 days, should be divided by 0.95, for 3 days (0.9), for 2 days (0.8), and 1 day (0.6). This calculation is open to debate, but appears to be a best 'guestimate' at this stage

– July, 2012, and global price fluctuations might have influenced this data. According to data from the International Cocoa Organisation (ICCO, 2013), however, international process were relatively stable over the time period the survey was conducted. Monthly averages (in USD/ tonne) were: March (2,359); April (2,267); May (2,314); June (2,264), and July (2,350). The survey collected asked the date of the last sale, so it is possible to determine farm-gate prices as a percentage of prevailing world prices.

In addition to market fluctuations, bean quality, debt owed and absence of sales receipts, determining the influences on farm-gate price is further complicated because prices are subjectively determined by the collector. It is extremely difficult to differentiate the effects on farm-gate prices caused by variations in the marketing system from the effects of the certification process itself.

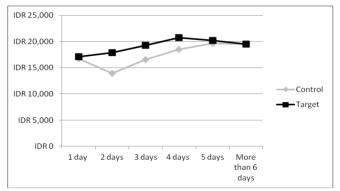


Figure 13. Farm-gate price of cocoa (adjusted to take into account moisture levels following drying)

Cocoa bean quality

In order to access certified markets, good quality is required by the exporter, as well as good farm management practices. If farmers do not meet the bean quality standard, then the price is discounted. As explained above, discount prices can be applied because of excess moisture content, as well as for smaller bean size or the presence of waste and mould.

Farmers were asked to rate the quality of their cocoa (Figure 14). Perhaps not surprisingly, most farmers in both control and target groups rated their bean quality as 'good' for the various categories, although a significantly higher amount of control farmers answered 'don't know'. This suggests that certification, or perhaps the altered marketing system, has been associated with an improvement in quality awareness amongst farmers.

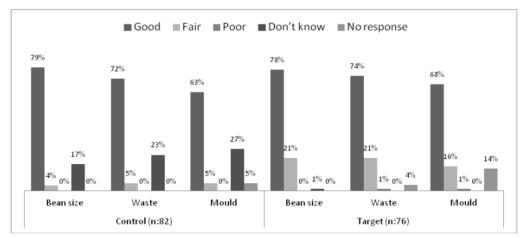


Figure 14. Farmer assessment of cocoa bean quality

Expenditure of cocoa income

Farmers were asked how they used money from cocoa sales (answered were provided by 100% of respondents from both groups). Figure 15 Suggests that income was allocated primarily to education for each group, followed by daily needs, new house, motor bike, and new mobile phones. The purchasing of farm inputs was purportedly a low priority for both groups. Overall, the target group appeared to have a greater purchasing capacity than the control group, with more individuals spending cocoa income on a new house, ceremonies and furniture, although more control farmers bought a motorbike and a new mobile phone.

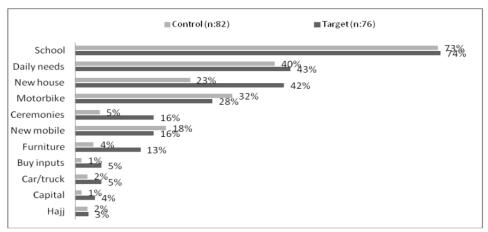


Figure 15. Allocation of cocoa revenue to various activities (% of farmers who spent at least some of their cocoa income on each expense)

Access to credit

38% of the control group and 57% of target group farmers confirmed they had obtained credit, and provided details of credit sources and amounts. Figure 16 suggests that the target group was more likely to access credit through a cooperative, while the control group accessed credit through local collectors (tengkulak). The average amount of credit obtained within both groups from these sources was relatively low (less than 2 million Rupiah). Bank credit was also reported by around 10% of each of the groups, and was generally of much higher amounts.

