

The Value Chain Mapping Of Porang Agribusiness In East Java Using AHP Approach

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Submitted 22 August 2024; Approved 6 January 2025

ABSTRACT

The increasing demand for porang has also led to increased public interest in cultivating it, including post-harvest handling. So far, porang produced in several district centers in East Java province has good quality, so it is very good to be developed optimally. The potential of porang as a “gem” commodity from East Java has not only made the province the center of porang cultivation, but also developed as the center of the porang processing industry. However, the performance of the supply chain that leads to the value chain still needs to be improved to be more efficient. Lack of marketing information and low bargaining position of farmers are the main obstacles to porang development. Data collection methods using surveys and interviews with a sampling method using snowball sampling involving informants such as suppliers, farmers, traders, processors and stakeholders (associations, agriculture offices, trade offices and communities). The data analysis methods used in this study include value chain analysis and Analytical Hierarchy Process (AHP). The objectives of this study were: (1) identifying the mapping of Porang value chain in East Java, and (2) Analyze the level of importance of Porang value chain actors in East Java using the AHP approach. Based on the results of the porang value chain mapping research in East Java, it is stated that the actors consist of porang spore suppliers and input providers, producers are porang farmers, traders are collectors, and porang processors act as industrial consumers. There are three main flows in mapping the porang value chain, namely product flow, information flow, and financial flow, starting from input suppliers, farmers, traders to processors/consumers. Based on the level of importance of the actors in the AHP hierarchical analysis, the elements of decision-making in the main activities, supporting activities and stakeholder performance can be identified. In the core activities, actors with superior importance were selected, indicating that the application of product maintenance before resale has a very strong influence on value creation. In the supporting activities, actors with superior importance were selected, indicating that the implementation of the company's general management has a very strong influence on value creation. Meanwhile, the performance activities show that the implementation of product maintenance before resale has above-average performance.

Keywords: *Porang, Value Chain, Value Added, AHP*

BACKGROUND

Porang is a new commodity of agricultural excellence in Indonesia that has the potential for high prices, as a source of income for farmers and a source of welfare for rural communities. Demand for porang products in Indonesia continues to increase, especially to meet export needs. The center of porang production in Indonesia is currently in East Java Province. Based on data from the Department of Agriculture and Food Security of East Java Province, the development of

porang exports from 2018 to 2020 in East Java through the Surabaya Agricultural Quarantine Center (BBKP) has always increased. The export volume rose from 5.5 million kg (IDR 270 billion) in 2018 to 6 million kg (IDR 297 billion) in 2019, and jumped to 10.3 million kg (IDR 499 billion) in 2020. Export destination countries are increasingly diverse, including China, Belgium, Thailand, Myanmar, Japan, Vietnam, India, Taiwan, Singapore, Bulgaria, South Korea, France, and the US.

The increasing demand for porang has also led to increased public interest in cultivating it, including post-harvest handling. So far, porang produced in several district centers in East Java province has good quality, so it is very good to be developed optimally. However, the performance of the supply chain that leads to the value chain still needs to be improved to be more efficient. Lack of marketing information and low bargaining position of farmers are the main obstacles to porang development. The performance of the porang value chain in East Java faces various issues that affect its efficiency and competitiveness in the global market. The main problem is limited post-harvest infrastructure and technology, such as processing and storage facilities, which often results in a decline in product quality and selling prices. In addition, the high dependence on export markets makes businesses vulnerable to fluctuations in international demand. Farmers' lack of access to information on export quality standards and sustainable agricultural practices is also an obstacle, coupled with the lack of integration between farmers, processors, and exporters, which creates inefficiencies in the supply chain. Increasing global competition and commodity price volatility in the international market are further pressuring the competitiveness of East Java porang. These issues point to the need for a holistic approach involving the government, private sector, and farmers to improve the performance of the porang value chain in a sustainable manner.

