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# Cassava Industrialization: Lampung Commodity Export Strategy

**ABSTRACT**

*This study examines cassava industrialization in Lampung as an effort to strengthen the agricultural commodity for a new export strategy. Cassava can be utilized for various industrial purposes, thereby supporting the farmers' economy. The findings indicate that cassava exports can meet global market demand and generate added value for farmers. The study employs the Experiential Learning Cycle (ELC) method, involving farmers directly in a participatory process that spans practical activities and discussions to field implementation. It concludes that the strategies implemented enhance the competitiveness of Lampung's cassava products in the global market and reinforce the region's role as a major cassava production hub in Indonesia.*

**Keywords:** Cassava, Industrialization, Lampung Export, Commodity

## INTRODUCTION

Cassava production in North Lampung highlights the fact that Lampung Province as a whole is one of Indonesia's major cassava production hubs. Data from Statistics Indonesia (BPS) for 2020 indicate that cassava production in Lampung fluctuated between 2016 and 2019—experiencing declines in certain years—before rising in 2020 to reach a total of 6,649,709 tons. Lampung ranks first nationally in terms of cassava cultivation area, with approximately 244,023 hectares dedicated to the crop; North Lampung Regency itself possesses one of the largest cassava cultivation areas in the province and ranks second in terms of production volume (Elmita Sari et al., 2024).

Regarding production, land area and productivity levels are critical determinants of the success of cassava farming in North Lampung; extensive land use and the optimized application of agricultural inputs, such as fertilizers, can boost crop yields and farmers' incomes. However, major challenges include price instability and a lack of transparency in the *rafaksi* (deduction) system, wherein processing industries often apply price cuts based on moisture content and contaminant levels without clear standards, thereby systematically disadvantaging farmers. To support the development of this commodity, the government—through Law Number 13 of 2010 concerning Horticulture—provides legal instruments for market intervention, including price stabilization and protection against monopolistic practices that harm smallholder farmers. Facilities such as warehouse infrastructure, accurate and real-time market price information systems, as well as cold storage and primary processing units at the sub-district level, are expected to enhance distribution efficiency, thereby reducing post-harvest losses and increasing the value-added of the cassava harvest (Handoko, 2025, n.d.).

According to data from StatLedger (2023), Indonesia produced approximately 17.99 million tons of cassava in 2022, with a significant portion originating from the Lampung region. A Commodity's competitiveness is determined not only by production volume but also by product quality, distribution efficiency, innovation, and infrastructure support. Analyzing this commodity's competitiveness requires an approach that incorporates both SWOT analysis and Porter's Diamond framework, which highlights the systemic factors influencing the competitiveness of a region or sector. Regarding strengths, Lampung possesses vast, fertile land and boasts years of experience in cassava cultivation. Domestic and regional demand for cassava and its derivatives such as tapioca, flour, chips, and bioethanol continues to rise as these derivatives are increasingly utilized across various sectors ranging from gluten-free foods and cosmetics to bioenergy. Data from Expert Market Research (2024) indicates that the cassava processing industry is projected to grow at an annual rate of 2.9% through 2034, underscoring the significant potential for downstream development.

However, there are weaknesses hindering the enhancement of competitiveness. Transportation and logistics infrastructure in Lampung remains suboptimal, impacting the efficiency of harvest distribution. Most cassava farmers are micro-entrepreneurs with limited access to technology, capital, and training in sustainable production practices. Threats from pests and plant diseases such as Cassava Mosaic Disease are concerns because they can reduce both the quality and quantity of production (S. M. Research, 2024). Regarding opportunities, globalization has opened wider export avenues to markets in East Asia, Europe, and North America. Cassava products which gluten-free and high in fiber are in high demand within the functional food market. Additionally government policies promoting bioenergy and local food-based industries present strategic opportunities for cassava development (Group, 2024). Meanwhile threats arise from intense global competition especially from countries like Thailand and Vietnam which are more established in starch exports and possess more advanced industrial infrastructure. Global price fluctuations and reliance on climatic conditions further increase the sector's vulnerability.

