

INVESTOR BRIEF:

Harnessing the Prospect of Indonesia's Sustainable Cocoa Commodity

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Abbreviations

BPS	Badan Pusat Statistik
BWI	The Business Watch Indonesia
CFI	The Cocoa and Forest Initiative
CDC	Cocoa Development Centers
CoC	Code of Conduct
ECA	European Cocoa Association
FAQ	Free Average Quality
GAP	Good Agricultural Practices
GHG	Green House Gas
ICCO	International Cocoa Organization
KSS	Kerta Semaya Samaniya
NGO	Non-Governmental Organization
PPE	Personal Protective Equipment
PPDP	Public-Private Development Partnership
SCPP	Sustainable Cocoa Production Program
SECO	Swiss Economic Affairs Secretariat
STEM	Science, Technology, Engineering, and Mathematics
TUV	Technischer Überwachungsverein

Overview of the Cocoa Commodity Sector

Recent Developments in Global Cocoa Commodity

The modern pleasures offered by chocolates and other related products would not be possible without the humble cocoa beans. Based on flavor and other quality factors, there are two main varieties of cocoa beans: the “bulk” beans generally originating from Forastero trees and the “flavor” beans coming from the Criollo or Trinitario trees (ICCO, n.d.a; ICCO, n.d.b).

In 2018/2019, the world produced and ground 4.7 million tonnes of cocoa beans, with around 1.7 million tonnes in stock (ICCO, 2021). These beans are processed into cocoa liquor, butter, cakes, and powders to be used by other sectors. The confectionery industry is the largest consumer, consuming 43% of the world's cocoa consumption in 2017 (Eghbal, 2018); other notable consumers are food and beverages, cosmetics, and the pharmaceutical industries (Kumar and Sable, 2019). In 2012, overall, the cocoa sector provided revenue for 40 to 50 million people, mostly in developing countries, and generated jobs in cocoa importing countries (Voora, Bermudez and Larrea, 2019).

The cocoa market is expected to grow by 7.3% annually from 2019 to 2025, reaching \$16.32 billion. However, it pales to the size of its downstream industries; in 2017, the retail market value of the chocolate industry was \$106.2 billion and is expected to grow to \$189.89 billion by 2026 (Voora, Bermudez and Larrea, 2019). This disparity is partly due to the industrial structure of the cocoa supply chain. Cocoa trees require a hot and

humid climate and plentiful rainfall found in tropical regions to thrive. Most of the world's supply now comes from West Africa (particularly Côte d'Ivoire and Ghana), with Indonesia being sixth (Figure 1). Around 5-6 million households on small-scale farms in these equatorial countries grow 90% of the world's cocoa through a labor-intensive process (Voora, Bermudez and Larrea, 2019). To illustrate, the average farm size in West Africa is around 2-4 hectares, with each hectare producing around 300 - 400 kilograms of cocoa beans (Fairtrade, 2016). Productivity is also an issue; cacao farmers generally only produce 10% of the potential yield under best conditions and practices, while corn farmers can reach 60% of this theoretical yield (Mars, n.d.).

Compared to the masses of smallholder farmers, the traders and processors are heavily concentrated. Generally, cocoa farmers do not sell their beans directly to processing companies; instead, they sell them to local traders, cooperatives, farmer groups, or licensed buying companies (Fairtrade, 2016; ECA, 2011). Some cocoa might be ground domestically, although it can also be exported and processed by international traders. These trader-processors produce cocoa products for manufacturers like Mars, Nestle, and Mondelez. Mergers and takeovers among the downstream firms have resulted in higher market concentration. In 2016, cocoa trading and processing is controlled by just nine companies, with Barry Callebaut, Cargill, and Olam accounting for 60% of global grinding. While more traders are building processing facilities in producer countries, the Netherlands and Belgium are traditionally the world's cocoa processing centers; hence, they are among the world's top grinders (Figure 1) and exporters. Per 2018/2019, Europe consumes 47.6% of the world's cocoa, followed by the Americas at 28.9%. However, as emerging economies become richer, they may see growing domestic consumption (Voora, Bermudez and Larrea, 2019).

