Aurelia: Jurnal Penelitian dan Pengabdian Masyarakat Indonesia
E-ISSN: 2964-2493 P-ISSN: 2962-0430
Vol. 2 No. 1 January 2023

Increasing Sugar Production and Its Alternatives and Availability of Plantation Land in Strengthening the National Economy

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Abstract
The purpose of this study is to find out the problem of the weakening of the Indonesian cane sugar industry which is unable to keep up with the rate of demand for Refined Crystal Sugar (GKR), especially for the food, beverage and pharmaceutical industries which has increased rapidly which has prompted the government to open up investment opportunities to build refined sugar factories using raw raw materials imported sugar. In addition, in order to explore alternative uses of raw sugar other than sugar cane, plantation management and trade mechanisms for domestic needs, as well as expansion of plantation land outside Java Island, in order to increase national sugar productivity.
Keywords: Increasing Production, Alternative Raw Sugar, National Economy.

INTRODUCTION

Indonesia is a country that has high economic potential; potential that is starting to be noticed by the international community. Indonesia - Southeast Asia's largest economy - has a number of characteristics that place it in a good position to experience rapid economic development. One of the drivers of economic development is the plantation sector, where based on BPS data, agricultural exports from January to November 2020 amounted to IDR 399.5 trillion, an increase of 12.63% compared to the same period in 2019 of IDR 349.1 trillion. Of the export value, the contribution of plantations reached 90.9% or 363.2 trillion rupiahs and this is at the same time an important contributor in achieving the target of threefold movement of exports (Gratieks). Exports of plantation commodities, which soared in January-November, were mostly contributed by palm oil, rubber, cocoa and coffee. Meanwhile, for the commodity of sugar is still low.

Indonesia was once known as one of the leading sugar exporting countries in the world by having processing factories reaching 179 units spread throughout Indonesia with a production capacity at that time reaching 3 million tons of sugar per year. This success story is now only a memory, the domestic sugar industry is faced with many problems that will continue to be addressed, one of which is the establishment of a State-Owned Enterprise (BUMN) holding company that owns the sugar industry. Until the end of 2011, Indonesia still had 62 units of cane sugar factories that were still active. Currently, Indonesia has a sugarcane plantation area that is twice the size of the Dutch colonial period. However, sugar production only reaches 2.1 million tons per year, with land productivity per hectare of only 5 tons, or one third of the amount achieved 90 years ago. This decline occurred since independence, so that in 1967 Indonesia was included in the group of sugar importing countries.

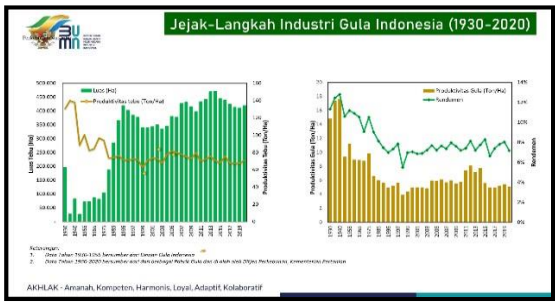

Figure 1. Development of the Indonesian Sugar Industry

The weakening of the Indonesian cane sugar industry which is unable to keep pace with the rapidly increasing demand for Refined Crystal Sugar (GKR), especially for the food, beverage and pharmaceutical industries, has prompted the government to open up investment opportunities to build refined sugar factories using imported raw sugar raw materials. The private sector is eyeing this opportunity by building several refined sugar factories in Indonesia, especially in Java. According to data from the Investment Coordinating Board (BKPM) in 2012, there were around 15 investors building new sugar factories.

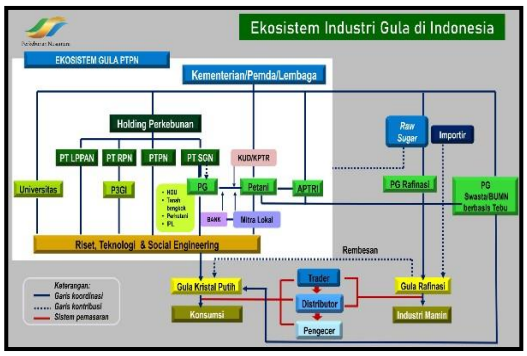

Figure 2. Indonesian Sugar Industry Ecosystem

The government has made various efforts to strengthen sugar as part of food security, including the latest by issuing Presidential Decree no. 66 of 2021 concerning the National Food Agency and the Formation of a Food Cluster. Domestic sugar production is relatively stagnant even though 11 new Sugar Mills (PG) have been built in the 2009-2019 period, namely around 2.1 – 2.4 tons. On the other hand, consumption needs are increasing along with the growth of the sugar-using industry as well as the population so that Indonesia is increasingly dependent on imports and self-sufficient is further away.

