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Analysis Of The Business Potential Of Stevia In Indonesia: Opportunities, Challenges, And Market Prospect

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ABSTRACT

This study explores the commercial viability of stevia in Indonesia, emphasizing the prospects, obstacles, and future market potential of this natural sweetener. The research integrates both qualitative and quantitative approaches, such as literature reviews, analysis of primary data, and inferences based on regional clusters, to offer an all-encompassing insight into the stevia sector. Indonesia's expansive, fertile territory and growing health-oriented consumer population offer a considerable market for stevia as a sugar substitute. Nonetheless, issues like low output from local stevia varieties, ineffective post-harvest handling, inadequate farmer knowledge, lack of capital, and rivalry from other sweeteners must be tackled. The study highlights important demand clusters in Java, North Sulawesi, and Central Java, emphasizing prospects for both Business-to-Business (B2B) and Business-to-Consumer (B2C) marketplaces. Moreover, it highlights the significance of advancing farming methods and processing technologies to boost competitiveness. The results indicate that through effective policies, investments, and innovations, Indonesia can leverage the increasing worldwide demand for stevia and position itself as a key supplier. The research ends with tactical suggestions for stakeholders to enhance the business opportunities of stevia in Indonesia.

Keywords: Stevia, Sweeteners, Agronomy, Market Competitiveness, Indonesia.

1. Introduction

Indonesia faces a significant challenge in fulfilling its sweetener requirements, particularly in the case of cane sugar, which is largely sourced from imports. In 2014, sugar imports totaled 5.7 million tons, and although this figure dropped to 4.47 million tons in 2017, the nation continues to experience a consistent supply shortfall (BRMP Plantations, 2022). This reliance on imports is compounded by the increasing demand driven by population growth and the expanding food and beverage sector (Pal et al., 2015; Mejia & Pearlman, 2019). Moreover, the rising health concerns associated with diseases such as obesity and diabetes further underscore the need for healthier alternatives, with stevia (Stevia rebaudiana Bertoni) emerging as a promising solution. Stevia, a calorie-free natural sweetener, is particularly beneficial for diabetics and individuals on weight-loss diets (Investing.com, 2025).

As public awareness of the health risks linked to excessive sugar consumption increases, the demand for natural sweeteners, particularly stevia, has grown substantially. The global stevia market is projected to reach IDR 23.2 trillion by 2030, with a compound annual growth rate (CAGR) of 10.12% (Mordor Intelligence, 2025). This growth presents a promising market opportunity for the stevia industry. However, despite this burgeoning demand, Indonesia's stevia industry faces significant challenges, especially in terms of agronomy. Local stevia plants, which are grown from clones found within the country, produce significantly lower yields compared to their foreign counterparts. While foreign clones can yield up to 6 tons of dry leaves per hectare, local clones only manage to achieve yields of 2.5 to 3.5 tons per hectare (Supit et al., 2023).

In this context, the theory of genetic diversity offers a deeper insight into the productivity gap between local and foreign stevia clones. Genetic diversity plays a critical role in a plant's ability to adapt to varying environmental conditions. According to Harlan (1975), plants with limited genetic diversity, such as local clones that are derived from similar genetic material, tend to be more constrained in their resilience to environmental stressors such as climate change or disease. This limited adaptability may be a primary reason why local stevia clones produce fewer leaves than their foreign counterparts, which possess a greater genetic diversity and are better suited to adapt to a wider range of growth conditions.

Additionally, ecological adaptation theory explains the observed productivity differences between local and

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foreign clones. This theory posits that plants grown outside their native environments often undergo more rigorous natural or artificial selection, resulting in traits that enhance their growth and productivity (Baker, 1987). Foreign clones thriving in Indonesia have likely undergone this more stringent selection process to adapt to diverse soil conditions, climates, and agricultural practices. According to Ecological Adaptation Theory, this enhanced selection improves the plants' ability to flourish under various environmental conditions (Baker, 1987). Furthermore, Genetic Diversity Theory explains that plants with limited genetic diversity, like local stevia clones, lack the resilience needed to adapt to environmental changes, thus leading to lower productivity in comparison to genetically diverse foreign clones (Harlan, 1975). Consequently, environmental factors such as soil quality, climate, and cultivation techniques heavily influence the yield of local stevia plants.

