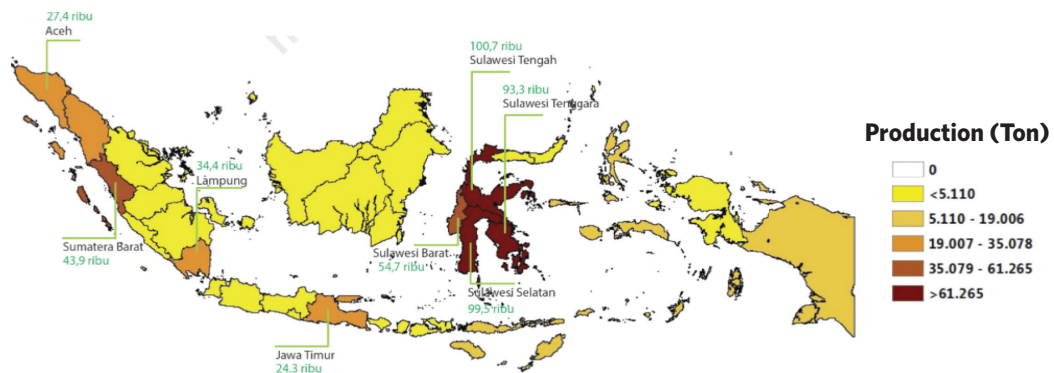




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THE RISE OF CACAO FROM EAST KUTAI

Cocoa Production Map in Indonesia



The cocoa plant (*Theobroma cacao L.*) is a superior sector/commodity that plays a role in increasing community welfare. The area of cocoa plantation in Indonesia currently reaches around 1.5 million hectares. The largest cocoa productions are located in Sulawesi, North Sumatra, West Java, Papua, East Kalimantan, Lampung, and West Sumatra, with 75% of the production is taking place in Sulawesi. Most of them come from smallholder plantations (97%), 1% from large private plantations, and 1% from large state plantations (Central Statistics Agency, 2019).

