

*Research Article*

# The Development of Bali's Cocoa Industry through the Hexagon Model for Local Economic Development (LED): Sorga Chocolate Factory

Zia'ulhaq As Shidqi<sup>1</sup>, Muhammad Abdul Azis<sup>2</sup>, Ni Nyoman Clara Listya Dewi<sup>3</sup>, and Walda Okvi Juliana Ningsih<sup>4</sup>

<sup>1</sup> Universitas Gadjah Mada, Indonesia  
ziaulhaq.as.shidqi@mail.ugm.ac.id



<sup>2</sup> Universitas Gadjah Mada, Indonesia  
muhammadabdul2020@mail.ugm.ac.id



<sup>3</sup> Universitas Gadjah Mada, Indonesia  
ninym2020@mail.ugm.ac.id



<sup>4</sup> Universitas Gadjah Mada, Indonesia (corresponding author)  
waldaokvi2020@mail.ugm.ac.id



*Received 6 September 2021; Revised 5 November 2021; Accepted 26 December 2021; Published Online 30 December 2021*

## Abstract

Local Economic Development (LED) is the foundation for maintaining the national economic cycle and supporting local financial independence. In addition to its tourism sector, Bali has potential in the cocoa industry. In 2009, Bali had 12,850 hectares of cocoa land. Balinese cocoa is also famous for its taste and fermentation quality. Unfortunately, the cocoa industry still has several challenges, such as cocoa farmers being comfortable with the value chain formed by the world's largest cocoa companies, Indonesian cocoa's renowned mixed and low-quality cocoa; access to buyers; different prices between farmers, wholesaler, and lead firms; productivity consistency and quality in the upstream sector; and climate change. This research will examine the cocoa industry in Bali using the Hexagon Model for LED and also analyze the upstream-downstream process of the Balinese cocoa industry. The objective of this article is to examine how the Hexagon model for LED in the Balinese cocoa industry can further activate local economic activities and form a resilient and sustainable local economy. The local government has established regulations for the protection of cocoa farmers in collaboration with Kalimajari and Udayana University, however, optimization in implementing the regulations still need to be done, especially in the government sector

**Keywords:** LED; cocoa; hexagon model; economic independence; sustainability

## Introduction

The COVID-19 pandemic has spread to almost every country in the world. The pandemic has also affected entire sectors, including the economic sector from the national to the regional level. Its spread has left national economies and businesses counting the costs as governments struggle with new lockdown measures to tackle

the spread of the virus. The inhibition of economic activity automatically causes business actors to make efficient efforts to reduce losses, affecting many workers to be laid off. The unemployment rate in Indonesia increased to 6.26% in the first quarter of 2021 from 4.94% in the same quarter the previous year, amid the economic downturn caused by the coronavirus crisis (Trading Economics, 2021). Based on data from the Ministry of Manpower Indonesia, as of April 7, 2020, 39,977 companies in the formal sector decided to lay off their employees. Other effects include the implementation of Work From Home (WFH); the performance of extended Large-Scale Social Restrictions (PSBB); and micro-scale public activity restrictions (PPKM Mikro), which have large impacts on the economy due to limited community movements. These policies automatically affect tourist attractions and businesses that provide the needs of the community. Regions that have been dependent on certain economic sectors as their source of income have also felt the impact of COVID-19.

Until now, various steps and efforts have been taken by the government to encourage economic recovery. One of which is to improve the management of the agricultural sector. Agriculture is one of the approaches that many developing countries take to spur economic growth. Indonesia, also known as an agricultural country, can make its farming sector a leading sector. In addition to its abundant resource potential, most Indonesian people are very dependent on this sector, especially in rural areas. The agricultural industry can function as the nation's food provider, an instrument in government programs, and a strategy for poverty alleviation, a source of employment, and a source of community income to sustain their lives. The agricultural sector has an important role in national and regional economic development (local level).

Bali was one of the areas that was heavily affected by the COVID-19 pandemic. Management of the agricultural sector will greatly assist Bali to recover and advance its economy, and ensure food security for the Balinese people during the COVID-19 pandemic. So far, Bali is better known for managing the tourism sector as one of the main supporters of regional income. However, the COVID-19 pandemic has caught the tourism sector in a paralysis. Thus, encouragement for residents and local governments to switch to the agricultural industry as an alternative source of livelihood and support for the tourism industry, could promote the rise of local Balinese economy. This local economic sector will become an important foundation to keep the stability of the national economic chain, especially during pandemics. The existence of regional economic development can support financial independence at the community level and positively affect the national economy. ILO explained that local economies need to find solutions and alternatives to enhance and strengthen regional competitiveness and comparative advantages to compete on a global scale (Salazar-Xirinachs et al., 2014).