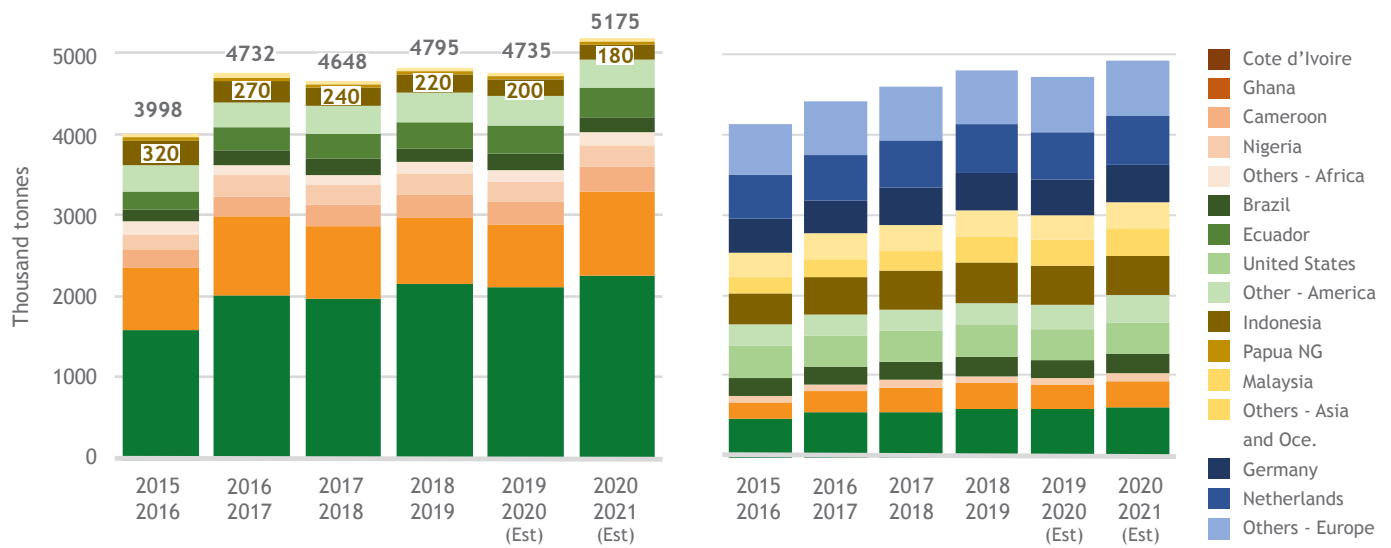


Figure 1. Global and Indonesia Cocoa Production and Grindings, 2015-2021

(Numbers above graph for global output and inside graph for Indonesia's output; Starting year 1 October; Source: ICCO)

Historically, cocoa is a volatile commodity, with its price heavily influenced by weather and politics (Fairtrade, 2016). An oligopsonistic market structure also led the real price of cocoa on a declining trend since the 1950s, although the nominal price is rising compared to the lows observed in the 1990s and 2000s (Figure 2). Another concern for farmers is their diminished value-added; in 2015, cocoa farmers were estimated only to receive 6.6% of the value of a chocolate bar (Fountain and Huetz-Adams, 2015). However, the future holds promises and challenges. On the one hand, demand for cocoa is increasing due to demands for novel cocoa-derived products and from emerging economies (Voora, Bermudez

and Larrea, 2019). On the other hand, cocoa production is likely to stagnate or fall as aging trees and changing climate threaten productivity (Fairtrade, 2016; Voora, Bermudez and Larrea, 2019). Furthermore, market volatility, income disparity, and systemic poverty affect farmers' capability to adapt, if not harm the incentives to continue to grow cocoa (Fairtrade, 2016; Voora, Bermudez and Larrea, 2019). While the extensive stocks have covered instances of deficit in the last ten years (ICCO, 2021), more persistent trends require longer-lasting solutions. Coordinated efforts from all stakeholders are necessary to ensure the sustainable fulfillment of demands that benefit all supply chain



Figure 2. World's Cocoa Price (1970 - 2020) based on ICE Cocoa Futures #1 Contracts

(Source: ICE via MacroTrends)

Indonesia's Cocoa Commodity

Indonesia is the sixth-largest cocoa producer globally, contributing 220 thousand tons (4.59%) in 2018/2019 (Figure 1). Once a primadonna in the global market, Indonesia's production has steadily declined since the 2010s. Akin to other producer countries, smallholder farmers produce over 90% of Indonesia's cocoa. Over 60% of Indonesia's cacao production is in Sulawesi, although substantial centers exist in Sumatera, East Java, East Nusa Tenggara, and Papua (BPS, 2021). Most of Indonesia's beans are of the bulk cocoa variety produced in Sulawesi, although there are limited fine cocoa production from East Java (Ministry of Industries, 2007); indeed, the International Cocoa Council (ICCO) classified only 10% of Indonesia's cocoa beans export as fine cocoa per 2020 (ICCO, n.d.a).

Indonesia's cocoa industry structure is similar to other producers, except for a sizeable domestic processing capacity. Other than the global trend of processors constructing facilities in producing countries, the Ministry of Industry has also encouraged cocoa downstream, levying a cocoa beans export tax since 2010 and providing machinery and assistance since 2012 (Kompas.com, 2016). As shown in Figure 1, Indonesia ground 487 thousand tons of cocoa beans (10.1% of global grindings) in 2018/2019. Yet this is still far from Indonesia's total installed capacity of 800 thousand tons, the third-largest in the world (Sella and Fardah, 2020). Imports cover the difference between bean production and grindings; Indonesia imports \$568 million worth of cocoa beans from Ecuador, West African producers, and Malaysia despite exporting \$100 million worth of cocoa beans in 2019 (mostly to Malaysia and Singapore). As Figure 3 shows, most of Indonesia's \$1.2 billion export in cocoa products are processed goods, notably cocoa butter, to the United States, Malaysia, and other countries.