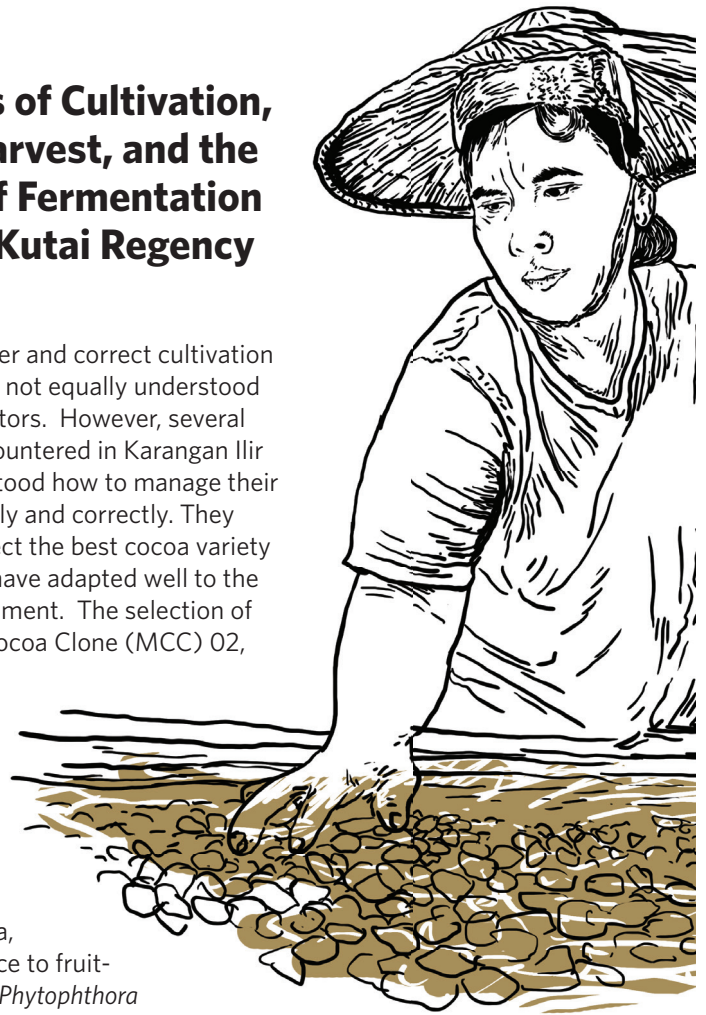


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Although the area is relatively smaller compared to Sulawesi and Sumatra, cocoa is still an important commodity for farmers in East Kalimantan. The primary cocoa cultivation centers in East Kalimantan are located in Berau Regency (Sambaliung sub-district), East Kutai Regency (Busang sub-district), and Mahakam Ulu Regency. According to the data from the Provincial Plantation Office of East Kalimantan 2019, the area of cocoa plantations is 1,677 ha in Berau Regency and 3,415 ha in East Kutai Regency, with low productivity of only about 550 kg per ha on average.

Potraits of Cultivation, Post-Harvest, and the Spirit of Fermentation in East Kutai Regency

The proper and correct cultivation methods are not equally understood by all cultivators. However, several farmers encountered in Karang Ilir have understood how to manage their lands properly and correctly. They can also select the best cocoa variety clones that have adapted well to the local environment. The selection of Masamba Cocoa Clone (MCC) 02, Sulawesi 2, and Lindak are the best choices due to their high level of productivity, strong aroma, and resistance to fruit-rot disease (*Phytophthora palmivora*) during the rainy season (field survey in August 2020). Post-harvest processing through fermentation has not been conducted optimally because the market has not yet inclined to purchase fermented cacao beans. The trading system is still dominated by random sale of cocoa beans without adding value to the cocoa beans.



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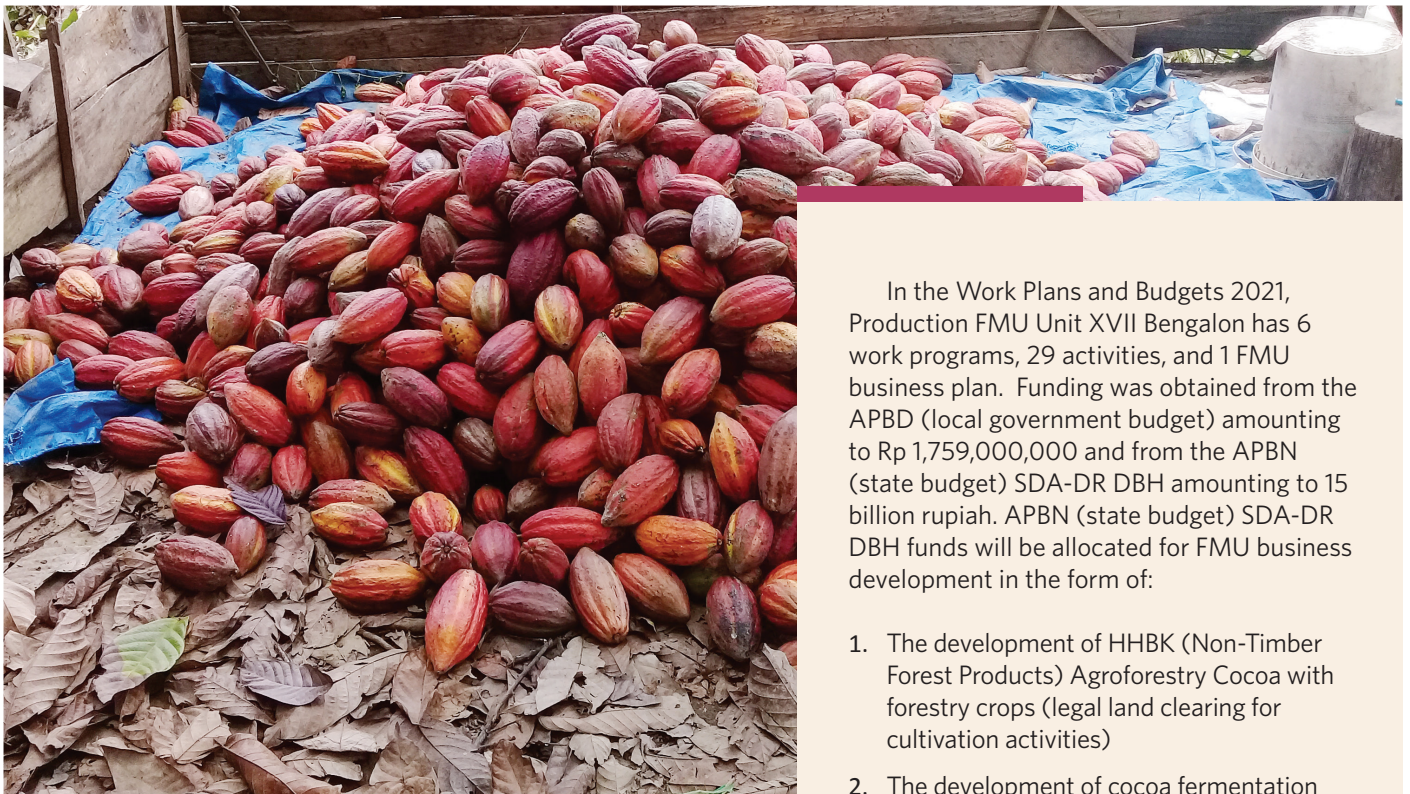
Independent FMU and the Cocoa Industry Downstreaming