The agricultural sector in Bali has very good potential, one of which is the cocoa industry. which can be one of Indonesia's local economy advantages. According to data by the Bali Province Central Statistics Agency in 2009, the total area of cocoa reached 12,850 with a production of 6,825,979 tons; in other words, the productivity was 772 kg/ha.



Figure 1. Map of Cocoa Distribution in Bali  
Source: <http://regionalinvestment.bkpm.go.id/>

From the interview with Ms. Auditya, in 2009, Bali had 12,850 hectares of cocoa land, and Bali's cocoa beans had a distinctive taste. She also mentioned that Balinese cocoa had high quality after the fermentation process based on the test by Valhrona Chocolate Factory. In 2020, Bali exported 12 tons of cocoa beans from Jembrana to Den Haag, Netherlands, worth 614 thousand dollars during the COVID-19 pandemic. Table 1 describes the total production of cocoa in Tabanan:

Table 1. Cocoa Production Data in Bali Province in 2018-2020

Regency/City	Cacao Production (Tons)		
	2018	2019	2020
Jembrana	2605	2942	3009
Tabanan	981	895	921
Badung	65	88	78
Gianyar	115	107	107
Klungkung	22	22	22
Bangli	90	76	62
Karangasem	173	172	169
Buleleng	762	649	628
Denpasar	-	-	-
Bali Province	4813	4951	4997

Source: Bali Province Agricultural and Food Security Department

Based on the data above, the number of cocoa production in each regency/city in 2020 has either increased, decreased, and remained constant. Tabanan experienced the highest increase during this period with a total of 3,009 tons. At the same time, the lowest was occupied by Klungkung, which was 22 tons. The data shows that the government needs to strive so that all regencies/cities can consistently increase their production year by year. Furthermore, the government needs to make development plans and encourage sectors that can produce measurable programs in dealing with the impact of COVID-19.

This research will use the Hexagon Model for Local Economic Development (LED) to analyze the development process of the cocoa industry in Bali. Through this LED, the researchers will examine the upstream and downstream processes of developing the cocoa industry, such as the participation of local communities in various LED actors in Bali. The Hexagon Model that will be explained in this study consists of: the First & Second triangles (target group and locational factors) which are the key instruments of conventional local economic development, the Third & Fourth triangles (policy focus and synergy and sustainable development) is useful in adding innovation, a broader perspective, and scope into LEDs, and the Fifth & Sixth triangles (governance and process management) covers practical issues in implementing LEDs. Through the Hexagon approach, the researcher will also observe how Bali's cocoa industry has overcome various challenges; a range of efforts to increase the price of Balinese cocoa among farmers, wholesaler (*tengkulak*), and lead firms; value chain maintenance, including finding buyers who can afford large quantities; collaboration and productivity consistency, downstream quantity and quality; the challenges of climate change; efforts to open investment; and the Balinese government's efforts to balance the tourism and agricultural sectors. The Hexagon LED model is expected to activate and stimulate local economic activities, especially during the COVID-19 pandemic, and ensure a resilient and sustainable local economy for Bali.

The researchers will focus on SORGA Chocolate Factory as a case study in this research. SORGA Chocolate Factory is a cocoa company located in Bali. In carrying out its production, SORGA Chocolate Factory has distributed Balinese cocoa products to various countries. SORGA Chocolate Factory also developed an idea for a sustainable cocoa processing industry from the farming process to chocolate bar creation, and even empowering cocoa farmers in Bali. Through interesting findings and arguments, this research is based on authentic evidence by observing companies that have been engaged in the production of cocoa commodities.

Furthermore, this study will also explore how SORGA Chocolate Factory adapts to the COVID-19 pandemic.

## Methodology

This study applies qualitative research to analyze the results. According to Creswell (2014), qualitative research is a type of research that explores and understands the meaning of several individuals or groups of people originating from social problems. Qualitative research, in general, can be used for research on people's lives, history, behavior, concepts or phenomena, social problems, and others.

The type of qualitative research used by the researchers in this article is a case study. A case study is a study that explores a case in-depth, collecting complete information using various data collection procedures based on a predetermined time. This case can be an event, activity, process, and program (Creswell, 2014). This research used interviews and to triangulate the data, a literature review was applied. Data was collected by reviewing concepts, theories, and other information obtained from various sources such as journals, reports, articles, books, documents from the Indonesian Central Statistics Agency, and other materials. In addition, in the interview, researchers used the snowball technique. The first subject is Mr. RRS, as the owner of the Sorga Chocolate Factory. The second subject is Ms. AS, as the representative of the Kalimajari organization, who is assisting cocoa farmers in Jembrana Regency, Bali. The final subject is Mr. DPOS, as a cacao researcher at Udayana University.