These productivity gaps hinder Indonesia's competitiveness on the international stage, highlighting the necessity for improved cultivation methods and better seed quality (Hidayat, 2020). Beyond technical challenges, such as poor post-harvest processing, the stevia sector also grapples with non-technical issues, including farmers' limited knowledge of modern farming techniques and insufficient capital (Nurfitriyani & Rosmita, 2020). These challenges could be addressed through government-backed training programs and financial assistance. Furthermore, stevia must contend with other sweeteners, such as sucralose and monk fruit, making it harder to capture a larger market share, as suggested by Competitive Advantage Theory. This theory emphasizes the importance of improving product quality and positioning in a competitive market (Porter, 1985).

This article analyzes the opportunities and challenges for the development of the stevia industry in Indonesia and offers strategic recommendations for its continuous growth and healthy development. Drawing from previous research and new data, this study proposes strategies for improving stevia cultivation and processing and enhancing its market positioning. The government, farmers, and industrial stakeholders must collaborate to optimize the use of stevia as a natural sweetener in Indonesia, making informed decisions and developing well-structured plans for the industry’s growth.

2. Research Method

This study aims to examine the suitability of stevia in an Indonesian company. It will look for trades with good odds, understand the game and the bets, and guess with some intelligence the room conditions several moves ahead. The study uses several different techniques to gather information, including searching through past research, generating new data, and making educated guesses that draw from other disciplines. All the procedures performed in this work meet the standards of scientific practices, including data collection, analysis, and data presentation.

The paper explores a number of stevia industry actors, such as farmers, the government, and companies. It explores in detail the factors affecting the cultivation, post-harvesting, and distribution of stevia in Indonesia. These factors may vary, and some are government policies, the economic situation, and agricultural measures. As mentioned by Hidayat (2020) and Supit et al. (2023), the research also deals with the challenges in growing, processing, and marketing stevia.

Primary and secondary sources were used to obtain the data. The main data used in the analysis are the results of previous studies on the prospect of stevia planting, stevia plants produced and processed in Indonesia, and direct data collection through field studies. The primary data includes detailed information on the productivity of local and foreign stevia clones, which was gathered from studies conducted in specific regions like Minahasa and areas in Java. This data also encompasses agronomic performance, such as yield comparisons between local clones (BPP series) and imported clones (BM, BX), and the steviol glycoside content in these plants, which is a crucial factor for market competitiveness. The secondary data was obtained from government regulations, industry reports, published articles, and literature that reported on the natural sweetening characteristics of stevia (Investing.com, 2025; Perkebunan BRMP, 2022). The review also compared past studies as well as government regulations on the use of stevia in food (Food and Drug Administration, 2014).

The data was analysed using both qualitative and quantitative techniques in the study. The qualitative component was based on information from industry magazines and studies. The quantitative study analysed the productivity of locally and imported stevia plants along with the costs and income of planting stevia in multiple regions (Hidayat, 2020; Supit et al., 2023). Specifically, the analysis focused on the comparison of productivity between local and imported stevia plants, with local clones (BPP series) producing 2.5 to 3.5 tons of dry leaves per hectare, while imported clones (BM and BX) achieved yields of up to 6 tons per hectare. Additionally, the study examined the costs and income of stevia planting, including the Return-Cost Ratio (RCR), which in Minahasa was found to be 1.56, indicating that for every Rp1 spent on production, Rp1.56 was generated in revenue. This quantitative analysis provided insights into the economic viability and productivity differences between local and foreign stevia clones.