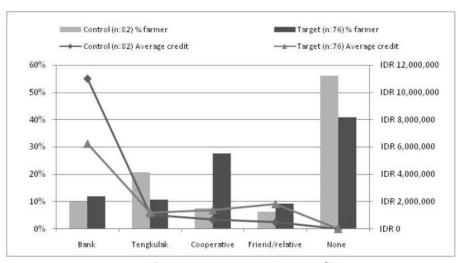


Figure 16. Farmer access to credit

C.II. Involvement in Producer Organisations

Benefits of participation

Development programs are often implemented through farmer groups (*kelompok tani*) rather than directly with individual farmers. It was therefore anticipated that farmer groups are able to provide some sort of benefits to individuals. Farmers were asked if they were a member of a farmer group and, if so, what direct benefits they obtained from participation in the group. 100% of target farmers and 80% of control farmer claimed to be members of a farmers group. Farmers surveyed reported that benefits of farmer group participation include labour sharing, and the capacity to participate in the training and community meetings. Additional benefits were reported by the target group, who also participated in collective marketing and certification schemes (Figure 17). Target group farmers reported significantly greater benefits from participation in producer groups than control group farmers.

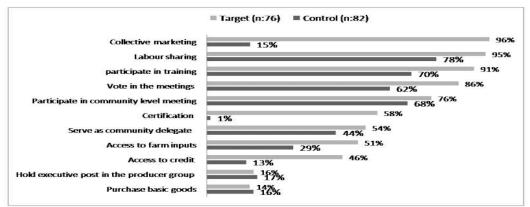


Figure 17. Benefits from being a member of a farmer group

Role of women

While farmer groups have become a vehicle for delivering development activities, equality in terms of an individual's right to group involvement is important – the lack of which can indicate discrimination that may be embedded in cultural and social norms or religious practices. Figure 18 shows that male farmers of both groups were considered by respondents to be the most active in

farmer groups, although more target group respondents (28%) felt that women were at least as active as men in the group.

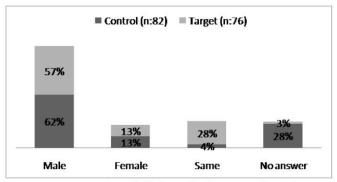


Figure 18. Farmer perception of which gender is more active in farmer groups

In response to the question about whether there were woman leaders of any kind (association, head of village, school principle, etc) in the village, more respondents from the target group answered affirmatively (Figure 19). This could either demonstrate an improved awareness of gender within the target group, or an actual greater number of women in leadership roles within the target group villages.

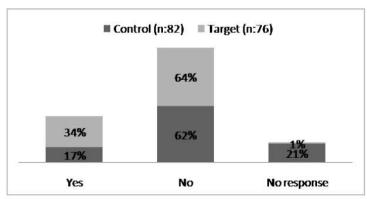


Figure 19. Women in leadership roles

C.III. Farmer perceptions of economic sustainability

Farmers were asked to compare cocoa farming today to five years ago (Figure 20) and to provide their opinion on the future prospects of cocoa farming (Figure 21). The responses to both of these questions indicate that the target group is generally a lot more positive towards the increasing benefits associated with cocoa farming compared to the control group. It is possible that the recent introduction of the certification program, and its associated exporter linkages, have reinvigorated interest in cocoa farming amongst the target group. This outcome, of course, would be considered a substantial indicator of success for the corporate proponents of certification schemes, many of whom are concerned over long-term supply sustainability.

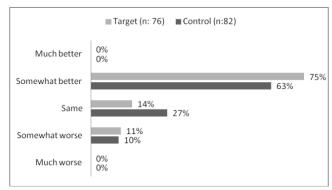


Figure 20. Attitude towards cocoa farming today compared to 5 years ago

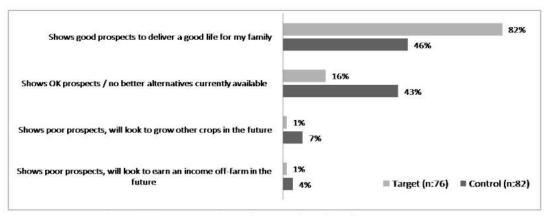


Figure 21. Perception of cocoa farming future prospects

D. ENVIRONMENTAL SUSTAINABILITY

D.I. Water

Clean water is essential not only for drinking, but also for other household purposes. It is also used for agricultural activities. Water availability and access are therefore important indicators of environmental sustainability. In this survey, questions were asked about water sources, access and contamination.