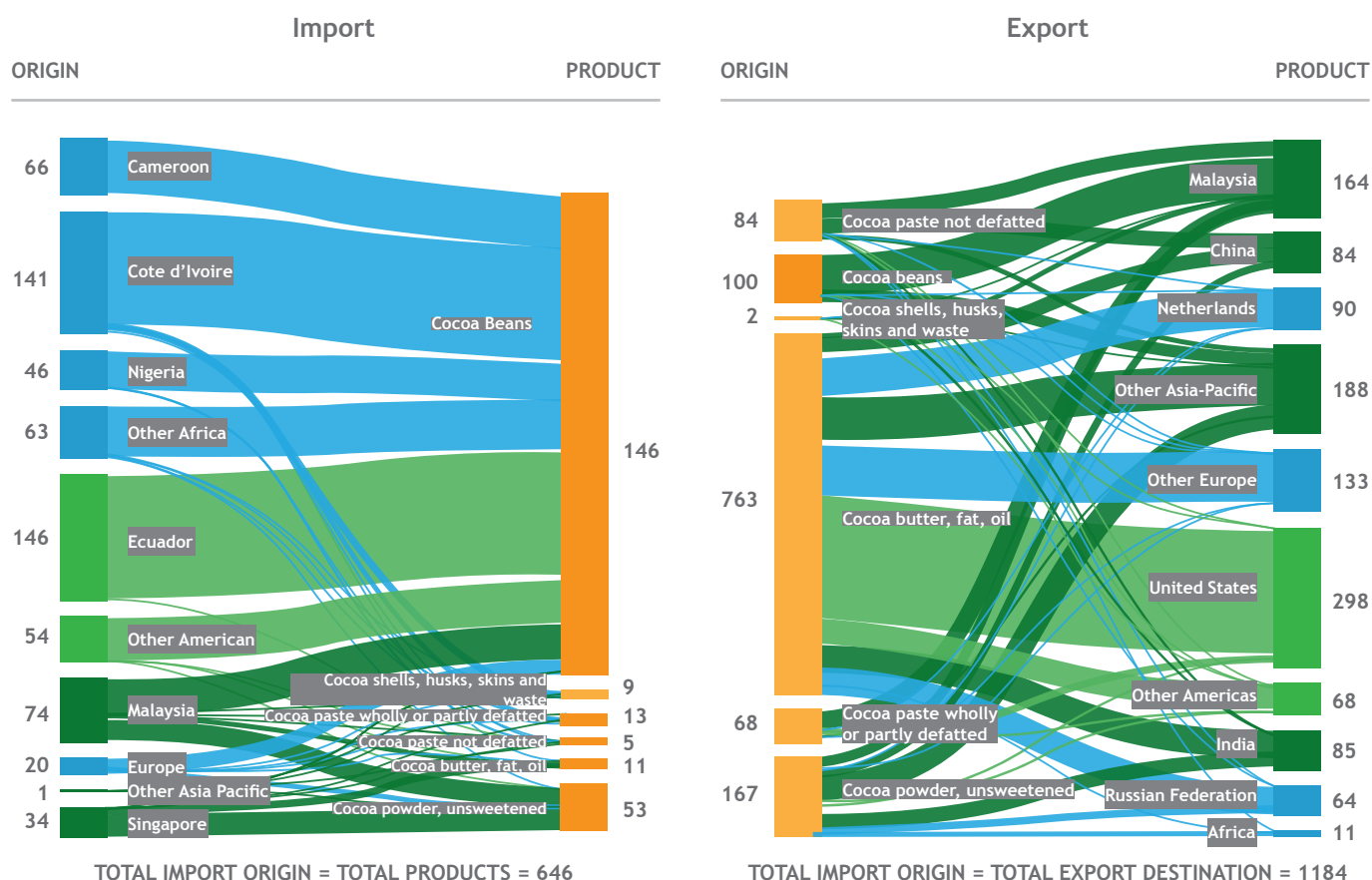


Figure 3. Indonesia's Cocoa Import and Export, 2019 (in Millions USD)

Data obtained from Chatam House's resourcetrade.earth

Akin to other countries, production and producers in Indonesia face issues regarding the industry's long-term sustainability. Per-hectare productivity in Indonesia is lower than Côte d'Ivoire and Ghana (Glorya and Nugraha, 2019; Fountain and Huetz-Adams, 2020). Most of Indonesia's cocoa trees are planted in the 1980s-1990s, and with a 25-year productive lifespan, many of them have aged (Glorya and Nugraha, 2019). Furthermore, cocoa trees are vulnerable to pests and diseases and changing climate and geographical conditions. These imply a need for replanting with more high-quality and resilient variants, yet farmers tend not to do this. The government initiated a five-year rehabilitation and rejuvenation program in the early

2010s (Indonesia Investments, n.d.), although this has not reversed the declining production trend. Poor agricultural practices compound this; for example, farmers tend to forgo fermentation before selling their cocoa, thus lowering its quality and price (Ministry of Industries, 2007; Glorya and Nugraha, 2019). The volatile prices and the farmers' reduced value-added share in cocoa production diminish farmers' lack of capability and willingness to invest and their welfare. Consequently, more farmers exit the cocoa market by either switching to other commodities (such as palm oil or rubber) or migrating to urban areas (Fairtrade, 2016; Glorya and Nugraha, 2019).