The potential of porang as a "gem" commodity from East Java not only makes the province as a center of porang cultivation, but also develops as a center of porang processing industry. The East Java Provincial Government has made efforts to protect porang farmers, through the East Java Governor's Decree regarding the prohibition of exporting porang frogs (seeds) abroad. These porang frogs are hunted from many countries with tropical climates for porang cultivation. The export ban was imposed because many seeds were sold abroad. This porang commodity can be exported not only in raw form and semi-finished goods, but already in processed form, one of which is porang rice. Based on this, the government wants to build a mutually beneficial ecosystem, through porang business actors involving suppliers, producers, processors to marketers through value chain mapping

Value chain analysis can help find out the actors in the marketing chain which can then formulate the right strategy either by cutting the chain or by providing solutions for each actor. Sukayana, et al (2013), stated that in an agricultural activity, it is necessary to pay attention to the production system from planting to maintenance, then the harvest system and in a series of marketing value chain activities become important activities to see how effective the chain is created, after which the price margins between actors in the value chain will be seen. Irianto (2013) found that in a series of value chain activities each actor who plays a role in it will get a proportional profit but farmers do not get proportional results because farmers lack information

both from prices, marketing systems, and in terms of the quality of the plants produced, if a good series of activities has been created, it will form an efficient chain.

Chain analysis requires market mapping with the aim of tracking and analyzing the contributions of all chain actors and the relationships between them (Zamora, 2016). Calatayud & Ketterer (2016), explained that the value chain includes a combination of activities that start from the design of the required product or service to its delivery or provision to consumers. Some of the main activities in the value chain are: (a) Inbound logistics, which deals with the appropriate inputs or services in terms of quality, quantity, price, time, and place. (b) Production, to convert inputs into final products. (c) Outbound logistics, which includes the storage and distribution of products to ensure the product has the right quality, quantity, price, and is in the right place at the right time. (d) Marketing and commercialization, which includes the development and implementation of goods and/or services sales strategies. (e) Customer support, so that clients can seek information and technical assistance, lodge complaints, and negotiate returns and refunds, among other activities. The creation of value for a customer comes from 3 main sources, including: activities that differentiate products or create a characteristic, activities that reduce product costs with the aim of expanding market share, and activities that can immediately meet customer needs. (Wijaya, 2019), said that value chain analysis will involve various other aspects, such as the influence of organizational culture, economic matters, and personal matters of each business actor in an effort to achieve the level of consumer satisfaction. Basically, value chain analysis is divided into 2 dimensions, namely the main dimensions and supporting dimensions. The types of main dimensions are further divided into 5 including: inbound logistics, operations, outbound logistics, marketing or sales, and services. While the supporting dimensions consist of 4 types including: general administration, human resources management, technology development, and procurement (Porter, 1985)

In the value chain there are several core processes such as inputs, farmers, production, processing, trade and consumption. In mapping a chain, the actors involved in it are first selected. The importance of value chain management encourages decision makers to determine the right method. Therefore, the selection of leading stakeholders involved in the value chain is carried out using the Analytic Hierarchy Process (AHP). AHP (Analytic Hierarchy Process) is one of the most commonly used methods as a management tool in the industrial sector, such as determining supply chains, logistics management, and training through strategy and performance to achieve a certain goal (Tramarico et al., 2015). AHP was chosen as the methodology in the study due to its ability to break down complex decision-making problems into hierarchical structures that are easier to analyze, particularly in contexts with many criteria and alternatives. In agricultural research, AHP is often used to evaluate priorities or strategies in resource management, supply chain or process efficiency based on factors such as productivity, sustainability, technology and markets. AHP allows researchers and stakeholders to compare these elements in pairs, weight each criterion according to its importance, and generate data-driven priorities. In similar research, AHP is usually applied by building a hierarchy of problems (objectives, criteria, sub-criteria, and alternatives), conducting pairwise comparison-based assessments, calculating priority weights using eigenvectors, and checking the consistency of decisions with consistency ratio (CR). The final

results of AHP are often used to formulate strategic recommendations, such as prioritizing value chain development or optimal resource allocation, thus supporting more objective and measurable decision-making (Saaty, 2008).