The study used a formally elegant process called cluster-based inferential analysis to figure out just how much stevia we need to make that level of sweetness. For this method, the other affecting factors, such as the level of industry concentration, the number of users, and the potential for export, were considered (Widiastuti et al., 2024). Focused on areas where stevia is produced, the research concentrated largely on Indonesia. Data was collected over various months for the analysis from multiple government standards and industry reports. This calculation was supplemented by recent market forecasts and trends until 2025 (Mordor Intelligence, 2025).

The literature was systematically searched in the study from reliable databases, and the data analysis was conducted in full transparency to support robust conclusions. Furthermore, it recognized some limitations, including the absence of detailed specific data on regional stevia demand, which required resort on other proxies (Supit et al., 2023). While it draws on an extensive range of sources of information, the report acknowledges that Indonesian statistics may fail to be fully reflective of Indonesia's potential and challenges.

3. Result

The objectives of this research are as follows: (1) to examine business opportunities for stevia in Indonesia by identifying opportunities, barriers, and prospects of the future stevia market. Some of its critical findings in terms of the stevia business opportunities as well as challenges in growing and processing with regard to the future of the stevia market in Indonesia were, for instance, discussed based on various sources. The objectives of this research are as follows: (1) to examine business opportunities for stevia in Indonesia by identifying opportunities, barriers, and prospects of the future stevia market. Some of its critical findings in terms of the stevia business opportunities as well as challenges in growing and processing with regard to the future of the stevia market in Indonesia were, for instance, discussed based on various sources.

3.1 Stevia Business Opportunities in Indonesia

The stevia market in Indonesia is one of the largest in the world and is driven by several factors, such as the increasing consumer health consciousness and growing demand for safer natural sweeteners. As a natural sweetener substitute, stevia is 200 to 300 times sweeter than traditional sugar and contains no calories. Projections on the growth of the global stevia market are quite impressive, where the global stevia market value is projected to increase from IDR 14.4 trillion in 2025 to IDR 23.2 trillion in 2030, with an average annual growth rate of 10.12%.

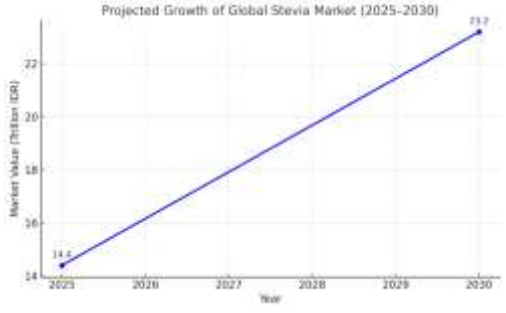

Figure 1. Projected Growth of Global Stevia Market (20025-2030)

(Source: Compiled from Mondor Intelligence data)

This graph shows the projected growth of the global stevia market value from 2025 to 2030, which is estimated to increase from IDR 14.4 trillion to IDR 23.2 trillion, with a significant annual growth rate.

In Indonesia, demand for natural sweeteners such as stevia is expected to increase significantly in the coming years. The growing popularity of health trends, especially among young consumers, is leading to a shift in preferences from synthetic sweeteners to natural sweeteners. A study shows that young consumers' interest in "sugar-free" snacks has increased sharply, from 16.4% to 31% in one year. This creates a huge opportunity for stevia to enter the food and beverage market, especially in products formulated with low-calorie sweeteners.

3.1.1 Central Industrial and Consumer Demand Cluster (West Java & East Java)

Java Island as a whole can be identified as a major demand cluster for stevia. This location combines a high concentration of industry with a dense urban population, creating an ideal market for alternative sweeteners.

In West Java, particularly in areas such as Bekasi and Cikarang, there are F&B manufacturing industry centers with the presence of large companies such as PT Nippon Indosari Corpindo (Sari Roti), PT Diamond Cold Storage, and PT Mengniu Dairy Indonesia (Yoyic). The presence of these companies indicates substantial Business-to-Business (B2B) demand for raw materials such as sweeteners.