Water sources and access

Groundwater from wells was the main source of drinking water for both groups, although more target group farmers were connected to a public water supply, again suggesting a greater affluence within this group (Figure 22).

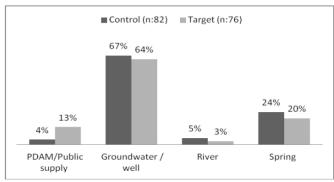


Figure 22. Sources of water

Interestingly, in terms of access (Figure 23), a greater percentage of the target group had to travel further away to obtain water. In other words, the control group had more immediate access to clean water, with only 2% with water more than 20 minutes away, compared to 17% of the target group.

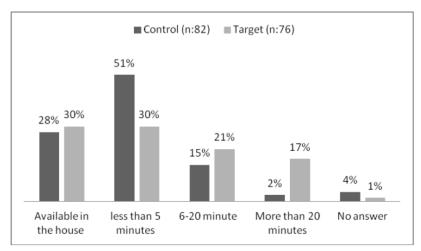


Figure 23. Accessibility of water source

Preventing water contamination

Figure 24 shows the different activities reported to have been undertaken by farmers in an effort to prevent water contamination. 56% of all control group farmers reported doing nothing to prevent water contamination, compared to only 18% of target group farmers. Overall, the target group respondents appear to have taken a greater number of efforts to prevent water contamination compared to the control group. While these claims were not verified, it suggests an enhanced awareness of the importance of preventing water contamination.

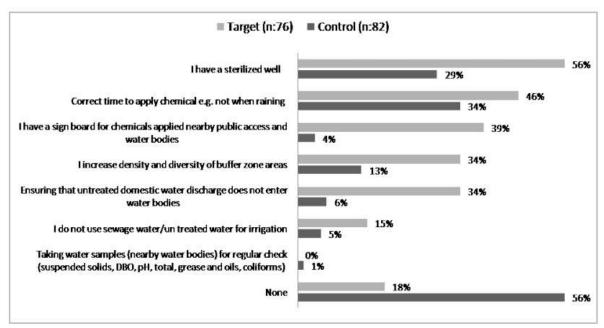


Figure 24. Smallholder responses on activities to prevent water contamination

D.II. Use of agrochemicals

Application of agrochemicals

Two types of agrochemical inputs are commonly applied to cocoa trees: fertilizers and pesticides. In this survey, some form of pesticide or herbicide was used on almost every farm (96% of all farms). Previously (see Figure 15), farmers had said they allocated a small proportion of cocoa revenue to buying inputs. However, Figure 25 suggests a high percentage of farmers using synthetic fertilizers and pesticides. This may come back to an interpretation of revenue and the difference between ongoing farm costs and investments versus outright profit.

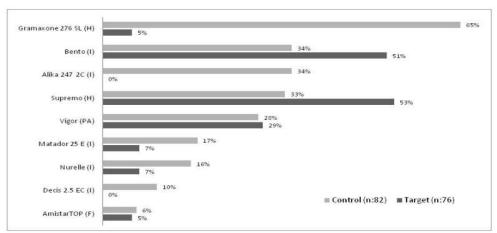


Figure 25. Various brands of pesticides applied

^{*} Note: H= Herbicide; P= Pesticide/Insecticide; PA= Pesticide Adjuvant; F= Fungicide