Sustainable Cocoa: Trend and Standardizations

Cocoa production entails several sustainability challenges, with a historical focus on deforestation concerns. Between 2012 and 2016, the top 30 cocoa-producing countries worldwide experienced a forest loss of 14.1 million hectares (Lumina Intelligence, 2020). Côte d'Ivoire and Ghana, two countries supplying nearly two-thirds of the world's cocoa, experienced a primary forest loss of respectively 25% and 8% from 2002 to 2019, with cocoa farming contributing to a significant portion (World Cocoa Foundation, n.d.). Between 1988 and 2007, Indonesia saw 1.7 million acres of forest cleared for cocoa, accounting for 9% of the country's total deforestation for crops (Nieburg, 2017). Another environmental issue to cocoa production is the adoption of monocultures, which lowers biodiversity, provides fewer ecosystem services, and tend to have lower carbon stocks and negatively impact soil quality (Mithöfer et al., 2017; Schroth and Harvey, 2007; De Beenhouwer et al., 2013; Tondoh et al., 2015; Somarriba et al., 2013). Other non-good agricultural practices (non-GAPs), such as the use of environmentally unfriendly chemicals for pesticides, also contribute to the environmental issues in cocoa production.

Farmers' social and economic well-being is also a central issue, as small farmers in developing countries contribute to almost all cocoa production. The use of child labor has become a concern since the 2000s, especially in Africa (Mithöfer et al., 2017). Previous lows in global cocoa prices also impacted smallholder cocoa farmers' income. To some degree, market inaccessibility also prevents smallholder cocoa farmers from selling their cocoa at a

price that can provide enough income to support their lives. Information on the current prices of cocoa beans is particularly not readily available to farmers (Mithöfer et al., 2018; Saputro, 2020). The saturation in the cocoa sector's lower stream business structure also implies the position of farmers providing mostly only low-value output. Most smallholder farmers in Indonesia, for example, produce unfermented and poor free average quality (FAQ) beans (Beckett, 2004; Panliburon and Meyer, 2004). The lack of GAP education among farmers also contributed to lowered production, complicating cocoa's sensitivity to diseases and weather.

Previous initiatives have appeared in response to the sustainability issues in cocoa. Numerous private and public sectors signed the Abidjan Cocoa Declaration in 2012, a non-binding collective statement of the actors to improve production sustainability and working and living standards. Additionally, the 2015 launch of the Cocoa Action Plan provided a common framework for chocolate producers to achieve sustainability (Consultative Board on the World Cocoa Economy, 2014; Mithöfer et al., 2018). Moreover, the commitment to end deforestation from cocoa production in Ghana and Côte d'Ivoire, the two world's largest cocoa-producing countries, has manifested into The Cocoa and Forests Initiative (CFI), a public-private partnership agreement backed by the World Cocoa Foundation. As of March 2020, 34 companies contributing to 85% of global cocoa usage have signed their commitments to the CFI. Another emerging sustainability trend in cocoa is the establishment of sustainable certification and standards for cocoa. Among

Table 1. Previous Certification Programs for Cocoa

Certification Program	Organic Standard (1990)	Fairtrade Chocolate Certification (1994)	Rainforest Alliance Certified Cocoa (2006)	UTZ Cocoa Certification (2007)
Requirement Highlights	The maintenance of wildlife habitats; prohibits the use of synthetic inputs; encourages farmers to implement ecologically sound production practices.	Activities enhancing biodiversity buffer zones; guarantees minimum prices and premiums to farmers; provide assistance to connect with key industry players looking to source sustainable cocoa; provides democratic governance for farmer organization	The maintenance of wildlife corridors, a minimum of 12 native tree species per hectare, two strata, and a canopy density of 40%; prohibits the use of banned pesticides in favor of biological and natural alternatives; includes compliance criteria on traceability; provides training to smallholder cocoa in environmental, social, and governance aspects to increase productivity.	Good agricultural practices and farm management, safe and healthy working conditions, addressing of child and forced labor, and the protection of the environment; requires at least 12 shade trees per hectare; includes compliance criteria on traceability Merged with Rainforest Alliance Cocoa Certification in 2018.

Case Studies:

Sustainable Cocoa Practices in Indonesia

Sustainable Cocoa Production Program (SCPP)

The Sustainable Cocoa Production Program (SCPP) was a large-scale, donor-backed public-private development partnership (PPDP) project conducted by Swisscontact between 2012 and 2020. SCPP's initial objective was to increase the competitiveness of Indonesia's cocoa sector and the income of Indonesian smallholder cocoa farmers through sector-wide collaboration to improve productivity

and supply chain sustainability. Starting with funding from the Swiss Economic Affairs Secretariat (SECO) and a small number of companies, the initiative developed into the cooperation of seven development organizations, eleven private cocoa purchasers, five implementation partners, and three international and two national sector platforms. Swisscontact acted as the program's moderator, coordinator, and implementer. By 2020, the cumulative funding for SCPP totaled USD 55 million, making it one of the largest donors-businesses partnerships in the commodity sector. SCPP's implementation comes in two primary phases, as summarized in Table 2:

Table 2. Summary of the Sustainable Cocoa Production Program

Phase	First Phase (2012 - 2018)	Second Phase (2018 - 2020)
Key Drive	Indonesian cocoa sector's declining yield, low-quality output, and lack of sustainability despite increasing global demand for sustainable cocoa	The global slump in cocoa prices
Objective	Increasing productivity and sustainability practices in Indonesia's cocoa sector	Facilitating sectoral stakeholders to achieve innovations that encourage supply chain consolidation
Program Highlights	<p>Training and Certification Programs</p> <ol style="list-style-type: none"> 1. Large-scale Good Agricultural Practices (GAP) and Code-of-Conduct (COC) training for farmers to increase cocoa yield, quality, and certification compliance (In collaboration with implementing partners such as Rikolto Wahana Visi Indonesia, Sahabat Cipta, and Migunani, SCPP). 2. Harmonization of training curriculum with the requirements of cocoa certification (in collaboration with Cocoa Sustainability Partnership, a sectoral association, and UTZ and Rainforest Alliance). 3. Over time, training programs included cocoa traders and covered good financial practices, good environmental practices, good nutrition practices, and good social practices. <p>Traceability System</p> <ol style="list-style-type: none"> 1. Creation of CocoaTrace (through engagement with Koltiva), a traceability system made from a combination of a cloud-based traceability platform and farm inspection processes. 	<ol style="list-style-type: none"> 1. Utilization of FarmNetX, a social network analysis tool, to identify farmers with high GAP and certification-compliance adoption who are influential within their network and further build the identified farmers' capacity to disseminate their practices to fellow farmers. 2. Alteration of the training program into a transformative coaching approach, which emphasizes participatory aspects to all adult household members and the role of women in cocoa production. 3. Conversion of cocoa production models to polycultures to promote income diversification from other commodities such as fruit, timber, seasonal crops, and livestock, which helps reduce farmers' susceptibility to cocoa price changes.

After almost one decade of implementation, SCPP has provided some critical improvements in Indonesia's cocoa sector. The program successfully trained 165,301, 35% of whom experienced at least a 75% increase in gross attributable income. In addition, the program registered 91,741 farmers in certification programs. SCPP also increased cocoa production yield by 53% over the 2013 result and reduced the sector's GHG emissions by 24%. In addition to the statistics, the most critical role the SCPP has provided was filling the absence of farmer upgrading, which Indonesia's cocoa sector needed.



Image: istockphoto.com

Mars in Sulawesi

Mars' presence in Indonesia dates to 1996 with the establishment of Makassar's (Sulawesi) first foreign cacao processing facility. Supported by logistics centers in Noling and Wotu, their Makassar factory can process 24,000 metric tons of cocoa beans. Their output is destined for export to China, the United States, and Russia.

In 2017, Mars launched the "Sustainable in a Generation" plan to ensure that human rights are respected, the environment is protected, and everyone can thrive across its value chain (Mars Wrigley, 2020). This takes the form of the 2018-launched "Cocoa for Generations" initiative in the cocoa sector, aiming to improve farmers' and community socioeconomic conditions, reduce environmental impacts, and increase productivity. Overall, Mars committed a \$1 billion investment over a decade on this initiative across its global operations.

Mars' supply chain in Sulawesi demonstrates these initiatives. To strengthen child protection, Mars has collaborated with Save The Children since 2021 to intervene in 30 communities in South Sulawesi under the form of Integrated Community-Based Child Protection at the village level. Mars also partners with Swisscontact and Millennium Challenge Account in launching the NextGen pilot program from 2017 to 2020, encouraging the youth's participation in the cocoa ecosystem. The program utilized positive youth development and implemented a STEM-agricultural curriculum through collaboration with trade schools, the youth community, and other stakeholders. The pilot program has reached 1249 students and connected 30 industries, developing skills, knowledge, and interest among the youth.

Mars targets to make sure that 100% of its cocoa is responsibly sourced and traceable by 2025. In line with this, Mars commits not to buy cocoa from a field deforested after 2014. However, as their cocoa comes from 300 affiliates and goes through several steps before reaching the plant gate, it can be challenging to know their production sustainability. This is where CocoaTrace comes in, as shown in Table 3. CocoaTrace also enhances transparency throughout its four applications and gives farmers information and bargaining power. Augmenting programs, such as a mapping program to delineate farm boundaries and locate facilities, are also crucial in enhancing CocoaTrace's benefits.