Similarly, East Java has a food processing industry as its leading sector, contributing more than 50% of the province's total output and added value. This area is also intimately connected to the agricultural sector, which acts as a provider of raw materials, including substances that can be substituted with stevia.

Simultaneously, urban areas like Jakarta, Surabaya, and Bandung are exhibiting a robust increase in demand for low-calorie items. This request comes not just from the industrial sector, but also from final consumers. In Sura-baya, for instance, there is an increasing trend in healthy food delivery options and eateries providing low-calorie and sugar-free dishes. Likewise, in Bandung, catering services for a diet like "Diet Plus Bandung" have been functioning since 2014, catering to the demands of consumers seeking a healthy lifestyle.

The Java cluster shows two intersecting categories of demand for stevia. Initially, there exists a B2B industrial need, propelled by manufacturing plants in industrial hubs like West Java and East Java. These factories need stevia as a significant raw material for producing food and beverages. This demand is significant, as numerous major companies in the area are concentrating on incorporating alternative sweeteners into their offerings. Secondly, there is an increasing demand for B2C retail, mainly from urban shoppers in cities such as Jakarta, Surabaya, and Bandung.

These consumers are increasingly seeking healthier food options, such as low-calorie and sugar-free products, and are purchasing end-processed products like healthy foods and beverages or tabletop sweeteners, such as sachet sweeteners, from retail markets. This dual demand from both industrial and consumer sectors highlights the diverse market opportunities for stevia in Java.

3.1.2 Export Hub Supply Cluster and Partnership (North Sulawesi)

In contrast to the Java cluster, which is driven by demand, North Sulawesi, particularly Minahasa Regency,

has established itself as a vital, export-oriented stevia supply cluster. Ste-via Farm Korea Ltd. has identified this region as the most suitable location for stevia cultivation due to its favorable agronomic conditions and climate. The success of cultivation in Ko-longan Atas II Village, Minahasa, has demonstrated the viability of stevia farming, with an impressive Return-Cost (R/C) ratio of 1.56, indicating good profitability for local farmers. This good result shows that growing stevia on a bigger scale is possible in this area, which could help make Indonesia's stevia industry grow stronger.

In Minahasa, the business plan depends on a strong partnership that helps farmers have steady financial support and encourages more people to grow stevia. Stevia Farm Ko-rea is working with PT Bejana Kasih Sempur-na (BKS) and has put in USD 34 million to build a modern stevia processing plant in Indonesia. This collaboration functions under a contract farming model, ensuring that farmers' crops will be received at an agreed-upon price, thereby reducing the risks that typically hinder agricultural investments. The assured pricing structure gives farmers greater confidence in expanding their operations, benefiting both producers and processors.

Stevia is needed in this region not because of the local market, but because of steady demand from international industries. Stevia Farm Korea wants to bring in 200 tons of stevia each month for the South Korean market. This global demand is a key part of their business plan, as it creates a reliable and growing market for stevia grown in Indonesia. More people, especially in countries like South Korea, are looking for natural sweeteners. This shows how important it is to create strong partnerships for exporting and have good supply chains.

This approach has already worked. In Sep-tember 2021, the first shipment of 2 tons of stevia from Minahasa to South Korea was made. This export was a big success for the region. It proved that the contract farming model works and showed that Minahasa can be an important part of the international stevia supply chain. The stevia market is growing steadily, which means farmers can rely on a steady income. This helps them feel confident to grow more stevia. Focusing on exports is important for making Minahasa a key area for stevia production and export. This helps Indonesia become a bigger player in the global stevia market.