The Sugar Company as an industrial component continues to consolidate internally and through increased partnerships with farmers. In addition to productivity and efficiency problems faced by producers (PG and Farmers), currently PG is also faced with the problem of low utilization due to a shortage of sugarcane raw materials which is partly due to the availability of land. On the other hand, land for sugarcane raw materials is still maximally concentrated in Java, Sumatra and parts of Sulawesi, while Kalimantan and Papua, as well as West Papua, have not yet explored their land. This problem will presumably become a discussion and discussion at a national forum, where the output is expected to be input for the government as material for policy formulation, directives and follow-up steps in solving productivity problems in the field, determining alternative land expansion and even the possibility of using alternative sources of material other than sugar cane.

Main Issues

1. Indonesia is currently still importing sugar - 4.9 million tons per year.
2. BUMN Sugar Production will increase by 371 thousand tons in 2022, and increase by 1.1 million tons in 2024.
3. Reduced sugarcane land owned by farmers due to the less profitable sugarcane economy.
4. Increasing the volume of national sugar imports by 1.6% (CAGR) in the last 5 years.
5. Main Challenges to Increasing Sugar Production 1 Inefficient Agricultural Practices and low seed quality 2.63% of sugar mills in Indonesia are over 100 years old.

RESEARCH RESULTS AND DISCUSSION

National Sugar Production in 2021 is 2.3 million tons/year consisting of 1.3 million tons of private production (54%) and 1.0 million tons of BUMN production (46%). Through Presidential Regulation (Perpres) No. 66 of 2021, the National Food Agency (Bapanas) was formed with the task of carrying out governmental tasks in the food sector according to the mandate of Law No. 18 of 2012 concerning Food which has been amended in Law No. 11 of 2020 concerning Job Creation. The need for national sugar consumption in 2021 is 3,127,036 tons assuming the need for sugar consumption per capita is 11.43 kg/year consisting of direct household consumption of 6.81 kg/year, horeka consumption of 3.06 kg/year, and industrial consumption household 1.56 kg/year. The need for consumption in 2021 increased by 12.1% compared to 2020, which was only 2,788,504 tons, assuming the need for sugar consumption per capita was 10.32 kg/year. The three regions with the highest demand for sugar consumption include West Java (558,671 tons), East Java (470,619 tons), and Central Java (422,596 tons).

Figure 3. Demand and Production of GKP Sugar Factory in Indonesia

From early 2022, world production will improve slightly. It is estimated at 181.1 million tons. Brazil's weaker performance was offset by gains in the EU, India, Russia and Thailand. Exports are expected to improve slightly at 62.1 million tonnes. Brazil's declining performance was partly offset by an increase in Thailand's exports. Deficits in the 'sugar balance' will still occur. It is estimated that until September 2022. Prices are still stable, high or slightly decreasing. Apart from the situation in Brazil, it is also due to supply chain problems that have not yet recovered. As directed by the President of the Republic of Indonesia in order to increase National Food and Sugar self-sufficiency, namely: Immediately look for a good agricultural development scheme design so that it can complete food commodities that are still imported such as soybeans, corn, sugar, garlic; Fulfilling domestic demand for sugar should be the main target for opening sugar factory land, because there are still around 80,000 hectares of expansion opportunities that can be carried out.

So the role of the Ministry of SOEs for food security still sees 3 Main Challenges in the framework of Realizing Food Security in accordance with the Government's Vision RPJMN 2020-2024, namely the Level of Food Security is still low, The need to increase the welfare of farmers/fishermen/breeders and the need to increase Operational Excellence and Technology Modernization. The Ministry of BUMN formed a Food Industry BUMN Holding (Strategic Holding) to support the achievement of the Food Security Vision, to answer the 3 main challenges mentioned above, which consist of Rice and Holti Culture (merger), Livestock, Fisheries (merger), Salt, Trading and Logistics (merger), the Sugar Industry and the Existing RNI subsidiary. In particular, the target for sugar products is 80 tonnes/ hectare of sugar cane productivity and 8.5% yield of sugar.

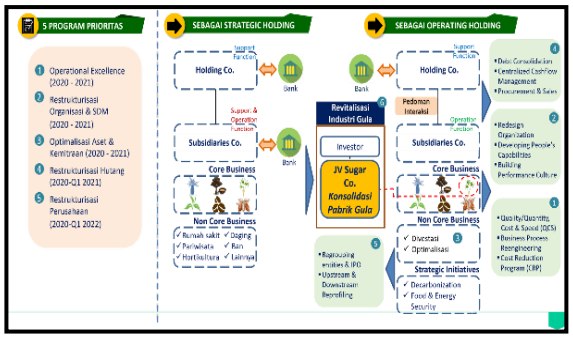

Figure 4. Food Industry SOE Holding Scheme

In accordance with Article 28 paragraph (1), the Minister in charge of government affairs in the trade sector delegates authority to Bappenas in terms of formulating policies for determining food price stabilization and distribution policies, formulating policies and determining the need for food exports and imports.