Image: istockphoto.com

Table 3. Applications within the CocoaTrade Platform

Users	Application	Utilized Features	Augmenting program
Farmers	FarmCloud	<ul style="list-style-type: none"> • Information on price and alternative buyers • Information on inputs, nurseries, and cocoa doctors • Transaction records and admin. • Receive and execute cashless payments 	<ul style="list-style-type: none"> • Online and interactive mapping program • Non-monetary premium for loyal farmers (from Mars) • Cocoa doctors
Collectors (ex. Koperasi Masagena)	FarmCloud, FarmGate	<ul style="list-style-type: none"> • Cocoa tracing to sustainable sources • Price information • Quality control of farmers' production • Farm, production, and payment management • Receive and execute cashless payments 	<ul style="list-style-type: none"> • Online and interactive mapping program • Farmers' certification
Buyers (ex. Mars)	FarmGate	<ul style="list-style-type: none"> • Cocoa tracing throughout the supply chain • Farm, production, and payment management • Receive and execute cashless payments 	<ul style="list-style-type: none"> • Non-monetary premium for loyal farmers (from Mars)
Cocoa Doctors	FarmRetail	<ul style="list-style-type: none"> • Nurseries and farm input business management • Communication and coaching with farmers • Receive and execute cashless payments 	<ul style="list-style-type: none"> • Cocoa doctors
Koltiva Staff	FarmXtension	<ul style="list-style-type: none"> • Registration of units, administration, and monitoring 	<ul style="list-style-type: none"> • Online and interactive mapping program • Cocoa doctors

Mars further encourages farmers to adopt sustainable and productivity-improving practices, reducing the need to deforest and improve farmers' income. Mars operates two research facilities in Pangkep and Tarengge, focusing on developing superior clones, integrated pest management, land use management, and plant diversification. The plant diversification program involves locally popular species like mango and corn, focusing on shade, early-income generation, and potential groundcover crops. The benefits are twofold: farmers have additional income streams that would be

useful when they are out of cocoa harvest seasons, and land saturation due to monoculture practices is prevented. To further spread the practice, Mars also operates a cocoa academy in East Luwu, offering an all-expenses-paid (apart from travel costs) training for interested farmers. With four Cocoa Development Centers (CDCs), Mars also trains a "Cocoa Doctors" network: cocoa entrepreneurs and specialists who provide advice and guidance for other farmers. While Mars trains them, they are free to conduct their enterprises. Since 2013, Mars' Cocoa Doctors have reached approximately

Koperasi Masagena Luwu Utara

The case of Masagena Farming Coop in North Luwu, Sulawesi, demonstrates what sustainable cocoa can do to collectors and farmers. Established in 2007, the coop had stagnated until it partnered with Rikolto in 2012, along with fellow co-ops and the local government.

The coop decided to undertake the process of certification with the Rainforest Alliance, yet this requires changing farmers' practices and mindsets to comply with the required standards. However, they succeeded thanks to village-level and subdistrict-level coordinators who understand the local context and are well-respected by farmers. From 40 farmer groups (each consisting of around 25 farmers), the cooperative covered 2,400 farmers in 90 groups by the end of the cooperative's certification in 2019.

Certification and its process result in improved quantity and quality and stronger bargaining power for both the cooperatives and the farmers. The price premium is awarded for good-quality certified cocoa, measured by quality control in collecting points. Farmers now realize the importance of quality; for example, farmers no longer combine harvested black beans in one bag. As mandated by certification

standards, farmers can know the prices offered by the buyers without the need for intermediaries, including cooperatives. This is also thanks to the CocoaTrace platform introduced by Mars, who is a major buyer of the coop's Rainforest Alliance-certified wet beans. Farmers have free choice on whom to sell to (especially for the UTZ-certified dry beans) while still retaining the price premium. The margin is quite substantial, reaching Rp2,000 per kilogram compared to the general beans. The farmers also receive a greater share of the sales proceeds, considering transactions are directly conducted by the buyers. The certification also helps the cooperative introduce their product (beans and derivatives) into the international market. Through learning from experience and capacity-building by its partners, the cooperative can handle more complex deals on a more equal footing.

Certification also emphasizes the importance of socio-environmental aspects. For example, farmers placed chemicals near foodstuff or applied them without PPEs near water bodies. These practices are detrimental to the farmers' health and the local ecosystem. However, they become more mindful of chemicals thanks to the certification process. Certification also benefits their family as farmers no longer use child labor or put pregnant women to work. Previously sidelined in the cocoa supply chain, women were educated and empowered, which helped improve smallholder farms' business management. The paradigm that only the old should farm cocoa is being disrupted, with more youth involvement in the sector. Even though the cooperative no longer holds certification since 2019, the practices and benefits still linger today.



Image: Tropical Forest Alliance

Koperasi Kerta Semaya Samaniya Jembrana

Located in Jembrana, Bali, Koperasi Kerta Senaya Samaniya (Koperasi KSS) focuses on sustainable cocoa production and marketing activities. Established in 2006, Koperasi KSS initially experienced a period of decline that resulted in the halting of its operation in 2008. That situation changed after a rebuilding effort in 2011 when Koperasi KSS started incorporating sustainability aspects in its operations.

To certify its farmers, Koperasi KSS began to adopt practices in line with the requirements of the UTZ Certification. The coop introduced enhanced agricultural procedures and initiated the production of fermented beans, which could boost the value of local farmers' output. Over time, Koperasi KSS also includes applying more extensive agricultural practices such as weather prediction and geographical mapping training to withstand the looming effects of climate change on cocoa productivity and agricultural diversification to prevent susceptibility to sectoral shocks.