## Result and Discussion

Bali is well known for its tourism, however, several areas in Bali are now popular for their agricultural and high-quality cocoa products. Jembrana Regency is one of Bali's areas with agricultural cocoa products that possesses global quality standards. It is proven that amid the COVID-19 pandemic, Bali has successfully exported 10 tons of fermented cocoa from Jembrana to Japan. With total cocoa production in Bali reaching 4,849 tons, the cocoa plantation sub-sector is considered one of the leading commodities for the island. In addition, the development of cocoa plantations in Bali is also supported by a strategic geographical location and is surrounded by quite productive plantations. Based on 2009 from Bali Province Central Statistics Agency, cocoa in Bali reached 12,850 ha, with production exceeding 6,825 tons; in other words, cocoa productivity in Bali advanced 772kg/ha. The production figure is quite high considering that the cocoa commodity has not been a priority in the Bali provincial government at this time. Based on Table 1, data compiled by the Department of Agricultural and Food Security of the Province of Bali also shows that almost all districts in Bali have cocoa plantations that increase in productivity every year. Data by Bali Province Central Statistics Agency, Jembrana Regency has the highest cocoa productivity rate in Bali. In 2017, cocoa production reached 2,689 tons per year. This figure continues to increase to reach 2,942 tons in 2019. Tabanan and Badung Regencies followed suit as regions with high cocoa productivity in Bali.

Apart from the high potential and productivity of cocoa in Bali, tourism is also another factor that makes Bali's cocoa highly competitive. As a tourism gateway, Bali can support the cocoa marketing process, which is wide open to the international market. Therefore, the pockets of tourism objects become a very effective area to introduce processed cocoa products to tourists. The marketing strategy for processed cocoa will be greatly helped by the high number of tourist visits to Bali who have the opportunity to make processed Balinese cocoa as a souvenir. Mr. RRS together with Sorga Chocolate Factory have carried out this strategy to introduce their products. So, quickly, the promotion of processed cocoa is known by many people outside Bali and even the world. Therefore, some tourist attractions with kiosks or souvenir centers are the most appropriate places to market their products and provide opportunities for local farmers to sell their products. Sunday markets, which are usually held in areas that are attractive to foreign tourists such as Canggu, Ubud, Kuta, and Seminyak, can also be a source of marketing for other chocolate products that can attract regular customers quickly. But other

than that, farmers and the cocoa processing industry must think about the variety of processed chocolate products, market share, and the potential for rivals to emerge. These three challenges can influence how tourists view processed chocolate as a must-buy or not. Local government support to strengthen the branding of processed cocoa products is also important, for a strong branding will help processed Balinese chocolate create an impression on the hearts of tourists.

Relying on tourism alone does not seem to be enough to create economic resilience in Bali. Due to the COVID-19 pandemic, the tourism sector has fallen so badly that it has forced many Balinese who have been dependent on the tourism sector to lose their jobs (Bali Provincial Government, 2020). Thus, it is important to view the cocoa plantation sector as a supporting sector for tourism in Bali, given that a main element of Bali's economic sector is agriculture. All parties must pursue the commitment to encourage developing this sector from upstream to downstream as well as possible. In 2020, during Bali's economic downturn, farmers in Jembrana succeeded in exporting 12 tons of cocoa beans to The Hague, Netherlands. In addition, they also exported 10 tons of fermented cocoa from Jembrana to Japan. Bali is known as a cocoa farm with the best fermentation process, so it is not surprising that many cocoa producers abroad deliberately use cocoa beans processed by farmers in Bali to be processed into chocolate on the market. According to research conducted by Valrhona Chocolate Factory, in France, cocoa beans in Bali are considered high quality because cocoa farmers in Bali carry out the cocoa bean fermentation process very well. With world-class quality, Jembrana cocoa beans have a specific price, ranging from IDR 58,000 up to IDR 60,000 per kilogram, and is the highest fermented cocoa price in Indonesia (Balai Karantina Pertanian Kelas I Denpasar, 2021).

### **The Hexagon of Local Economic Development (LED): Sorga Chocolate Factory**

Sorga Chocolate Factory is a cocoa bean processing company in Bali that was established in 2010. For about ten years running, Sorga Chocolate Factory has succeeded in presenting processed cocoa products in the form of chocolate bars marketed at souvenir centers, and has become one of the choices for tourists as a souvenir when visiting Bali. The early history of the formation of this company departed from the world's euphoria for chocolate. Seeing the amount of potential for cocoa farming in Karangasem Regency, Bali, this company makes efforts to empower cocoa farmers in Karangasem. By bringing in expertise from Switzerland and the United States, the potential of Balinese cocoa beans was successfully observed and included in high-quality cocoa beans. The main idea of this company is to present a sustainable cocoa processing industry, which is measured from agricultural and production processes, marketing, to cocoa farmer assistance programs. One thing that is always emphasized and becomes the core value of this company is that the profit from the sales of processed cocoa will return to the farmers.

