

## ANALYSIS OF BETEL NUT VALUE CHAIN FOR EXPORT PURPOSES IN AGAM REGENCY

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### Abstract

*The demand for betel nut from international markets is continuously increasing, but the agricultural supply chain for this product is quite complex and requires special handling, thus affecting the agricultural product's price. Therefore, research on the analysis of betel nut value-added supply chains is crucial to determine the amount of additional value from each stage and actor involved in the supply chain. The research was conducted in Palembang, Agam, and Padang, West Sumatra from May to August 2022 using qualitative and quantitative descriptive analysis methods with primary data from experts and farmers and secondary data from literature studies and related sources. This study found that betel nut has the potential to be exported to several countries, such as India, Iran, and the United Arab Emirates, but there are several problems hindering the distribution process. The betel nut supply chain involves several parties, ranging from suppliers to exporters, and there is no contractual relationship between them. This study also identifies criteria for betel nut suitable for export, including low water content, uniform color, large size, meeting food safety standards, and high sugar content. The process of exporting betel nut from Indonesia to India involves selection and collection, processing and packaging, transportation, and export. Thus, betel nut cultivation in Agam Regency can be effective, efficient, and sustainable by increasing the value-added at each production stage.*

*Keywords: betel nut, Export, Value-Added, and Supply Chain.*

### 1. INTRODUCTION

Indonesia is one of the world's largest producers of betel nuts commodities, with production reaching around 500,000 tons per year. Export destinations for betel nuts commodities from Indonesia include India, Bangladesh, Pakistan, Malaysia, and Singapore. Demand from these countries is driven by the use of betel nuts fruit and its derivatives as raw materials in the cigarette and pharmaceutical industries, as well as traditional food and beverages. [Huda et al., 2020]. Additionally, demand for betel nuts fruit and its derivatives from the international market has continued to increase in recent years. According to data from the Central Statistics Agency, the export value of betel nuts fruit and its derivatives from Indonesia in 2020 reached approximately USD 231 million. [BPS, 2021].

The supply chain for agricultural products is quite complex. The logistics system for agricultural products has certain characteristics and requires special and different handling, as it is influenced by the production system, the nature of the product, and the consumers themselves. The agricultural supply chain in Indonesia involves many actors, ranging from farmers to consumers. However, due to the lack of a direct collective system from small farmers, many players and transactions must be passed through first, ultimately leading to high agricultural prices [Perdana, 2015]. Meanwhile, according to Cooper et al. [1997: p.2], supply chain management is an integrated business process from producers to end consumers that goes through suppliers providing products, services, and information that add value to consumers. Value-added is also the price paid by consumers to the chain of providers of goods and services obtained.

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As a potential and largest producer of betel nuts commodity, the cultivation business in Palembayan sub-district needs to apply a system that can make it effective, efficient, and sustainable. Betel nuts farmers supply their products to various areas in West Sumatra province as well as export destinations. It is necessary to determine the amount of additional value from each stage and actor involved in the supply chain, hence a research is needed to analyze the value-added chain of the betel nuts commodity. This research is important to know how much value is added in terms of price and demand at each stage of the supply chain.

## 2. IMPLEMENTATION METHOD

The research method to be used is qualitative and quantitative descriptive analysis. Primary data will be collected from experts/key informants (exporters), as well as informants from the sample farmers. Secondary data will be obtained from literature studies.

Primary data will be obtained from the formulation of the research problem, objectives, and theoretical framework, which will be applied through observation or direct surveys and interviews using an instrument in the form of a questionnaire. The starting point for developing an instrument is the variables that are determined to be studied. Operational definitions are then given for these variables, and indicators to be measured are identified. These indicators will then be broken down into question items or statements.

Meanwhile, secondary data will be obtained from relevant sources that support this research activity, such as literature studies and scientific articles and journals related to the research to be conducted. Secondary data can also be obtained from various government agencies and institutions related to the research activity.

To analyze the research data, value-added analysis will be conducted by comparing the value of goods/services at each stage of the production process, from raw materials to finished products. In this study, value-added analysis will be performed to determine the contribution of each production stage in adding value to the betel nut commodity before it is exported. The analysis will be carried out using the Value-Added Analysis method developed by Fitzroy and Herbert (2001), which has been proven effective in analyzing value-added in various types of industries. First, the initial value of the betel nut raw material will be calculated, and then the value-added of each production stage such as processing, packaging, and transportation will be analyzed. Each production stage will be analyzed by comparing the final production value with the initial production value, and the difference will be considered as the value added of that production stage.