There were substantial differences in the types of pesticides used in the control and target group. For killing weeds, Gramoxone (active ingredient Paraquat) was used much more widely in the control group than the target group, which tended to prefer Supremo (Glyphosate). (Paraquat dichloride is an active ingredient found in Gramaxone that has been prohibited by some certification standard bodies.) Similarly, no use or highly reduced use of other pesticides such as Alika and Matador (both with active ingredient Lambda Cyhalothrin) were reported within the target group. Bento, Supremo and Vigor were both (relatively) commonly applied by both groups, possibly because these agrochemicals were distributed for free as part of the GERNAS program. Most farmers apply pesticides themselves, although the target group tended to hire more external contractors than the control group (Figure 26) – again suggesting greater affluence.

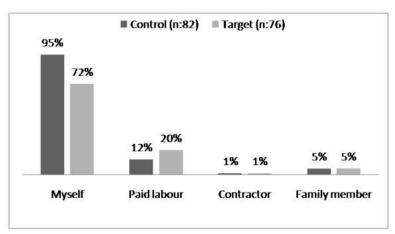


Figure 26. Responsibility for spraying agrochemicals

The need to restrict individuals from vulnerable groups (eg. pregnant woman and under age) from contact with chemicals through spraying was relatively well recognized by the members of both groups. In this survey, additional restrictions for old and sick people are accounted for in the category 'other' (Figure 27). It is very difficult to ascertain the veracity of these claims.

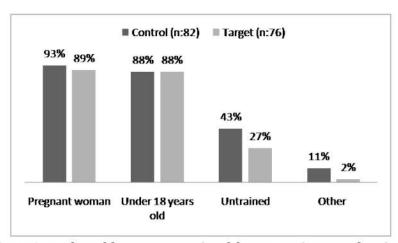


Figure 27. Vulnerable groups restricted from spraying agrochemicals

Subjective responses to the question of whether farmers think they have been using more or less pesticides now compared to previously is reported in Figure 28. The target group generally reported

using less pesticides now than 5 years ago, while the control group reported an increase use of pesticides.

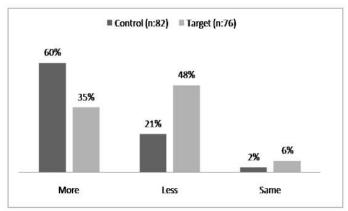


Figure 28. Changes in pesticide usage compared to 5 years ago

Almost all farmers from both groups reported having concerns over the negative effects of pesticides, although target farmers showed a heightened concern for environmental impacts (Figure 29).

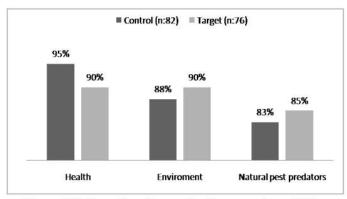


Figure 29. Perecieved negative impact of pesticides

D.III. Soil

More than 90% of cocoa farmers from both groups reported having sloping farm plots. However, Figure 30 below shows that more target farmer respondents claimed to have enacted soil control measures.

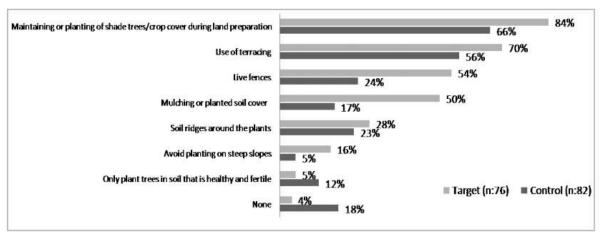


Figure 30. Smallholder responses on activities to prevent soil erosion

Most farmers from both groups relied primarily on synthetic fertilizers to replenish soil nutrients (Figure 31), although more target farmers reported that they supplemented this with composting and manuring.