3.1.3 Potentia Logistics and Processing Bridge Cluster (Central Java)

Central Java is ideally located to serve as an important center for Indonesia's stevia sector, acting as a logistics link and a processing facility. A study evaluating the viability of setting up a natural sweetener plant in Karangan-yar Regency shows that the factory could handle as much as 1,500 tons annually, indicating strong financial viability with a pre-tax Return on Investment (ROI) of 24.42% and a Break-Even Point (BEP) of 41.85%. These figures highlight the high profitability potential of such an initiative, making it a viable and attractive investment. The factory's capacity for processing stevia leaves into ready-to-use industrial extracts or powders positions Central Java as a key location to meet the growing demand for stevia products, especially in the food and beverage sector.

The strategic location of Central Java makes it an ideal site for processing stevia raw materials sourced from production centers located outside Java, such as North Sulawesi, and from potential cultivation areas within Java, including East Java and West Java. This central location will significantly improve the efficiency of the supply chain, enabling the connection of raw material producers in the eastern regions with industrial consumers in the western part of Java. By establishing processing facilities in Central Java, transportation costs can be minimized, and the overall value chain efficiency can be enhanced, ensuring timely and cost-effective delivery of ste-via products to markets across the region.

Indonesia's vast and fertile tropical land offers exceptional potential for large-scale stevia production. Various regions, such as Minahasa in North Sulawesi and parts of Java, provide agronomic conditions conducive to cultivating stevia. Research conducted in Kolongan Atas II Village, Minahasa, found that stevia farming in this region yields a Return-Cost Ratio (R/C) of 1.56, indicating that for every Rp1 spent on production, Rp1.56 is generated in revenue. This high profitability indicates that stevia farming is economically feasible and emphasizes the considerable potential for increasing stevia cultivation throughout Indonesia, reinforcing the country's position in the global stevia market.

Favorable agricultural conditions, the creation of processing facilities, and robust financial forecasts position Indonesia, especially Central Java, as a strong competitor in the global stevia market. By resolving supply chain inefficiencies and offering a reliable market for stevia farmers, Indonesia can fully capitalize on its extensive agricultural potential and emerge as a significant stevia exporter. With adequate investment, government backing, and strategic advancements in processing technology, Indonesia can notably enhance its stevia production capacity, satisfy both local and global demand, and strengthen its role in the expanding natural sweetener market.

3.1.4 Prospects for Stevia Downstreaming in Indonesia

The downstreaming of stevia in Indonesia presents encouraging prospects, particularly in light of the growth of the processing and export sector, fueled by rising demand for natural sweeteners. A feasibility study for the establishment of a stevia extract processing plant in Karanganyar, Central Java, shows high financial feasibility. The planned factory will have a production capacity of 1,500 tons per year, with fixed capital of around $10,186,278.80 and working capital of $5,742,143.22. The analysis shows a pre-tax Return on Investment (ROI) of 24.42% and a pre-tax Payback Period (POT) of 2.99 years (Gadjah Mada University, 2024).

This project shows great potential for developing the stevia downstream industry in Indonesia. Investment in post-harvest technology and stevia extract processing is key to accelerating downstreaming. In addition, strategic locations such as Karanganyar, which is close to stevia production centers in Central Java and North Sulawesi, facilitate supply chain efficiency and reduce

logistics costs. The existence of processing plants will also support the further processing of stevia products into more value-added forms, such as stevia extracts and powders that are ready for use in the food and beverage industry (Tilleke & Gibbins, 2024).

However, structural challenges remain, particularly related to supply chain fragmentation, which hinders the efficient processing and distribution of products. Many stevia farmers still face difficulties in gaining access to larger markets due to limited infrastructure and capital (ResearchGate, 2021). Therefore, policies are needed to support the development of an integrated ecosystem, where farmers can collaborate with the processing industry to increase agricultural productivity and quality.

3.2 Challenges in Stevia Cultivation and Processing

Stevia cultivation in Indonesia faces significant challenges, particularly at the upstream level, where productivity remains a key constraint. One of the primary issues is the difficulty in propagating stevia plants on a large scale. Local stevia clones, which have been cultivated since the 1980s, have significantly lower yields compared to superior clones introduced from abroad. For instance, local clones such as the BPP series yield between 2.5 and 3.5 tons of dry leaves per hectare annually, while introduced clones, such as BM and BX, can yield up to 6 tons per hectare. The big difference in productivity between local and introduced stevia plants is making it hard for local stevia to compete in both local and international markets. This shows that improving the use of better seeds and better farming methods is really important.