Value-added analysis will help to identify the contribution of each production stage in adding value to the betel nut commodity before export, and also to identify factors that can increase the value added at each stage of production. This can help producers and business actors to improve the efficiency and productivity of production, as well as enhance the competitiveness of betel nut products in the international market.

Mathematically, the Value-Added Analysis method can be explained as follows:

$$VA = Vr - Vc$$

VA: value added from a production stage

Vr: revenue from a product after passing through that production stage

Vc: cost of raw materials or products before passing through that production stage.



### 3. RESULTS AND DISCUSSION

#### 3.1 Results

Based on the research results, it was found that the areca nut commodity in Agam Regency, West Sumatra has the potential to be exported to several countries, such as India, Iran, and the United Arab Emirates (UAE). However, there are several problems in the export process that hinder the smooth distribution of this commodity. Some of the problems faced include inconsistency in agreements, errors from recipients/importers, and problems on the exporter's or entrepreneur's side.

In terms of the value chain, there are several stages from collecting the areca nuts from farmers to reaching the exporter. This process involves several parties, such as exporter suppliers or collectors, wholesalers, and exporters. Each farmer can produce a maximum of 70 kg and then sold to a collector. A collector can produce up to 1.5 tons and sold to a wholesaler. While a wholesaler can collect up to 30 tons and sell it to an exporter, where the exporter can export up to 100 tons. However, the relationship between actors in the sale of areca nuts is not bound by a contract.

#### 3.2 Discussion

At the initial stage of data collection, a survey was conducted with wholesalers and exporters in the city of Padang. With information from BPS data, instructions from exporters and wholesalers in Padang revealed that one of the production centers for areca nut commodities is located in several areas in Agam Regency, namely Palembayan and Lubuk Basung, as well as several other areas in Padang Pariaman. At this stage of data collection, data was collected from local vendors where the acquisition price of areca nuts varied greatly at this level, as well as from farmers who became research samples.

**Table 1** Farmers Population

Number of Plant Populations	Number of Farmers	Percentage
110-200 trees	22	31.4%
310-500 trees	36	51.0%
Less than 110 trees	-	17.6%

There are criteria for areca nuts that are suitable for export according to key informants/exporters:

1. Moisture content: Areca nuts with moisture content below 8% are considered better and more durable in the shipping and storage process.
2. Color: Areca nuts with a dark and even color are considered better than those with a pale or uneven color.
3. Size: Areca nuts that are uniform and large in size are considered better because they facilitate processing and packing.
4. Compliance with food health and safety standards: Areca nuts must be free from harmful chemical and must comply with applicable food health and safety standards in destination country of export.
5. Sugar content: Areca nuts with high sugar content are considered better because they provide a strong sweet taste and are preferred by consumers.

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According to Huda et al, 2020, the criteria for good and export-worthy betel nuts include high quality, large size, thick flesh, free from defects, pests and diseases, and low moisture content. Additionally, betel nuts to be exported must be harvested at the right time, kept clean, and properly packaged. However, information from export companies revealed that they source their betel nuts from export suppliers or collectors. The exporters treat the commodity received from the suppliers because although the farmers claim their product is good, there are still some betel nuts that are not of good quality, with moisture content as high as 12% or more. Therefore, the betel nuts are processed with a polishing machine to remove the husk and then sun-dried to achieve the desired quality.

Generally, the process flow of betel nut commodity export from Indonesia to India includes:

1. Selection and collection of betel nuts: Betel nuts are harvested from betel nut plantations by farmers and collectors, then selected and sorted to obtain high-quality betel nuts, and undergo sorting and grading processes.
2. Processing and packaging: The betel nuts are then processed with a polishing machine to remove the husk and reduce the moisture content. After that, the betel nuts are dried and packaged in sacks or crates for shipment preparation.
3. Inspection and document preparation: Before shipment, the betel nuts are rechecked to ensure their quality and compliance with established standards. Next, export documents preparation, such as certificate of authenticity and fumigation certificate, are carried out in accordance with export requirements from Indonesia and import requirements to India.
4. Shipment: The betel nuts are then shipped through the shipping route designated by the exporter, which can be via sea or air transport. The shipping process is carried out while meeting the logistics and security requirements.
5. Receipt and distribution: After the betel nuts arrive in India, they are received by the importer and then distributed to various collectors or processing plants for further processing or sold directly to end consumers.