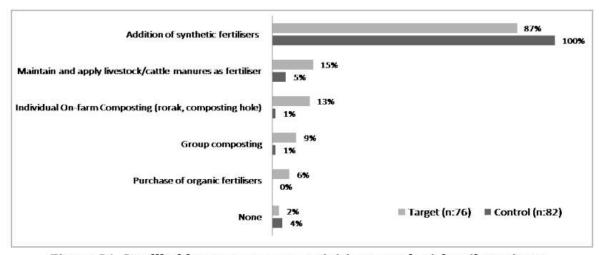


Figure 31. Smallholder responses on activities to replenish soil nutrients

D.IV. Attitudes towards the environment

Interestingly, the perception of the importance of environmental issues was relatively similar for both groups (see Figure 32). One difference was that target group farmers were more concerned with solid waste/plastic management, while control group farmers were more concerned about chemical pollution - although they may not link this concern with their agrochemical practices. Onfarm biodiversity seemed to be less important, while soil health and soil fertility was considered most important, followed by soil erosion and water quality in rivers.

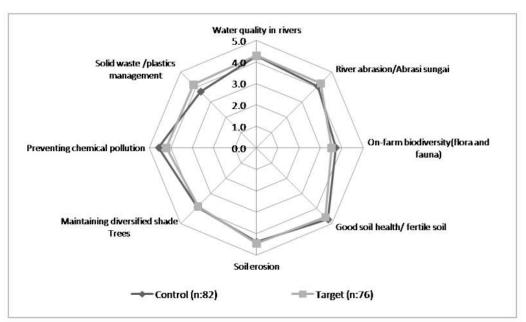


Figure 32. Smallholder perception of the importance of environmental issues

E. SOCIAL SUSTAINABILITY

Social sustainability refers to the provision of basic needs, human rights and equity that contribute to creating a productive and humane working environment in the community. Four parameters were trialled here to assess social sustainability: 1) availability of basic public services; 2) basic human rights, worker rights and equity; 3) building smallholder capacity through training participation; and 4) smallholder perceptions.

Availability of basic public services

The affordability of proper basic public services is a key indicator of quality of life, particularly community health and education services. The most common accessible health service available around the village or hamlet were community health centres (PUSKESMAS) and paramedics (doctor or nurse), while public hospitals and private clinics were often available in nearby towns. Medical service costs were relatively affordable according to both groups, where the costs are either low and do not cause difficulty, or treatment is free (see Figure 33).

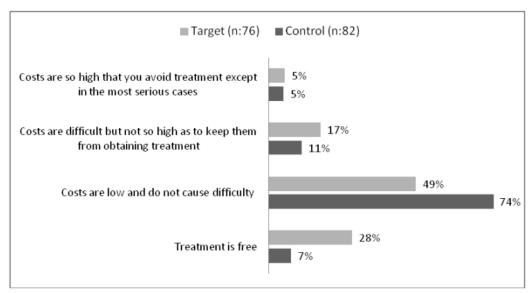


Figure 33. Opinion of basic medical service costs

In terms of access to education, the distance of public schools from the place of residence was similar for both target and control groups (Figure 34).

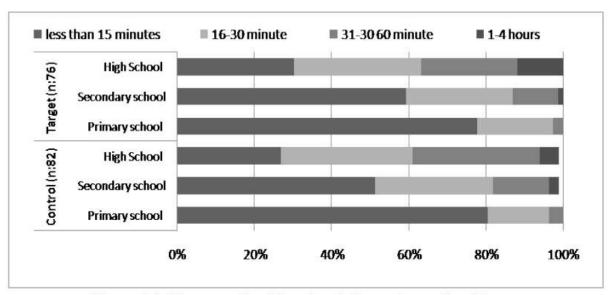


Figure 34. Distance of public schools from place of residence

Despite this similarity in access to public schools, the target group spent more on education in the last year (2011) than the control group (Table 4), possibly suggesting a greater awareness of the value in education, or possibly greater disposable income.