To deepen the competitiveness analysis, Porter's Diamond framework (Porter, 1990) covering four key determinants: (1) Factor Conditions: Lampung possesses abundant natural resources (fertile soil and a tropical climate) and agricultural labor. However improvements are still needed in "advanced factors"

such as production technology, agricultural research, and access to financing. (2) Demand Conditions: Domestic and regional demand for cassava is high and growing. Trends toward healthy diet and policies favoring food import substitution reinforce cassava's position as a strategic commodity. (3) Related and Supporting Industries such as supporting ecosystems like processing industries, farmer cooperatives, and logistics are still developing gradually. Collaboration between the upstream sector (farmers) and the downstream sector (industry) needs to be strengthened to create competitive industrial clusters. (4) Firm Strategy, Structure, and Rivalry: The cassava production structure in Lampung remains traditional. While domestic competition is not intense, Indonesia faces stiff competition in the global market from major exporters such as Thailand and Brazil.

An analysis using the SWOT and Porter's Diamond frameworks indicates that strengthening the competitiveness of North Lampung's cassava sector requires strategic interventions. These strategies include improving road infrastructure and harvest logistics, digitizing the supply chain, and boosting productivity through extension services and access to precision farming technology. Furthermore the local government needs to strengthen partnerships with processing industry players and foster the development of cassava agro-industrial zones. Export incentives and the streamlining of business licensing for cassava-processing MSMEs are also crucial to driving the growth of a locally-based, export-oriented downstream industry.

## RESEARCH METHODS

This study employs a qualitative descriptive approach to explore and understand the competitiveness dynamics of cassava from the North Lampung region within the context of global trade and market competition. This approach was selected for its ability to provide an in-depth depiction of complex, contextual situations—including the social, economic, and structural aspects influencing agricultural commodity performance. A qualitative approach is well-suited for addressing research questions that are open-ended and in-depth, focusing on understanding processes and the relationships between factors rather than merely quantifying data.

According to Moleong (2017), the qualitative approach aims to understand phenomena holistically by emphasizing the meaning, value, and context of the social or economic phenomena under study. Consequently, this approach is highly appropriate for examining the competitiveness of a commodity—a factor determined not only by technical elements such as production volume or export value but also by the institutional environment, industrial networks, and local resource conditions.

Data for this study were obtained through literature reviews and document analysis, utilizing secondary data from reputable institutions such as Statistics Indonesia (BPS), the Lampung Province Agriculture Office, and international organizations like the Food and Agriculture Organization (FAO) (2023). The documents analyzed included annual reports on cassava production and exports, maps of key commodities, and prior research regarding strategies to strengthen the competitiveness of local commodities (BPS, 2024).

Data analysis was conducted using a narrative and interpretive approach, synthesizing and linking information from various sources to identify factors that either support or hinder the enhancement of North Lampung cassava's competitiveness. Emphasis was placed on the interplay between local conditions and global market dynamics, as well as potential policy interventions that could strengthen the commodity's position as a premier tropical agricultural export product.

## RESULT AND DISCUSSION

To strengthen the competitiveness of cassava commodities in Lampung, a comprehensive approach is required, encompassing aspects such as agronomic techniques, downstream processing, institutional frameworks, policy, and technological innovation.

First regarding agronomy it is necessary to improve technical efficiency through intensive farmer training on modern cultivation practices such as the use of superior varieties, balanced fertilization based on soil analysis, and integrated weed and pest management. A study by Sinaga et al. (2021) revealed that technical efficiency is a primary factor in boosting cassava competitiveness at the national level. This is supported by research on strategies and policies to increase cassava competitiveness in Lampung, which indicates a potential output increase

of approximately 20% through optimal input usage, even if input costs rise by 20%. Therefore, training programs such as demonstration plots and intensive mentoring are highly strategic for fostering the adoption of these technologies.

Second,regarding downstream processing there is a need to develop cassava-based product diversification beyond conventional tapioca starch to include MOCAF (Modified Cassava Flour), export-grade food starch, and differentiated products like healthy cassava-based snacks. Findings from the Toba Samosir value chain indicate that diversification can significantly increase profit margins for local producers. Training in professional packaging and quality certification (HACCP, ISO, and Good Manufacturing Practices) is also crucial to enable Lampung products to penetrate modern domestic markets and meet international standards for export.