Looking at how much stevia can be grown and the amount of steviol glycosides in local and introduced plants shows that the introduced ones, like BM, produce more and have higher levels of steviol glycosides, especially Reb A. Reb A is special because it has a clean, sweet taste without the bitter aftertaste that comes with stevioside. The new clones are more well-liked in the food and beverage industry as a result of their superior quality. Local clones find it more difficult to compete in the market as a result. Enhancing the quality of regional clones and figuring out more effective methods for their growth and dissemination are crucial to resolving this. Indonesia will become more competitive in the stevia market as a result of this.

Growing stevia is a challenge, but so is the post-harvest processing. It is a big challenge to dry the leaves quickly without destroying the quality, and also avoid the growth of molds. During production, stevia leaves are very vulnerable to mold, especially in the presence of moisture or humidity. This is compounded by the high humidity of the rainy season and, therefore, inferior leaves. Solar dryers address this need, especially in remote areas where conventional drying techniques do not benefit. The use of solar driers is a clean and efficient method to fast-dry the leaves, retaining sweetness and stopping mold growth. These processes may substantially enhance the quality of the product and marketability of Stevia.

In the end, these problems need to be addressed in cultivation and processing to ensure the future of stevia in Indonesia. Indonesia can also improve and help its growers get more out of stevia production by focusing on improved seed quality and increased quality of agro practices, and investing in post-harvest infrastructure investments, such as solar dryers. Since more and more people are turning towards natural sweeteners, such as stevia, such changes are essential if the country wants to make a mark in the global market.

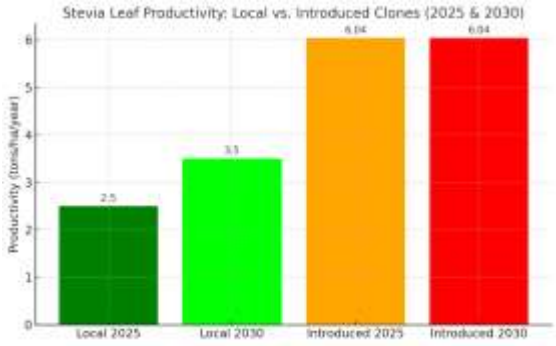

Figure 2. Comparison of Stevia Yield (Indigenous Clones vs. Imported Clones)
(Source: Compiled from Mondor Intelligence data)

This figure shows the productivity of stevia for local and introduced clones in 2025 and 2030 on a bar graph. It shows that the productivity of the introduced clones is more than that of the local ones, indicating that the local seed is not good.

Upstream-wise, the main concern is the ability to multiply plants in large scale. Furthermore, the production of local stevia clones, grown since the 1980s, is still much lower than that of imported superior quality clones from other countries. Table 1. Comparison of Productivity and Steviol Glycoside Content of Local Clones vs. Intro-duced Clones.

Stevia Clone	Dry Leaf Productivity (tons/ha/year)	Stevioside Content (%)	Reb A Content (%)
Local (BPP series)	2.5 - 3.5	6.2 - 15.1	0.4 - 3.7
Introduction (BM)	6.04	4.10	8.54
Introduction (BX)	4.91	4.06	6.62

Source: Processed Data 2025

At the early stage, a major problem slowing down the growth of the stevia industry in Indonesia is the difficulty in growing a large number of plants. Stevia farming requires high-quality clones and proper propagation methods, but local stevia clones, which have been cultivated since the 1980s, exhibit significantly lower productivity compared to superior clones introduced from abroad. For instance, local clones such as the BPP series yield between 2.5 and 3.5 tons of dry leaves per hectare per year, while introduced clones, such as the BM and BX varieties, can produce up to 6 tons per hectare. The difference

in productivity is a big problem, making it hard for Indonesia's stevia industry to grow and stay competitive in the world market. When comparing the stevia output and the amount of steviol glycoside between local and imported plant varieties, it clearly shows this gap. According to the table, native BPP clones only yield 2.5 to 3.5 tons of dry leaves per hectare, whereas imported BM clones yield up to 6.04 tons.