Additionally, Koperasi KSS undertook efforts to advance the community of local cocoa farmers. Harnessing existing traditional farmer groups called Subak Abian, Koperasi KSS developed an organized network of local cocoa farmers through improvements in structural arrangements and the introduction of better financial management and sound business practices. The work of Koperasi KSS also includes connecting smallholder farmers to cocoa purchasers who are willing to buy high-quality and sustainable cocoa produce at higher prices. Relying on this network, Koperasi KSS was finally able to deliver the training and the monitoring needed in the move towards sustainability, place itself in cooperation with local cocoa farmers, and increase the active participation and bargaining power of smallholder farmers in cocoa business processes.

The work of Koperasi KSS has resulted in several positive outcomes. The number of cocoa farmers under Koperasi KSS grew from around 150 in its initial years to more than 700 by 2022. The combination of better agricultural practices that led to higher-quality outputs, the move to fermented cocoa beans, and the direct sales model increased the average cocoa prices received by local smallholder farmers by around 50%. A continuous effort has let Koperasi KSS receive certifications from several institutions: Rainforest Alliance, the United States Department of Agriculture, and the European Union, with the coop currently in the process of obtaining the Fairtrade Cocoa Certification. The produce from the smallholder farmers under Koperasi KSS has succeeded in directly reaching international markets, with export destinations including the European Union, United States, and Japan.

While the positive outcomes stem from the active hard work of Koperasi KSS, the coop was also able to achieve them through cooperation with several stakeholders. In obtaining certification, Koperasi KSS has previously received funding support from several institutions such as Kalimajari Foundation, BWI, TUV Nord, and the Government of Jembrana Regency. In particular, Kalimajari Foundation, a Bali-based NGO, is still working with Koperasi KSS, providing considerable assistance in the coop's operational processes. Additionally, other assistance provided by The Government of Jembrana also included the provision of cocoa seeds, farming equipment, and lendable funds, and forming of local regulations on cocoa. Koperasi KSS has been able to accomplish its current impacts thanks to the backing of these institutions and the strong engagement of smallholder cocoa producers.

Key Investments Insights

Image: istockphoto.com

1

Indonesia's cocoa sector landscape indicates an opportunity to increase cocoa supply.

While the global demand for cocoa is increasing, Indonesia's cocoa productivity has decreased while its quality stagnates at a low level. In addition, the fact that only one- third of Indonesia's cocoa processing capacity is being utilized implies the need for more cocoa inputs. Thus, there is a strong need for more cocoa supply to meet the increasing demand and further maximize Indonesia's existing cocoa processing capacity.

2

The key challenge is maintaining or increasing the supply of sustainable cocoa more efficiently, given the current problems in Indonesia's cocoa sector.

The decreasing productivity and the low quality of Indonesia's cocoa sector stem from several key problems experienced by smallholder cocoa farmers: the lack of GAP practices and the assistance to move towards it, aging cocoa trees, economic welfare issues, market inaccessibility, and several external factors such as climate change and price volatility. These key problems imply the need for more education and encouragement to increase productivity and sustainability. It also suggests a need for a business model that provides enough benefits to guarantee the welfare of smallholder farmers so that they are incentivized to stay in the cocoa production supply chain. Additionally, the recent downward price shock in the cocoa sector necessitates the importance of implementing these processes more efficiently.

A close-up photograph of a cocoa pod and green leaves. The pod is brown and textured, with some dark spots. The leaves are bright green and have a prominent vein pattern.

Image: istockphoto.com

3

The case studies in Indonesia's cocoa sector provide a basis for a potentially effective model to supply cocoa amidst the current sectoral conditions.

The success of active, close, and intensive assistance to increase the productivity and the sustainability of smallholder cocoa farmers in Indonesia provides a potential approach to adopt in developing Indonesia's cocoa sector. In addition, the collaboration examples from the case studies highlight the potential actors, as most cocoa purchasers cannot conduct the lengthy processes required by the assistance examples. In particular, farmer cooperatives (such as Koperasi Masagena Luwu Utara and Koperasi Kerta Semaya Samaniya Jembrana) and implementing partners (such as Rikolto, Wahana, and Kalimajari Foundation) can effectively assist in farmer trainings and monitoring processes. The success story of SCPP, particularly the use of FarmNetX that further helps in conducting peer-training from influential farmers, the adoption of transformative coaching, and the use of tracing platforms such as CocoaTrace, provide a possible way to enhance the efficiency of the assistance programs further. Additionally, crop diversification in cocoa production helps to reduce farmers' susceptibility to cocoa price downturn shocks. These previous experiences can serve as a basis to upscale Indonesia's cocoa sector development.

4

To increase the adoption of the potential model for Indonesia's cocoa development, local governments can assume the role of consolidator and ecosystem support provider.