#### **First Triangle: Target Groups**

The formation and determination of target groups in local economic development are related to the industrialization process in an area (Hidayat & Safitri, 2019). It is also influenced by the conditions in the area. Following the needs of Bali's cocoa farming as described above, the main problem of the cocoa sector in Bali is that the ability to export cocoa beans is still only focused on raw dry cocoa beans. Unfortunately, this causes the cocoa sector in Bali to be highly dependent on demand from the global market. The not yet adequate industrialization of cocoa bean processing is an obstacle for cocoa farmers to develop. If this industrialization is intensified, it can create more employment opportunities and form a higher value chain than the value chain formed on raw dry cocoa beans.

Small and medium cocoa farmer groups still dominate the cocoa sector in Bali. However, not many Balinese cocoa farmers process their cocoa beans directly to cocoa products such as chocolate bars or other products. Ms. AS said that Balinese cocoa farmers are influenced by limited capital, knowledge, and technology, which causes farmers only to sell cocoa beans to mediators. Based on these conditions, the push to increase the

industrialization of cocoa beans is very important. Central and local government support through policy implementation will be able to make this sector a competitive advantage. The establishment of farmer cooperatives and training centers for cocoa bean processing is now needed to increase the quantity and quality of Bali's cocoa beans. In the aspect of target groups, it is hoped that when LED is implemented in the cocoa sector, it is necessary to design how local governments determine industrial partnership policies between small-scale and large-scale industries. Foreign investors will greatly influence good and effective business development. However, the presence of regional foreign investors determines the industrial partnership policy between small-scale and large-scale industries. Therefore, foreign investors will greatly influence good and effective business development. However, the presence of foreign investors should not be contradictory to efforts to develop local aspects in this sector.

### Second Triangle: Locational Factor

In a simple context, the location factor can be interpreted in the form of infrastructure: communication, roads, ports, transparent licensing processes, reasonable business costs, availability of resources, supporting industries, business climate, and geographical aspects (Hidayat & Safitri, 2019). Geographically, Bali is endowed with geographical constructs and landscapes that have a low or high potential for the economic development of plantations. In terms of location, Jembrana and Tabanan regencies have high potentials because their residents have always been cocoa bean farmers and have become the leading commodities in these two areas. In terms of quality, Balinese cocoa beans have their characteristics, which distinguish them from other regional cocoa beans and is a plus in marketing. In addition to the above conditions, Bali as a world tourism area is the most supportive factor in this aspect. The target buyers of the chocolate companies are mostly tourists. Mr. RRS thinks that Bali is undoubtedly a perfect land for chocolate companies to market their products more efficiently as a gateway for world tourism. With so many souvenir centers and tourism objects, marketing of processed chocolate products has become easier and, at the same time, can reach a higher amount tourists more easily.

Furthermore, the number of hotels, restaurants, and other tourism centers will help producers of processed chocolate products to introduce their products through endorsements or become the main menu or dessert menu for dishes at hotels and restaurants. In terms of infrastructure, Bali provides convenience in moving raw materials from upstream to downstream. The area of Bali island, which is not too wide, causes the process of moving raw materials to be more efficient. In addition, good roads, supported by minimal traffic jams, are advantages that can make the distribution process of raw materials run more effectively and efficiently.

### Third Triangle: Policy Focus and Synergy

At this stage, it is necessary to have a policy that focuses on investment, promotion, business competition, the role of regional companies, business networks, labor information, and skill development. In addition to policies that take sides, synergies among all related parties will form a good local economic network. Currently, chocolate in Bali has experienced an increase, thanks to the empowerment given to cocoa farmers. The cocoa produced first undergoes fermentation to produce quality chocolate with a distinctive aroma and taste so that it has high selling value when exported. Bali's name provides its own added value for Balinese chocolate, namely branding that is easily recognized by foreign tourists and increases the selling price of the chocolate. The high selling price of Balinese chocolate is evident in Sorga Chocolate's numerous enthusiasts. Supporting policies are accompanied by synergies with all parties such as the Regional Government with its regional policies; banks/cooperatives by providing capital; business actors assisting marketing and sales; researchers providing research results in the provision of superior cocoa seeds and appropriate harvest processing techniques; farmers with the hard work of growing cacao to produce Balinese chocolate with a distinctive aroma and unique taste. Mr. Regal said that the production of Balinese chocolate will positively impact the Balinese people, namely through the creation of jobs and thereby reducing poverty.

#### Fourth Triangle: Sustainable Development

Economic, social, and environmental development is needed in the sustainable development dimension. On the financial side, it is necessary to guarantee the capital of the cocoa farmers, ensure the buyers of chocolate, and guarantee the quality of the chocolate. On the social side, the existence of the chocolate industry will provide welfare for farmers and the surrounding community. On the environmental side, creating an environmentally friendly chocolate industry, starting from planting, harvesting to selling, to maintain benefits and good ecological sustainability. Looking at Sorga Chocolate's production practices, they have adopted sustainability principles where chocolate production from upstream to downstream is carried out without compromising the environment, such as using natural pesticides. All parties need to commit to creating a sustainable chocolate industry so that Bali is known for its delicious and distinctive chocolate, as well as its environmentally friendly chocolate industry. In LED, it is a matter of profit and how the economy can harmonize with environmental preservation.