Along with increased yield, introduced clones also contain more steviol glycosides, especially Reb A, which is prized for having a clean, sweet flavor without the harsh aftertaste that is frequently associated with stevioside. The food and beverage industries find imported clones more desirable due to their higher Reb A levels, underscoring the structural problem this productivity difference presents for the market.

Indonesia's stevia competitiveness in the international market is directly impacted by the variation in stevia clone yield. Imported clones offer larger yields and better taste profiles, while local clones are less competitive due to their lower yields and lower-quality compounds. This case highlights the significance of significant advances in local stevia cultivation. To boost production, this involves growing stevia using better seeds and more effective techniques. In order for Indonesia to do fairly well at the global stevia market, this difference should all go to Indonesia.

Along with the challenges of growing stevia, the more pressing matter at hand is what happens to it after it has been plucked from the ground. The leaves must be dried as soon as possible to preserve their quality, so they will not mold, which can ruin the leaves. The stevia quality will be decreased due to the high humidity conditions in Indonesia during the rainy season, which makes drying more difficult. Solar driers will be a good and environmentally-friendly option, especially in the monsoon. These dryers help the leaves dry quickly to maintain their fresh level, which is very important to save the sweet taste and prevent the growth of mold. It will make stevia products more commercially effective.

3.3 Competition with Other Sweeteners and Non-Technical Aspects

The stevia industry is also a victim of competition, beyond technical and regulatory issues, from other natural and artificial sweeteners. Stevia, however, is usually far sweeter than artificial sweeteners, such as sucralose, and is also commonly cheaper. Thus, these are preferable producers, especially in a cost-sensitive environment. While Stevia can be expensive – you will still spend a lot more on cane sugar or artificial sweeteners – it also promotes better health, as it is zero-calorie and does not spike blood sugar levels. “At a higher price point, it becomes much more challenging to be applicable on a broader basis, especially in developing regions with price-sensitive consumers.

In addition, non-technical issues limit the use of stevia. These problems are mostly derived from the hardship of the Indonesian farmer. The farmers don’t have enough money to buy the necessary equipment, as well as better seeds and improved practices. They must have some cash support to extend their fields and increase their yields. Another issue is that farmers are not educated in new agricultural methods and technology that can improve stevia yield and quality. This unawareness is an obstacle to the stevia crop and subsequently to the total volume accepted.

The main challenge in widening the stevia market in Indonesia is the distribution matter. Lack of infrastructure and difficulties moving goods from place to place are some of the reasons for delayed deliveries, rising costs, and goods hauled in damaged condition. This waste has a direct bearing on the availability of raw stevia as well as the marketing of the finished product, raising the cost of production and placing the sector at a distinct disadvantage. Furthermore, the Indonesian government does not fully support stevia cultivation. Slight intervention, like providing farmers with financial incentives, farmer support, and policies, is just what would render stevia a lucrative crop. Without that support, stevia can never be a major part of agriculture.

A comprehensive approach is required to address these problems. Financial assistance, improved agricultural equipment and methods, and instruction on stevia cultivation should all be part of this. Additionally, the Indonesian stevia business would benefit immensely from better government policies and an improved transportation system. Indonesia can maximize its stevia potential and boost its competitiveness in the global market by addressing these non-technical issues.