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The East Kalimantan Provincial Forestry Service, through Forest Management Unit (FMU) Bengalon, plans to develop the Cocoa Processing Business from beans into semi-finished products and various other final chocolate products. This program is called the "Independent FMU Program". This program will encourage the development of cocoa cultivation to support the availability of raw materials needed in the downstreaming process of the cocoa industry in East Kalimantan, particularly fermented cocoa beans.

This Independent FMU program is expected to encourage increasing uptake of fermented cocoa beans, designating processed products as "icons," and learning the upstream to the downstream process of cocoa management and chocolate processing. The last goal is to increase PAD (Regional Original Income) from the cocoa sector and return it to improve the local community welfare.



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In the Work Plans and Budgets 2021, Production FMU Unit XVII Bengalon has 6 work programs, 29 activities, and 1 FMU business plan. Funding was obtained from the APBD (local government budget) amounting to Rp 1,759,000,000 and from the APBN (state budget) SDA-DR DBH amounting to 15 billion rupiah. APBN (state budget) SDA-DR DBH funds will be allocated for FMU business development in the form of:

1. The development of HHBK (Non-Timber Forest Products) Agroforestry Cocoa with forestry crops (legal land clearing for cultivation activities)
2. The development of cocoa fermentation business (selling fermented dry cocoa beans)
3. The management of processed cocoa products (chocolate bar/bean to bar and cocoa mass/liquor). These products are selected based on the availability of fundings to obtain a high-quality machine. These processed cocoa products will be used as regional icons, as well as a prototype for processed cocoa products and cocoa liquor as liquors from fermented cocoa beans are still scarce in the market.



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The FMU Business Design Chart