#### Fifth Triangle: Governance

The cocoa industry in Bali has connected a network of actors, namely the Bali Regional Government, Balinese cocoa farmers, NGO (Kalimajari Bali), cocoa factories (Sorga Chocolate), Public-Private Partnerships (Banks), researchers, and buyers both domestically and internationally. The LED initiative was formed by seeing the potential of cocoa in Bali, which so far has been considered only as complementary cocoa. After being researched by experts from Switzerland and the United States, Balinese cocoa has a unique taste and premium quality when fermented. Thanks to the knowledge of cocoa plantations and proper processing, premium quality Balinese cocoa is produced. The local government of Bali supports this activity by creating a flexible policy. The NGO empowers cocoa plantation knowledge among local Balinese cocoa farmers, including marketing in the international level to introduce Balinese cocoa and find potential buyers. Cocoa farmers formed in cooperatives need capital, and thanks to the potential of cocoa and the purchase of this cocoa, the bank is willing to provide capital assistance in developing this business. A researcher from Udayana University gave the recommendation to the Bali Regional Government for the cocoa industry and farmers so it could protect the farmers from competitive threats. The cocoa industry in Bali shows that LED has formed a collaborative network between actors in improving the local economy. The support of all parties for the local cocoa industry in Bali offers the opportunity and motivation to create a promising local sector. The provincial government does support the initiation of LED. However, Mr. RRS suggests that the rules are still complicated, and long bureaucracy can hamper the business processes that are carried out, so more effective administrative flexibility is needed to support LED.

#### Sixth Triangle: Process Management

The initiation of LED in the cocoa industry in Bali started with Indonesian chocolate, which is ranked second lowest in quality, even though it is the 3rd largest producer in the world. Upon analysis, the researchers found that cocoa, especially in Bali, has a unique taste and premium quality when fermented. However, the collaboration between NGOs, the local government of Bali, and the support of local Balinese cocoa farmers still require plans to recognize Balinese cocoa's potentials and improve the local economy in Bali. In early 2016, Sorga Chocolate Factory was formed to run the local cocoa industry business process in Bali. This local cocoa industry requires process management to describe local economic business processes from upstream to downstream through careful planning towards the concept of a sustainable chocolate industry to produce high-quality Balinese chocolate. Planning and partnerships with all stakeholders such as local governments, banks/cooperatives, researchers, farmers, business actors, and NGOs are needed to create synergy in supporting Balinese chocolate, which is highly competitive in foreign countries.

In process management, apart from planning, LED also pays attention to motivation and mobilization, implementation, as well as reflection and adjustment. First, motivate and mobilize farmers to plant cocoa, which must be fermented to produce high quality and sellable chocolate. Furthermore, the plans to build a sustainable chocolate industry must be implemented in concrete actions in the future. Finally, it is necessary to reflect or evaluate the selected seeds and yields, and make any necessary adjustments to keep the quality of the chocolate the same and remain in high quality.

### **Initiative to Implement Local Regulations for the Protection of Cocoa Farmers in Jembrana: Collaborating Research with Academia**

Cocoa farming, especially in the Jembrana Regency area, faces several challenges related to the management of the cocoa supply chain management. Synchronization is needed with campus institutions to collaborate on research proposals for cocoa farmer protection regulations. The Faculty of Agriculture of Udayana University and Kalimajari have previously conducted research to examine the relevant forms of law to maintain cocoa production and distribution patterns from upstream to downstream. The academic study then resulted in a policy outlined in a Regional Regulation (*Peraturan Daerah* or *Perda*) document, namely the Jembrana Regent Regulation Number 43 of 2015, concerning the Development of the Jembrana Regency Cocoa Plantation Area. In this context, according to Mr. DPOS, higher education institutions have an essential role in initiating regional regulations that are studied academically and provide strategic recommendations for policymaking. It is the implementation of one of the Tri Dharma of Higher Education, namely community service.

The establishment of this academic study is an initiative built between Kalimajari as an NGO, the Jembrana Regional Government, and Udayana University to protect cocoa farmers in the Jembrana Regency area. The regulation on protection should be enacted considering that cocoa cultivation in Jembrana already has a sound and sustainable system. It is indicated by the establishment of a cocoa farmer cooperative that is self-supported by farmers with the NGO Kalimajari. However, the problem lies in implementing these regulations, which requires synchronization between local governments and farmers. Still, due to differences in regional leaders' policy focus, the implementation is hampered. In addition, no farmer partnership network can implement a profit-sharing and risk-sharing system. So far, the cocoa cultivation process is still only on-farm, and less attention is paid to the off-farm process. The profits are off-farm, often controlled by large companies that do not want to share risks. The risks are usually borne by cocoa farmers, which can be seen from the potential for crop failure or poor quality of cocoa beans. To calculate the profit and loss, risks should be borne by both farmers and the cocoa bean processing companies, and profits should be shared. Therefore, the government is obliged to protect farmers, provide appropriate access, and ensure the sustainability of cocoa production and farmers' livelihoods through proper regulations.