Table 4. Estimated expenditure on education in the last year

	Average (IDR)	Median (IDR)	
Control Group	1,067,545	500,000	
Target Group	1,904,792	750,000	

Occupational health and safety is another component of social sustainability, with injuries and illness an important factor. In terms of on-farm injuries, the target group reported a total of 19 on-farm incidents in the previous year compared with the control having only 8. The inappropriate application of pesticides can potentially harm the health of smallholders. The use of protective clothing and equipment for the application of pesticides has therefore become a requirement of certification bodies. In measuring the use of protective measures, Figure 35 shows how more target farmers' claimed to have used protective clothing and equipment than control farmers.

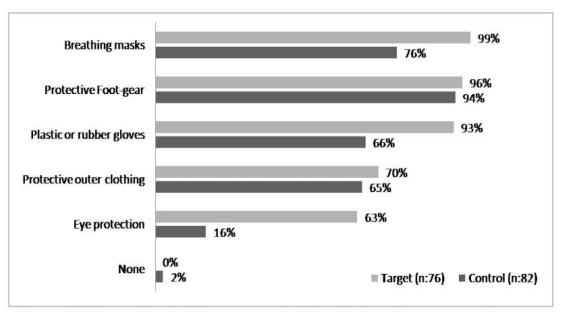


Figure 35. Types of protective equipment claimed to have been worn by farmers when spraying

E.I. Basic human rights, worker rights, and equity

As an indicator of welfare, farmers were asked how many days they, or their family, went without rice in the previous year. No farmers reported going without rice for more than 10 days, and most (96% from both groups) reported going without rice for between 1 and 9 days in a year. Considering that few of the respondents actually grew enough rice to sell, and that most rice was purchased from the market, this suggests that few household across both groups were experiencing extreme poverty.

Women on the farm

Cocoa farming is commonly a family business where the on- and off-farm work is shared among the household members. Figures 36 and 37 show a strong gender division of labour for specific activities across both the control and target groups. While financial management and marketing is traditionally allocated to women, it is interesting that more men seem to have become involved in this activity within the target group. It may be that the organisational requirements of collective marketing and certification have acted to increase the household role of men in this particular activity. It is unclear what implications this may have for the role of women in the division of on- and off-farm work.

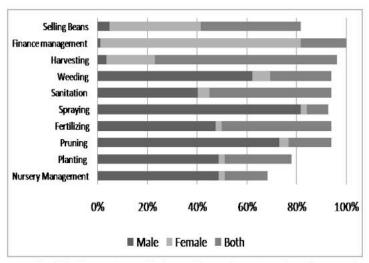


Figure 36. Household allocation of labour based on Gender (control group n: 82)

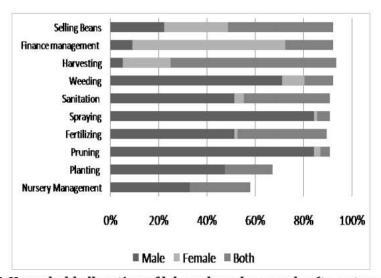


Figure 37. Household allocation of labour based on gender (target group n: 76)

E.II. Perception

We assessed farmers' perceptions on how their general quality of life had changed in the last 5 years and also how they felt environmental practices had changed (Figure 38). This second point was asked in terms of how their own environmental practices had changed, and then how they felt the environmental practices of others in their community had changed. There was little difference in terms of quality of life, with the control group having a marginally more positive attitude. It appears that the target group felt that their community's management of the environment had improved only marginally, although these results are inconclusive.

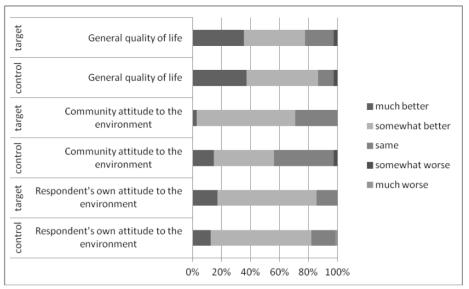


Figure 38. Smallholder perceptions regarding environment care and quality of life

F. FARMER PERCEPTIONS OF THE CERTIFICATION PROGRAM

The survey asked a number of questions specifically to those farmers participating in the certification program (the target group), particularly about their perceptions of change since implementation. There have been instances, elsewhere in Indonesia, where farmers were not aware that they had been included within a certification program. However, in this study, only 1 respondent (from 76 within the target group) claimed to be unaware that they were part of a certification scheme.