Third strengthening institutions and partnerships is key to sustainability. Currently the relationship between farmers and industry players remains volatile, leading to frequent fluctuations in supply and prices. To strengthen farmers' bargaining position, it is necessary to establish cooperatives and legally incorporated farmer groups that enter into partnership agreements with factories or industry players, following a model based on transparent price contracts. This solution is also supported by findings from Endaryanto et al. (2022) and Sinaga et al. (2021) as a means to stabilize the supply chain.

Fourth public policy plays a crucial role in the health sector. Interventions such as floor price guarantees, subsidies for strategic inputs, and support for access to capital particularly affordable credit would provide financial strength to farmers in North Lampung. Studies by Endaryanto et al. (2022) indicate that floor price protocols are effective in shielding farmers from global market fluctuations while maintaining the competitiveness of downstream industries.

Fift, investment in R&D (Research and Development) and technological innovation must be accelerated through collaboration with research institutions, universities, and international partners such as ACIAR. ACIAR programs emphasize the importance of the national cassava value chain reaching an economic value of IDR 100 trillion through upstream-downstream research and the adoption of appropriate technology. In Lampung, this could involve research on superior local varieties, efficient drying technologies, and simple, appropriate irrigation systems.

These innovations not only reduce production costs but also improve the quality of downstream raw materials. Strengthening the competitiveness of

cassava commodities in Lampung requires a focus on adopting modern agricultural technology, particularly in the upstream sector. This can be achieved by using soil analysis to determine precise fertilization needs, using superior local seeds that are disease-resistant, and employing simple mechanical tools for planting and harvesting. The application of these technologies has been proven to reduce production costs and increase crop yields by up to 20% (Sinaga et al., 2021; Endaryanto et al., 2022). In the downstream sector, product diversification is important stepranging from processing cassava into MOCAF (Modified Cassava Flour) and export-quality food starch to creating ready-to-eat products like chips or healthy snacks. These products hold significant potential to penetrate both modern retail and export markets; furthermore, we recommend distinctive branding—such as "Authentic North Lampung Cassava"—that highlights quality and environmentally friendly production processes (Tambun & Manik, 2018).

Beyond production and processing, institutional strengthening is also vital. Establishing farmer cooperatives that form formal partnerships with processing industries will create a stable supply chain, reduce price volatility, and enhance the farmers' bargaining power. Such partnerships can be formalized through medium-term contracts featuring clear and fair pricing mechanisms. Local government also plays a pivotal role, particularly in setting floor prices for cassava.

## CONCLUSION

Lampung possesses significant potential as a national hub for cassava production, thanks to its favorable natural conditions and supportive infrastructure. However, the region faces various challenges, including low productivity, a heavy reliance on traditional markets, a lack of diversification into high-value products, suboptimal infrastructure, and intensifying global competition. To enhance competitiveness, a comprehensive strategy is required—one that encompasses the modernization of agronomic practices, the diversification of downstream products, the strengthening of farmer institutions and industrial partnerships, and the implementation of innovations rooted in research and development. Policy support, such as price stabilization measures and improved access to financing, is also crucial. Through the synergy of these elements, Lampung has the potential to become a premier cassava hub capable of competing in both domestic and international markets. Future research should

focus on the development of innovative and sustainable agricultural technologies—including the use of digital tools for supply chain management and product marketing—as well as in-depth studies on effective partnership models and policies that foster long-term price stability and sustainable access to financing.

## REFERENCES

ACIAR. (n.d.). Indonesia – ACIAR Cassava Value Chain and Livelihood Program. https://research.aciar.gov.au/cassavavaluechains/indonesia-2/index.html?utm_source

Asosiasi Produsen Tepung Tapioka Indonesia (APTINDO). (2022). Laporan Industri Tepung Tapioka 2022. http://www.aptindo.org

Badan Pusat Statistik (BPS) Indonesia. (2023). Statistik Tanaman Pangan Indonesia 2023. https://www.bps.go.id

Badan Pusat Statistik (BPS) Provinsi Lampung. (2023). *Produksi Ubi Kayu (Singkong) Provinsi Lampung Tahun 2022-2023*. https://lampung.bps.go.id

Badan Pusat Statistik Provinsi Lampung. (2022). Statistik ubi kayu Provinsi Lampung 2021. https://lampung.bps.go.id

Dinas Pertanian Provinsi Lampung. (2023). Laporan Pengembangan Komoditas Singkong di Lampung. Pemerintah Provinsi Lampung.