Leadership in government institutions plays a vital role in regards to the implementation of regulations, because it relates to the continuity system of a work program. As we know, each regional leader has different work program priorities. For instance in Jembrana, the leadership shift led to a change in priorities. In addition, there are still differences in opinion between the government and other cocoa industry players upon viewing cocoa commodities in Bali. As a result, the development of the cocoa industry has been delayed. The existence of a regional regulation is a strategic step by the government to harmonize the development of the cocoa industry, including maintaining its sustainability. In addition, a regional regulation as a legal basis can protect farmers, where each cocoa industry's development activity can be programmed every year, from financing; establishing, producing and marketing networks; to supply chain security. Another point that is no less important than the *Perda* is to help and protect farmers in sharing profits and risks. Farmers have guidelines for setting prices, producing competitive products.

In the end, the study of academic texts conducted by the Faculty of Agriculture, Udayana University, which



resulted in the *Perda* draft, shows that collaboration with the education sector plays an essential role in assisting the government, farmers, and various related parties in developing the cocoa industry in Bali. This contribution provides protection, especially for farmers who are still vulnerable to external competition. It is hoped that with the regulation, farmers' profits can be raised to increase regional income.

### **Challenges of Cocoa Industry Processing in Bali**

The success story of advancing Balinese cocoa in the global market must be accompanied by several challenges that come from internal and external factors. First, farmers are already comfortable with the value chains formed by the world's major cocoa companies. The appointment of Balinese cocoa as one of the leading commodities that will start to be prioritized needs encouragement from all parties in order for that marketing to run well. The existence of the value chain itself can help in mapping cocoa business' challenges from upstream to downstream. In addition, the value chain is important to analyze in order to understand the process of obtaining raw materials, processing products into the hands of consumers, and post-harvest maintenance. Unfortunately, the cocoa value chain in Bali has been determined by big companies that use Balinese cocoa as raw material in making their cocoa products. This situation, on the one hand, provides a sense of comfort to the farmers. They no longer need to think about the supply and demand, the form of marketing, and the resilience of post-harvest cocoa farming. However, the actual situation shows that the value chains formed by these large companies only provide large profits for these companies. Big farmers are likely to get only a small part of the profits. Once the value chain has been established, the potential for the company to exploit the resources is possible.

Second is how cocoa farmers are now expected to provide high-quality cocoa beans following global market demand. Ms. Auditya said that although cocoa farmers can export more than 6000 tons of cocoa beans per year to meet global market demand and become a significant player in the worldwide supply of cocoa beans, much more production is needed. Unfortunately, cocoa farmers in Bali have not been able to do so. The narrow land for agricultural development and the limited supply of cocoa beans are two factors that make Balinese cocoa farmers unable to become major players in the global cocoa market. Third, there are still price differences between farmers, mediators, and cocoa bean processing companies. The long supply chain causes farmers to gain little profit and tend to lose. The price game from the middlemen causes a price disparity that is too high. This inequality causes not only farmers to be harmed but also consumers. Consumers are forced to pay higher costs for cocoa products. Because many parties are disadvantaged, the government needs to improve the cocoa bean trading system, for example, by ensuring the stock of cocoa beans or providing a more modern means of storing cocoa beans. It is important to reduce inefficiencies which ultimately affect price fluctuations.

Fourth, the Omnibus Law on Job Creation opens up opportunities for foreign direct investment (FDI) in the agricultural sector, which can be seen from several changes, including abolishing foreign direct investment (FDI) restrictions on horticultural and plantation commodities. In Law Number 13 of 2010 concerning Horticulture and Law Number 39 of 2014 concerning Plantations, FDI is limited to 30 percent. So far, investment in the agricultural sector is more restrictive than other sectors. Data from Organization for Economic Cooperation and Development (OECD) shows that Indonesia's openness index to FDI is 0.345. Meanwhile, Indonesia's openness index to investment in the agricultural sector is at 0.389 with a scale of 0, meaning open, to 1, meaning closed (CIPS Indonesia, 2020). The investment invitation must ensure the transfer of technology and knowledge. Indonesian workers also benefit from investors. Investment must also comply with applicable labor regulations, as well as provide environmental protection. The Omnibus Law on Job Creation will also encourage plantation product processing businesses to access raw materials easily. The management of business permits is also facilitated through the central government.