The high import duties (108% - 200%) on betel nut commodity exports to India affect the competitiveness of the product in the global market. Therefore, efforts are needed to reduce import duties or improve the quality of the product to compete in the global market. Quality criteria for betel nuts, determined based on grades, can affect the selling price of betel nuts. Therefore, objective and transparent quality testing of betel nuts is needed to improve product quality and obtain better prices.

Inconsistencies in agreements and errors by the importer in the export process are also constraints that can result in losses for those involved in the value chain. Therefore, improvements in coordination and communication among stakeholders are needed to improve the efficiency of the export process and minimize the risk of losses. The treatment of betel nut commodities by exporters needs to be closely monitored and regulated to avoid practices that harm farmers, collectors, and exporters. In addition, efforts need to be made to improve product quality through proper processing and the use of better technology.

The following are the grades of betel nuts that are traded or exported commodities: (note, exchange rate: \$1 = Rp. 14,500,-):

1. Grade 95+ (90:10) is purchased at a maximum price of Rp. 14,000 per kg and exported within the price range of \$1,600 to \$2,100 per ton. Therefore, the analysis shows that it is

sold at a price of Rp. 30,450 per kg, with an added value of Rp. 16,450 per kg, based on the purchase price of Rp. 14,000 per kg.

2. Grade Lali (65:35) is purchased at a price of Rp. 4,000,- to Rp. 5,000,- per kg and exported at a price of \$1,150 per ton. Therefore, the analysis shows that the purchase price of Rp. 5,000,- per kg is sold at a price of Rp. 16,675,- per kg, with an added value of Rp. 11,675,- per kg.
3. Grade Kropas (bottom) is purchased at a price of Rp. 2000,- / Kg and exported at a price of \$ 1.050 / ton. Thus, the analysis shows that the purchase price of Rp. 2,000 / Kg is sold at a price of Rp. 15.225,-/ Kg, with an added value of Rp. 13.225,-/ Kg, but it requires additional costs and exporters usually do not further process this grade. They prefer to sell it locally or not buy it at all.

**Table 2** Grades of betel nuts by exported

Grade of Betel Nut	Buying Price (Rp/Kg)	Selling Price (Rp/Kg)	Selling Price (\$/ton)	Added Value (Rp/Kg)
95 + (90:10)	14.000	30.450	\$1.600 - \$2.100	16.450
Lali (65:35)	4.000 - 5.000	16.675	\$1.150	11.675
Kropas Bawah	2.000	15.225	\$1.050	13.225*

\* requires additional costs

To increase the added value of betel nuts commodities, there are several things that can be done, such as improving the quality and consistency of production, increasing processing and processing using polishing machines and modern technology, and improving promotion and marketing of products. In addition, the development of halal and sustainable certification can also increase the added value and competitiveness of betel nuts commodities from West Sumatra.

To improve the quality and consistency of production, cooperation with local farmers can be done to improve production quality. In addition, the use of modern technology in processing and processing can also help increase the added value of betel nuts commodities. In terms of promotion and marketing, branding campaigns and improving product packaging quality need to be carried out in order to compete in the international market.

## 4. CONCLUSION

Based on research on the analysis of the value chain of exported betel nuts commodities in Agam Regency, it can be concluded that betel nuts is one of the leading commodities produced in Agam Regency, West Sumatra. The process of exporting betel nuts faces many problems, such as inconsistency in agreements and mistakes by importers and exporters.

The quality of exported betel nuts varies and can be improved through processing with polishing machines and increased quality control by exporters/entrepreneurs. However, the acquisition price for exporters from suppliers is still low, averaging below Rp. 10,000 per 10 Kg package for export.

In the betel nuts value chain, there are several players from farmers, collectors, market traders, wholesale traders, to exporters. Each player has their own role and challenges in running the betel nuts business. Good coordination among these players in the value chain can help improve the efficiency and effectiveness of the betel nuts business and increase profits.

In this regard, the government can play a role in helping to overcome problems in the betel nuts value chain, such as facilitating meetings among players to improve coordination, providing

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training and certification for farmers and collectors to improve production quality, and helping to find new markets and optimize access to existing markets.

Therefore, joint efforts among players in the betel nuts value chain, including the government, are needed to address existing problems and improve the efficiency and effectiveness of the betel nuts business, so as to provide greater economic benefits to Agam Regency and West Sumatra as a whole.

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