200 hectares

1.200 wet ton every year

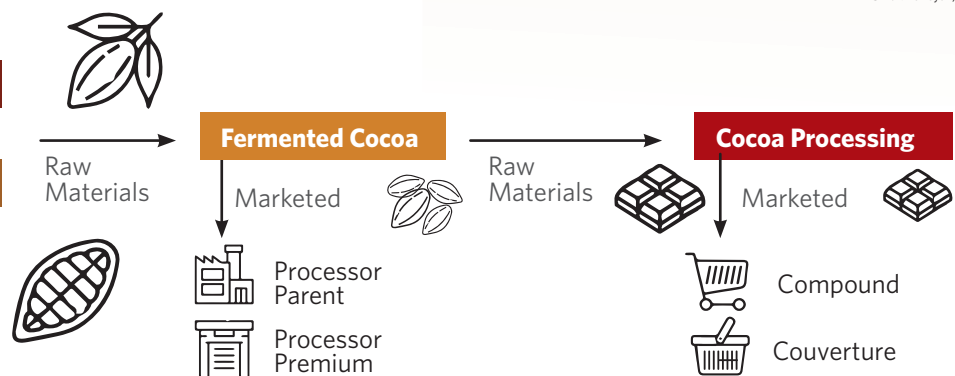
FMU Cocoa Plantation



Smallholder Cocoa Plantation

124 hectares

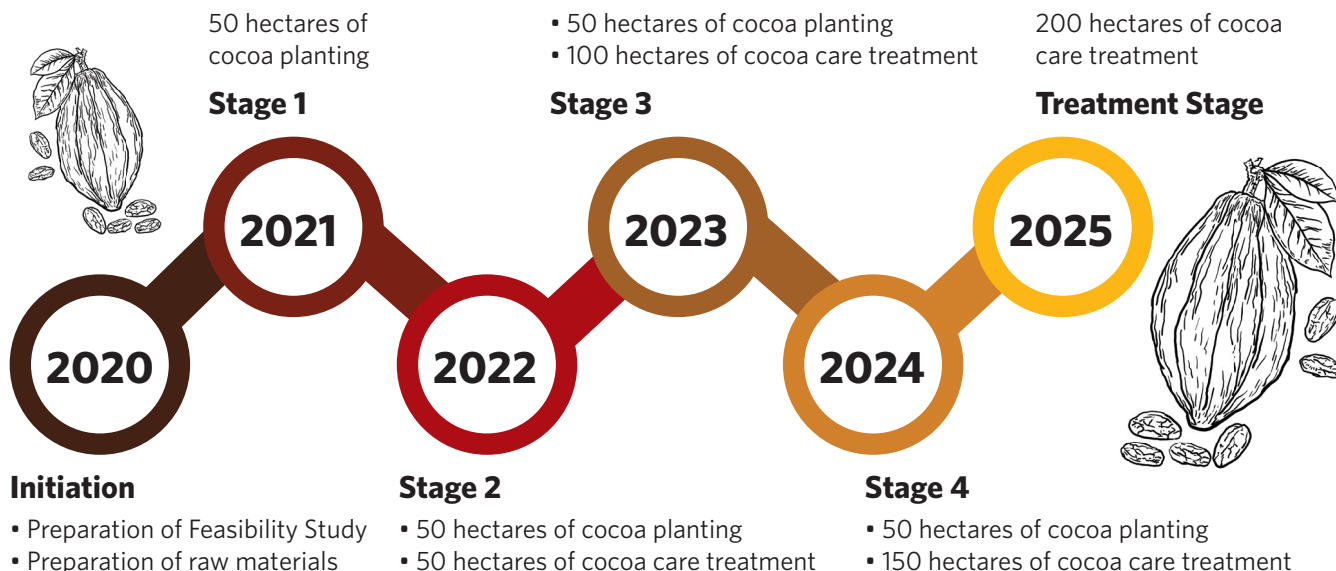
600 tons of wet every year



Upstream

Downstream

Development Mechanism of NTFP from the 200 ha Agroforestry Plantation Development Plan



A. Business Feasibility Calculation

The calculation of the feasibility of an FMU business includes plantation business, processing and selling fermented cocoa beans, and cocoa processing. The first calculation is adding all the investment processes of the three businesses as mentioned earlier. The net income is the total income after the deduction of the entire expenses. These expenses consist of depreciation costs and operational costs. A summary of the analysis can be seen in the following table:

No	Analysis Tools	Results	Standard	Conclusion
1	Payback Period (PP)	6 years	<15 years	Appropriate
2	Net Present Value (NPV)	88,461,280,266 (positive)	> 0	Appropriate

B. Positives Response from Related Parties (Buyers)

Chocolate Monggo

Jogjakarta

Samples of fermented cocoa beans from Karangas Ilir have been received by Chocolate Monggo - Jogjakarta, and they will be prepared for *single origin* production.

Ubud Raw

Bali

Has provided a review related to the quality, and it will be discussed in further discussion.

Primo Chocolate

Bali

Has committed to conducting a testing trial and expressed interest in collaborating.

About YKAN

Yayasan Konservasi Alam Nusantara (YKAN) is a science-based organization which was established in Indonesia in 2014. With the mission to protect lands and waters on which all life depends, YKAN provides innovative solutions for realizing harmony between nature and humans, through effective management, non-confrontational approaches, and building collaborative partnerships with all stakeholders for a sustainable Indonesia.

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