The agricultural sector is one of the sectors that grew positively during the COVID-19 pandemic. The existence of

opportunities to increase investment in the farming industry can positively impact the welfare of Indonesian farmers and increase domestic agricultural production. However, the interest of farmers and the efficiency of the farm sector in Indonesia are still far from expectations. Several things need to be ensured with the entry of investment in the agricultural industry, including the development of agricultural research and innovation, transfer of technology, and knowledge to support agrarian modernization. When accompanied by these things, the farm sector can enjoy increased productivity, especially in high-value commodities. In addition, there has been an increase in quality, such as coffee and cocoa yields. If the harvest is certified, expansion of market access can occur. The reason is that Good Agricultural Practice certification, or sustainable cropping systems are in demand in the European market. Based on the Indonesian Investment Coordinating Board (BKPM) data, FDI in the agricultural and forestry sector in 2018 was IDR 24.5 trillion and decreased in 2019 to IDR 13.4 trillion (CIPS Indonesia, 2020). In the first half of 2020, the realization has reached Rp 9.8 trillion. But the increase will be slow due to the COVID-19 pandemic. Looking at the current condition of cocoa farming in Bali, foreign investment is needed in order for cocoa farming to be able to penetrate the international market. Domestic consumption alone is not enough because domestic demand for cocoa is still not as high as in foreign markets. The incoming foreign investment also helps make it easier for farmers to sell high-quality cocoa, which is mostly favored by foreign consumers, especially tourists who visit Bali.

Fifth, creating an investment generating scheme for cocoa plantations that have forward linkages. It is related to the understanding between cocoa farmers and banks, which needs to be intensified and useful to prevent high expectations. The scheme that has been run by cocoa farmers in Jembrana Regency, by exchanging agricultural products for money, has become an alternative that makes it easier for farmers to access financial resources. A synergized policy in this context is needed so that the system of lending and borrowing funds is structured systematically. One of the most helpful steps is providing agricultural microcredit programs at low-interest rates and without collateral. This scheme that facilitates farmers will be very important for developing agriculture and steps in expanding the market. At least farmers can repay the loan in installments or wait after the harvest takes place. However, a common understanding is needed, especially between cocoa farmers in Bali and the banking sector. There is an understanding that cocoa farmers in Bali are not so focused on quantity. Still, in regards to quality, the obstacles that may occur in the future are about meeting stock or demand from domestic and international markets.

Furthermore, the sixth challenge is climate change, which is also an external factor that can affect farmers' cocoa bean production every year. The erratic rainfall due to global warming causes a prolonged dry season so that the stock for irrigating cocoa plantations is reduced. Humidity also causes the spread of fungi on cocoa plants to become more massive. Considering that cocoa plants are very susceptible to plant viruses, fruit root causes plant stem cancer. So, it is important for farmers to at least think about cocoa bean care strategies that can adapt to the rapid development of climate change.

## **Conclusion**

Through the Hexagon of Local Economic Development (LED), the government and LED actors can make a roadmap for managing the cocoa industry sector in Bali. The Hexagon of Local Economic Development (LED) is applicable both during the pandemic, encouraging economic recovery after the pandemic, and can be an alternative for economic development under any circumstances. In the Hexagon model of Local Economic Development, six points become the benchmark for developing the cocoa industry in Bali. First, target groups; in the cocoa industry in Bali, the target groups are small and medium farmers. These farmers have not been able to process the cocoa beans that have been harvested due to limited capital, knowledge, and technology, which causes farmers only to be able to sell cocoa beans to mediators. Second, locational factors; Bali has an advantage in this factor because Bali, as a world tourism area, has the most supportive factor in its geography.

The target buyers of the chocolate companies are primarily tourists. Third, policy focus and synergy; the cocoa industry in Bali has been connected and synchronized with the policies given by the local government, banks/savings and loan cooperatives, and farmers to the chocolate industry players in Bali. Fourth, sustainable development; from an economic, social, and environmental perspective, the cocoa industry in Bali has become an important focus. Fifth, governance; some obstacles are obtained. Rules that are still convoluted and time consuming can hamper business processes, so more effective administrative flexibility is needed to support LED. Lastly, process management; Planning to build a sustainable chocolate industry must be implemented in real terms. It is necessary to reflect or evaluate the seeds and yields, and make adjustments to maintain a high cocoa quality. If we look at prior studies, the use of The Hexagon of Local Economic Development (LED) can indeed help map out resources and needs as well as challenges and obstacles that need to be fixed.