There are 9 (nine) types of food that are under the authority of Bapanas, including: Rice, Corn, Soybeans, Consumable Sugar, Onions, Poultry Eggs, Ruminant Meat, Poultry Meat, and Chilies. The Global Trends in the Food Industry during the Covid-19 Pandemic are expected to be a catalyst for agricultural industry trends to drive change or acceleration in Increasing efficiency & shifting of cropland, Shifts in purchasing behavior for Agricultural materials, The need for digitization & automation, and encouragement to localize the Supply Chain. In accordance with the big vision of the BUMN Food Holding in the agricultural sector and the meter industry, ensuring the availability and affordability of food ingredients with the aim of becoming the largest producer of high-quality seeds, rice and horticulture in Indonesia and Southeast Asia; To be the largest and most profitable salt producer in Indonesia; Becoming the most profitable sugar company in Indonesia and owning a World Class Sugarcane Mill.

Sugar, Global Trends (2021-2025), that cane sugar will still be dominant, beet sugar will have its own market segment. Meanwhile, the sugar market is estimated to be 'immune' from turmoil, especially due to strong demand. From the type of sugar: white sugar, brown sugar (brown sugar), liquid sugar, white sugar is still dominant. Forms of sugar: granular sugar, powdered sugar, syrupy sugar. Granular sugar predominates, but powdered sugar and syrupy sugar increase. Sugar production: +5.2%/year; sugar balance 180-200 million tonnes. Sugar consumers: the food and beverage industry, the pharmaceutical and personal care industries, and households. The food and beverage industry is dominant. Requests are getting 'customized', with more specific specs/features. Sugar producers: Brazil, India, USA, EU, China and Thailand and Companies: Suedzucker, Tereos, Cosan, Mitr-Phol Sugar, Associated British Foods, Nordzucker, Biosey/Louis Dreyfus, Wilmar International, Thai Roong Ruang still dominates the sugar market world.

Proposals for the Sugar Trading System in the future include establishing an integrated sugar auction system through one platform that involves many sugar companies. This aims to facilitate monitoring of transactions, stocks, movement of goods, as well as intervention in establishing a fair sugar auction price; Optimizing distribution channels by sugar factories to distribute sugar supply evenly, avoid oversupply in certain areas, cut goods transportation costs, and reduce dependency on certain distributors; Implementation of the Sugar Cane Purchasing System (SPT) optimally for all sugar factories.

With the sugarcane purchasing system, farmers are no longer involved in terms of quality and sugar trading and do not suffer factory performance inefficiencies which in the end are expected to increase farmers' interest in planting sugarcane. With a buy-out system, all sugar yields are in the hands of sugar companies so that it will be easier for the Government to determine policies regarding the sugar trading system; Utilizing the Warehouse Receipt System as an alternative to price management and white crystal sugar reserves. Through Regulation of the Minister of Trade No. 14 of 2021 concerning Amendments to Permendag Number 33 of 2020, White Crystal Sugar is now included in goods that can be stored in the Warehouse Receipt System (WRS); The application of WRS offers a wide range of benefits for farmers, the business world, banking and for the government, including: Control and stability of sugar prices Logistics and distribution efficiency Provides transparency in the logistics system which is very necessary in order to achieve national food security Shorten sugar supply chains white crystals to consumers.

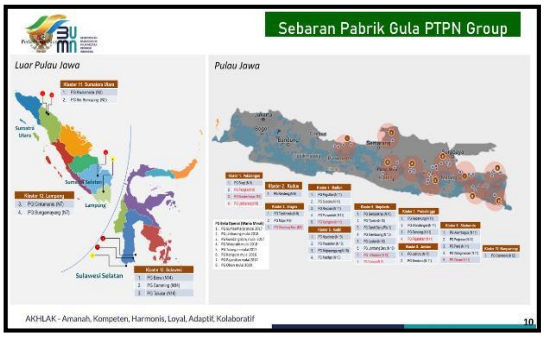

Figure 5. Distribution of PTPN Group Sugar Mills

Land Potential For Sugar Cane Expansion, among others:

1. Land Areas for Other Uses (APL), namely dry land/conversion of other non-productive commodities, support for water sources (reservoirs, deep wells), infrastructure (roads, bridges).
2. Abandoned former Cultivation Right (HGU) land (according to the RTRW and Land Suitability) where based on the results of an assessment of the neglected plantation business the revocation of its business permit is proposed. Abandoned former HGU land can be converted for sugarcane commodities by changing business permits and meeting agro-climate suitability (Permentan Number 98 of 2013), Coordinating with Regional Government (Governor/Regent), Submission of utilization to the Ministry of ATR/BPN.
3. Production Forest Land/Perhutani/Inhutani, where the results of identification of land suitability for sugarcane development. Submission of utilization to the Ministry of Environment and Forestry (Ministry of Environment and Forestry Regulation Number 7 of 2017).
4. Customary/ulayat land, according to the results of the identification of the availability of land and its suitability. Submission of utilization to customary/ulayat stakeholders and known to the Governor/Regent.

Selection of alternative sugar raw materials such as:

1. Corn sugar is claimed to be safe for consumption by diabetics because it is low in calories. In addition, corn sugar can also be used as a good sweetener for people who are on a diet;
2. Coconut sugar is similar to palm sugar, but the color is not as dark as palm sugar;
3. The sugar beet plant in Indonesia is the result of breeding so it can be grown in tropical climates. The potential for harvesting sugar beets in Indonesia is quite large, around 130 tonnes/ha. Sugar beets can be a promising alternative for sugar production;
4. The Stevia plant was estimated to have entered Indonesia in 1977, the Stevia plant is a commodity that has great opportunities to be cultivated and is worthy of being a leading commodity in the future development of agribusiness and agro-industry;
5. Date palms are still palms. According to research, dates contain 60% sugar;
6. Palm sugar is similar to palm sugar and coconut sugar. Palm sugar is also processed from the sap obtained by tapping male palm flowers. According to information, palm sugar can be found in NTT;
7. Maple sugar has been produced in North America for centuries and is still used as a sweetener today. Maple sugar is twice as sweet as standard granulated sugar;
8. Palm sugar is produced from the sap obtained by tapping the male flower bunches of aren. From one bunch of male flowers you can get as much as 4-5 liters of sap.

Reduced sugarcane land owned by farmers due to the unprofitable economics of sugarcane. National sugar import volume increased by 1.6% (CAGR) in the last 5 years. Main Challenges to Increasing Sugar Production 1 Inefficient Agricultural Practices and low seed quality 2.63% Sugar Mills in Indonesia are over 100 years old.

CONCLUSION

SOEs have a role in fulfilling national sugar, Efforts to increase SOE sugar production Addition and Conversion of Sugar Cane Land, Operation Excellence On Farm Assets to increase land productivity and Revitalization and Establishment of New Factories. Formation of the Sugar Corporation. as a strategic step taken by BUMN in order to answer the challenge of self-sufficiency in sugar which can be beneficial for increasing the welfare of sugarcane farmers, price certainty for consumers, creating new jobs, reducing sugar imports, increasing state revenue. With Sugar Corporate, Indonesia is projected to be self-sufficient in sugar consumption in 2025. PTPN & RNI contribute 46% of the National Sugar Production; PTPN and RNI have a total of 40 operational PGs with a capacity of 146 thousand TCD and a total land area of 197 thousand ha; PTPN and RNI need to increase production to support domestic sugar needs.

Recommendation: Realizing the implementation of Presidential Regulation (Perpres) No. 66 of 2021, the National Food Agency (Bapanas) was formed with the task of carrying out government tasks in the food sector according to the mandate of Law No. 18 of 2012 concerning Food which has been amended in Law No. 11 of 2020 concerning Copyright Work; Formation of an integrated sugar auction system through one platform involving many sugar companies. This aims to facilitate monitoring of transactions, stocks, movement of goods, as well as intervention in establishing a fair sugar auction price; Implementation of the Sugar Cane Purchasing System (SPT) optimally for all sugar factories. With the sugarcane purchasing system, farmers are no longer involved in terms of quality and sugar trading and do not suffer factory performance inefficiencies which in the end are expected to increase farmers' interest in planting sugarcane; Utilizing the Warehouse Receipt System as an alternative to price management and white crystal sugar reserves. Through Regulation of the

Minister of Trade No. 14 of 2021 concerning Amendments to Permendag Number 33 of 2020, White Crystal Sugar is now included in goods that can be stored in the Warehouse Receipt System (WRS); Collaboration between BUMN, Ministry of Agriculture, Perhutani and RNI in expanding the potential of sugar cane plantations in Kalimantan, Papua and West Papua; Taking strategic steps including overall strategic business model in production and supply chain; consolidating and synergizing the DN sugar cane business, imported DN sugar business, internal business and joint business/in partnership with farmers; Encouraging related Stakeholders to technologically develop alternative raw materials for sugar, in addition to ingredients from sugarcane.

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