4. Discussion

This study emphasizes Indonesia’s considerable potential for advancing the stevia sector in both local and international markets. As consumer awareness of healthy living rises, the demand for natural sweeteners such as stevia is swiftly increasing. Global market projections indicate a substantial increase in the stevia market value, from IDR 14.4 trillion in 2025 to IDR 23.2 trillion by 2030, with an annual growth rate of 10.12% (Mordor Intelligence, 2025). In Indonesia, the demand for natural sweeteners like stevia is expected to increase dramatically, driven by a shift in consumer preferences from synthetic to natural sweeteners, particularly among young, health-conscious consumers.

Despite the promising market prospects, Indonesia faces several challenges, particularly in the agricultural sector. One of the main issues is the productivity of local stevia clones, which remains significantly below international standards. Local clones in Indonesia yield only 2.5 to 3.5 tons of dry leaves per hectare annually, while introduced clones can produce up to 6 tons per hectare (Supit et al., 2023). This productivity gap hinders Indonesia’s competitiveness in the global market, highlighting the need for improvements in seed selection and more efficient cultivation techniques.

In addition to the technical challenges related to cultivation, post-harvest processing remains a significant hurdle. Rapid drying of stevia leaves is crucial to maintaining product quality and preventing fungal growth, especially during the rainy season. Solar dryer technology has proven effective in addressing this issue, significantly improving the

quality of stevia leaves, particularly in areas with high humidity (Widiastuti et al., 2024). The use of such technologies is critical to ensuring that the stevia products produced maintain optimal quality and can compete effectively in the market.

In terms of market opportunities, Indonesia shows two primary demand clusters for stevia: one from the industrial sector (B2B) and the other from the consumer sector (B2C). In West and East Java, there are major food and beverage manufacturing centers, such as those in Bekasi and Cikarang, where large companies require substantial quantities of natural sweeteners as raw materials (Kompas.tv, 2024). Meanwhile, large cities such as Jakarta, Surabaya, and Bandung are experiencing significant growth in the demand for low-calorie products, creating substantial opportunities for stevia-based food and beverage products, as well as table-top sweeteners.

The development of partnerships and investments in the downstream sector also plays a critical role in enhancing Indonesia's competitiveness in the global market. In Minahasa, North Sulawesi, the collaboration between Stevia Farm Korea and PT Bejana Kasih Sempurna has shown great potential for exporting Indonesian stevia. Through a contract farming model that guarantees the absorption of harvests at pre-agreed prices, the global market for Indonesian stevia is becoming more stable (Antaranews, 2021). This partnership provides a reliable income stream for farmers and contributes to the overall growth of the stevia industry in Indonesia.

Although the challenges are substantial, with the right policies and adequate investments in the development of cultivation and post-harvest technologies, Indonesia has the opportunity to become a major player in the stevia industry. Government support in the form of financial incentives, farmer training, and infrastructure development is essential to ensure the sustainable growth of the industry and strengthen Indonesia's position in the global market (Investing.com, 2025). By addressing both technical and non-technical challenges, Indonesia can fully realize the potential of its stevia industry and secure a significant position in the growing global demand for natural sweeteners.

5. Conclusion

This research highlights the significant business potential of stevia in Indonesia, emphasizing both opportunities and challenges in its development. The increasing demand for healthier sweeteners, driven by the rise in obesity and diabetes, presents a strong market opportunity for stevia, both domestically and for export. The global stevia market is likely to grow a lot, and Indonesia plays a key role because of its good farming conditions. However, the industry needs to overcome several problems, like low production from local stevia plants, difficulties in handling the crop after it's harvested, and competition from other sweeteners. To reach its full potential, these issues must be solved.

Improving the quality of local stevia plants and using better farming and processing methods is important. Setting up processing centers in places like Central Java could help make the supply chain work better. Also, the government needs to support farmers by offering financial help and training on modern farming techniques. This support will help grow both the early and later stages of the industry. By addressing these technical and non-technical challenges, Indonesia can capitalize on the growing demand for stevia and establish itself as a major supplier in the global market. The findings from this study provide key insights for policymakers, industry stakeholders, and farmers to optimize the business potential of stevia in Indonesia.

6. References

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