Changes in farm practices

All respondents claimed to have changes their on-farm practices in some way as a result of certification. They were then prompted about which particular farm practices had changed since becoming certified (Figure 39). Certified farmers claimed to have changed their practices most in relation to their use of safety equipment, increasing on-farm shade diversity and decreased chemical use. When asked if they had changed any other practices, a further five respondents claimed to have changed agronomic practices, such as pruning and sanitation, which should probably be included in future surveys.

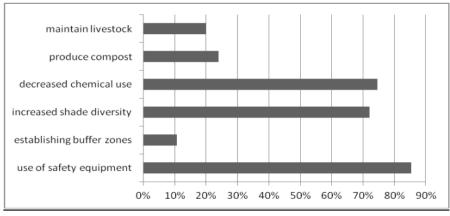


Figure 39. Changes in farm practices since certification

Changes in expenditure and costs

Certified farmers were asked how they felt expenditure and labour allocation had changed since certification (Figure 40). Compliance with certification standards had contributed to a significant increase in time spent on training (acknowledged by 89% of farmers). A number of farmers (around 30%) reported spending more on hired labour, and the use of their labour, as a result of certification. Opinions seemed to be divided about whether certification had led to an increase or a decrease in expenditure on inputs, and whether it had led to an increase in paperwork and administration. This could perhaps be explained by the fact that each farmer group has an ICS (Internal Control System) team consisting of marketing and administration personnel who are responsible for sales and for managing group administration. The head of the farmer group is often responsible for both activities, and presumably these individuals are spending more time on administration, but this may not affect other individuals in the group.

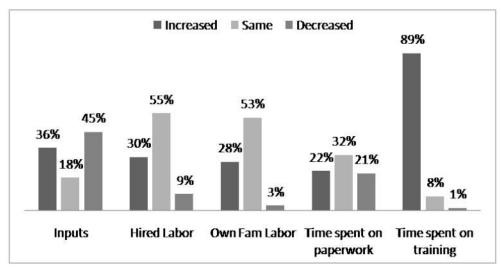
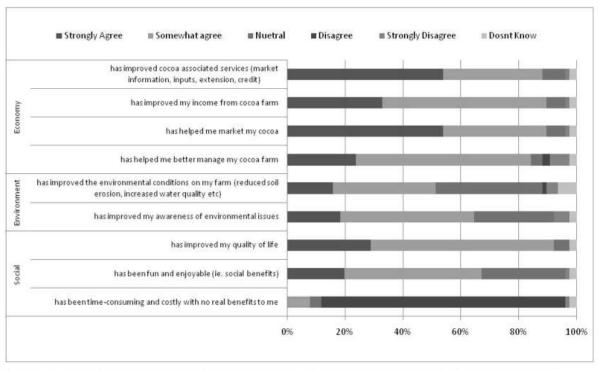


Figure 40. Changes in expenditure and time taken to comply with certification

Other Perceptions

Farmers were asked about their perceptions of the impact of being involved in a certification scheme against a number of variables (Figure 41). In general, smallholder farmers had a positive response to certification, particularly in regard to economic aspects, including improved cocoa services, marketing, income, and better farm management respectively. Perceptions towards impacts on environmental conditions and environmental awareness were also positive, although less emphatically so ranging between 'somewhat agree' and 'neutral'.



^{*} Note: 1=strongly agree; 2=Somewhat agree; 3=Neutral; 4=Disagree; 5=Strongly disagree; 6=Doesn't know

Figure 41. Farmer perception of participation in certification schemes