Direktorat Jenderal Hortikultura. (2021). Pengembangan komoditas ubi kayu berbasis kawasan di Indonesia. Kementerian Pertanian Republik Indonesia.

Endaryanto, T. T., Zakaria, W. A., Indah, L. S. M., & Seta, A. P. (2022). Strategies and policies to increase competitiveness of cassava in Lampung Province, Indonesia. *Jurnal Manajemen dan Agribisnis*, 19(3), 492–510. https://doi.org/10.17358/jma.19.3.492

EPAS (Evans School Policy Analysis & Research). (2015). Cassava Integrated Value Chain: GlobalAnalysis. https://epar.evans.uw.edu/wpcontent/uploads/2024/08/EPAR_UW_R

equest_223_Cassava_Integrated_Value_Chain_03.05.13_public.pdf?utm_source

Food and Agriculture Organization (FAO). (2022). Cassava Production Trends in Southeast Asia: A Comparative Analysis. http://www.fao.org

Food and Agriculture Organization. (2020). Global cassava market trends: Implications for small-scale processors. FAO. https://doi.org/10.4060/ca8847en

Group, G. M. R. (2024). Cassava Market Size, Competitors, Trends & Forecast to 2030.

Handoko, S. (2025). UU Hortikultura Dorong Intervensi Pemerintah Atas Anjloknya Harga Singkong Di Lampung. *Causa: Jurnal Hukum dan Kewarganegaraan*, 13(3), 61-70.

Kementerian Pertanian Republik Indonesia. (2023). Statistik Ekspor Komoditas Singkong dan Tepung Tapioka Indonesia 2022. https://www.pertanian.go.id

Mariati, S., & Handoyo, C. (2020). Strategi pengembangan UMKM olahan singkong di Lampung. *Jurnal Agribisnis Indonesia*, 8(2), 145-160. https://doi.org/10.29244/jai.2020.8.2.145-160

Porter, M. E. (1990). *The Competitive Advantage of Nations*. Free Press.

Prasetyo, A. E., & Setyaningsih, D. (2021). Analisis daya saing produk olahan ubi kayu Indonesia di pasar ASEAN. *Jurnal Ilmiah Ekonomi Bisnis*, 6(3), 112-125.

PT. Budi Starch & Sweetener. (2023). *Annual Report 2023: Pengolahan Singkong di Lampung*. https://www.budistarch.com

Research, E. M. (2024). Cassava Processing Market – Size & Industry Share 2034.

Research, S. M. (2024). *Cassava Market–Global Industry Analysis and Forecast (2025–2032)*.

Sari, Y. E., & Tabah, G. A. A. (2024). Pengaruh Faktor Produksi Terhadap Pendapatan Usaha Tani Singkong di Desa Bandar Putih Kabupaten Lampung Utara. *Journal of Agriculture and Animal Science*, 4(2), 98-105.

Sinaga, Y. J., Kusnadi, N., & Rachmina, D. (2021). The effect of technical efficiency on the competitiveness of cassava Indonesia. Jurnal Manajemen dan Agribisnis, 18(3), 265–279. https://doi.org/10.17358/jma.18.3.265

Stat Ledger. (2023). *Indonesia Cassava Market – Trend Analysis & Forecast to 2030*.

Suryana, A. H. (2019). *Cassava value chain development in Indonesia: Lessons from Lampung Province*. International Food Policy Research Institute Working Paper No. 187.

Tambun, R., & Manik, Y. (2018). A study of the value chain of cassava (Manihot esculenta) in Toba Samosir district for the analysis of increasing its value added to stakeholders. In 3rd International Conference of Computer, Environment, Agriculture, Social Science, Health Science, Engineering and Technology (ICEST) (pp. 335–340). https://doi.org/10.5220/0010042603350340

Widodo, Y., & Nurmalina, R. (2022). Fluktuasi harga ubi kayu dan dampaknya terhadap industri pengolahan di Indonesia. *Jurnal Agro Ekonomi*, 40(1), 23-42. https://doi.org/10.21082/jae.v40n1.2022.23-42