Given the need for a sector-wide collaboration to implement the active, close, and intensive assistance model and increase its efficiency, governments at both national and regional levels must step in with a possible role as a consolidator. Programs that strategically involve different stakeholders to participate in the development of the cocoa sector while also fulfilling each stakeholders' objectives can act as a medium for the governments to achieve the needed sector-wide collaboration. Additionally, the governments can also provide the support and the ideal ecosystem needed by the actors within the sector, such as providing and enhancing the accessibility to high-quality seeds and farming tools, extending the availability of different funding options for business upscaling (either by extending government-issued funding options or creating an environment that attracts more funding options from third-party financial institutions), and assisting in the creation and implementation of the legal aspects of sustainable cocoa.

5

Utilizing the existing cocoa practices and stakeholder arrangements in Indonesia, we recommend the adoption of a central hub system, supported by a network of smaller hubs, to support the development of Indonesia's sustainable cocoa commodity sector.

We suggest two main agendas for the hub system, with the first being the establishment of localized certified seedling nurseries. Most of Indonesia's cocoa productions are in Sulawesi and Sumatra, yet the seedling production center is based in East Java. The distance between the seedling sourcing location and the production centers has resulted in several challenges. Firstly, Indonesian cocoa farmers, most of whom are operating from Sulawesi and Sumatra, experience difficulties sourcing certified high-quality cocoa seedlings. Secondly, the seedlings available to farmers are affected by delivery time and processes, resulting in lowered quality. Establishing localized nurseries for certified high-quality cocoa seedlings nearby or within the cocoa production centers in Sulawesi and Sumatra may overcome the two challenges to support further Indonesian cocoa farmers' productivity.

The second main suggested agenda for the hub system is the formation of research centers to explore innovations that can further increase the productivity of Indonesia's cocoa commodity sectors, such as research on pests, locally-suited cocoa seedlings, and climate change. Pests, in particular, pose a threat for Indonesian cocoa farmers as cases of infections may result in large productivity and financial losses that may affect their welfare, undermining the incentive for cocoa production. Additionally, cocoa's sensitivity to small changes in weather and local environment highlights the increasing risk of a decrease in cocoa productivity due to climate change and the importance of adopting practices and having resources that ensure the suitability of local environments in cocoa production. Previous initiatives such as Mars' research center in Sulawesi may serve as a model reference to consider or as a potential future cooperative partner to include in establishing the research and development centers.

Through the hub system, a network of smaller hubs helps distribute the cocoa seedlings from the new localized nurseries and disseminate the innovative practices based on the works of the research center. We recommend a stakeholder arrangement involving the existing actors in Indonesia's cocoa commodity to support the implementation of the system. National and local governments must act as the system's initiator, providing essential foundations that are crucial in the initial phases, such as investments, lands, and cross-stakeholders coordination. Implementing communities, such as local cooperatives and non-governmental organizations that have already acted as the implementers of many previous sustainable cocoa development programs, may serve as the actors maintaining the operational aspects of the system, given their expertise in local field environments. Local universities and research institutions may also be involved to support the formation of research and development centers. Additionally, given their role as the off-takers of Indonesia's cocoa produces, cocoa-product manufacturing companies are another potential actor to involve in developing and implementing the hub system.

Indonesia has the potential to improve the productivity of its cocoa commodity sector. The case studies in this report describe the possible ways to achieve this, providing potentially tangible future economic and welfare impacts. Increased productivity in the cocoa sector can potentially boost regional growth and overall economic conditions. At the same time, better contracts and business models can result in higher value creation and the increased welfare of smallholder farmers. Additionally, better agricultural practices adoption can further improve the sustainability of the cocoa sector. Given its existing actors, it is also important to embrace, involve, and consolidate the different concerns and stakeholders in Indonesia's cocoa sector. A possible manifestation of this need can be achieved through stakeholder communications, and the creation of future roadmaps and investment hubs, among others. Such multi-agent cooperation and coordination would strengthen the pursuit of productivity and sustainability for the sector.

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The Tropical Forest Alliance

TFA is a global multistakeholder partnership platform initiated to support the implementation of private-sector commitments as well as to amplify demand-side engagement in major economies towards the transition to reduced deforestation commodity supply chains. Hosted by the World Economic Forum, TFA partners with 170+ organizations - companies, government entities, civil society, indigenous peoples, local communities and international agencies. TFA operates regional platforms in Latin America, West and Central Africa, China, and Southeast Asia.

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Contact

Contact the Tropical Forest Alliance Secretariat at tfa-sea@ibcsd.or.id

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It is our hope that this study could inspire scaled sustainability commitment and further collective actions across all stakeholders in our journey towards deforestation-free commodities supply chain, other forest-positive shared agendas, and eventually our pursuit towards net zero.

Case Writer

1. Dr. Alin Halimatussadiah
2. Anas Izzuddin
3. Roes Ebara Gikami Lutfi

Institute for Economic and Social Research, Faculty of Economics and Business, University of Indonesia (LPEM FEB UI)

Editor

Rizal Algamar
Southeast Asia Regional Director, TFA

Sri Mariati
Southeast Asia Sustainable Investment Lead, TFA

Publication Coordinator

Leonardo Fachry
Southeast Asia Operation Support, TFA