By implementing The Hexagon of Local Economic Development (LED) at the local level, Bali can increase collaboration between LED actors in managing the upstream-downstream industry, including Balinese cocoa branding to increase the selling value of cocoa in Bali. In addition to selling seeds, cocoa has many processing potentials and can be utilized from food and beverage to beauty products. Farmers' accompaniment is needed to improve the ability of local farmers to produce cacao better. Ease of bureaucracy will create more effective and efficient business processes. The omnibus law is also expected to support foreign investment in improving the cocoa industry in Bali. This paper mainly focuses on implementing The Hexagon of Local Economic Development (LED) on Balinese cocoa with Sorga Chocolate Factory as the case study. This paper needs a more profound and more comprehensive future analysis by expanding the object of research such as other local industries in Indonesia. We hope that The Hexagon of Local Economic Development (LED) can be implemented in other industries to build economic sovereignty in Indonesia.

## Acknowledgements

This article does not receive funding from any party.

## References

- Balai Karantina Pertanian Kelas 1 Denpasar. (2021). *Penuhi Persyaratan Ekspor, Kakao Jembrana Tembus Pasar Jepang*.
- Bali Province Central Statistics Agency. (2009). *Data Pertanian Kakao di Provinsi Bali*.
- Bali Province Central Statistics Agency. (2021). *Produksi Kakao Menurut Kabupaten/Kota di Provinsi Bali (Ton) 2018-2020*.
- Bali Provincial Government. (2020). *Kebijakan Pemulihan Pariwisata dan Perekonomian Terkait Virus Corona*.
- CIPS Indonesia. (2020). *UU Cipta Kerja Buka Peluang Peningkatan Investasi Pertanian Sekaligus Ancam Kelangsungan Lingkungan*. Center for Indonesian Policy Studies. <https://www.cips-indonesia.org/post/uu-cipta-kerja-buka-peluang-peningkatan-investasi-pertanian-sekaligus-ancam-kelangsungan-lingkungan>.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Method Approaches*. SAGE.
- Hidayat, A., & Safitri, P. (2019). Pengembangan Komoditas Rumput Laut Nusa Tenggara Barat Dengan Model Hexagon Untuk Pembangunan Ekonomi Lokal. *Jurnal Kebijakan Sosial Ekonomi Kelautan Dan Perikanan*, 9(1), 45. <https://doi.org/10.15578/jksekp.v9i1.7359>.
- Salazar-Xirinachs, J., Irmgard, N., & Kozul-Wright, R. (2014). Transforming Economies: Making Industrial Policy Work for Growth, Jobs and Development. *In International Labour Office*. International Labour Organization.
- Sari, A. (2021, April 17). How to Assist Cocoa Farmers in Jembrana Regency, Bali. (M. A. Z. A. Shidqi, Interviewer).

- Star, R. R. (2021, April 13). Experience in Building Sorga Chocolate Factory. (Z. A. Shidqi, M. A. Aziz, N. L. Dewi, & W. J. Ningsih, Interviewers).
- Suardi, I D. P. O. (2021, April 13). Chocolate Industry Opportunities in Bali. (Z. A. Shidqi, M. A. Aziz, N. L. Dewi, & W. J. Ningsih, Interviewers).
- Trading Economics. (2021). *Indonesia Unemployment Rate*.  
<https://tradingeconomics.com/indonesia/unemployment-rate>.

## Author Biographies

**Zia'ulhaq As Shidqi** is a graduate student of International in Universitas Gadjah Mada. He already involved in various research related to International Studies focus in global political economy, circular economy and international environmental issues. He is also a civil servant at Indonesia's National Government Internal Auditor. He can be reached anytime via email at [ziaulhaqas.shidqi@gmail.com](mailto:ziaulhaqas.shidqi@gmail.com) or [ziaulhaq.as.shidqi@mail.ugm.ac.id](mailto:ziaulhaq.as.shidqi@mail.ugm.ac.id).

**Muhammad Abdul Azis** is a graduate student of International Relations at Universitas Gadjah Mada. He is interested in numerous researches related to non-traditional and traditional security, Southeast Asia politics, global value chains, global political economy and commodity analysis. He can be reached anytime via email at [maaazis0150@gmail.com](mailto:maaazis0150@gmail.com) or [muhammadabdul2020@mail.ugm.ac.id](mailto:muhammadabdul2020@mail.ugm.ac.id).

**Ni Nyoman Clara Listya Dewi** is a graduate student at Master of Arts in International Relations, Gadjah Mada University. She is also a National Geographic Explorer. Her research interests are related to circular economy issues, global political economy and gender studies. She can be reached at [ninym2020@mail.ugm.ac.id](mailto:ninym2020@mail.ugm.ac.id), [nyomanclara@gmail.com](mailto:nyomanclara@gmail.com).

**Walda Okvi Juliana Ningsih** is a graduate student of International Relations at Gadjah Mada University (UGM). Her research interests include international development cooperation, international political economy, social and cultural issues that are related to identity and gender studies. She can be reached via email at [waldaokvi2020@mail.ugm.ac.id](mailto:waldaokvi2020@mail.ugm.ac.id) or [waldaokvi@gmail.com](mailto:waldaokvi@gmail.com).