Based on this background, the objectives of this study are: (1) Identify the value chain mapping of Porang in East Java, and (2) Analyze the level of importance of Porang value chain actors in East Java using the AHP approach. Value Chain Mapping and Porang Agribusiness Development Strategy in East Java with AHP Approach, this will be a report that can be useful for related parties, both Government, stakeholders, academics and industry. Linkages with the University's Excellent Research and leading themes are Food Security and Industrial Agriculture with the suitability of the leading theme of agricultural development policy and the suitability of the leading sub-theme, namely the efficiency of the value chain of agricultural products.

RESEARCH METHODS

In this study, the object studied was the value chain of porang commodity in East Java. The location selection was purposive for porang cultivation centers in Madiun Regency. The research location was chosen because Madiun Regency is the center of porang producers in East Java and Madiun porang endemic. This study aims to identify the mapping of porang value chain in East Java, determine the performance level of porang value chain in East Java. The data used in this research are primary data and secondary data obtained by observation, interview, recording, documentation, and literature study techniques. Sampling method using snowball sampling involving informants such as suppliers, farmers, traders, processors and stakeholders (associations, agriculture offices, trade offices and communities). Data analysis methods used in this study include value chain analysis and Analytical Hierarchy Process (AHP).

The value chain analysis used is Porter's generic value chain mapping model. This analysis is used to determine the series of activities of porang commodities in East Java. Value chain analysis shows activities that have been optimized and activities that have not been optimized in contributing to the success of the value chain in porang commodities in East Java. Value chain analysis shows activities that have been optimized and activities that have not been optimized in contributing to the success of the value chain in porang commodities in East Java. This can be analyzed in the activity of processing raw material products into finished products.

The value chain as a tool to identify ways to generate added value for consumers, in this analysis the overall value is displayed consisting of value activities and profits (margins), value activities are divided into five primary activities and four support activities. Kaplinsky & Morris (1985), state that there are seven stages in value chain analysis, namely: (1) Identification of actors as the starting point for value chain analysis, namely determining at which point the study begins. (2) Value Chain Mapping (actors and product flow, flow of income, flow of information), namely by tracing backwards and forwards to be able to determine the income of each actor obtained through input-output relationships. (3). Determination of product segments and critical success factors in final markets, which includes identifying which parties can be involved. (4) Analysis of producers' methods of accessing the market, principally to identify key success factors. (5) Benchmarking with

competitors or similar businesses. (6) Coordinate the value chain with relevant networks. (7) Value chain improvement. The value chain analysis can be seen in Figure 1.

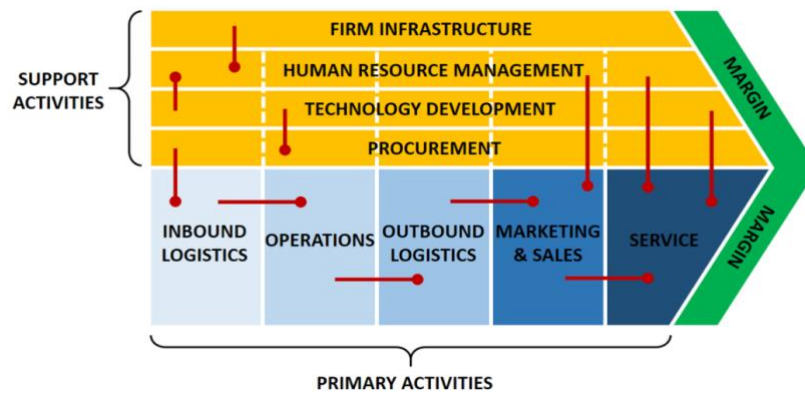


Figure1. Porter's Value Chain Analysis

The Analytical Hierarchy Process (AHP) method can help to determine the most influential Supply Chain Attribute. The results of the analysis can produce the level of importance of the performance attribute on the performance of the value chain flow. The following are procedures or work steps using the AHP method: (1) Create a hierarchical structure that begins with general objectives, followed by sub-objectives, criteria and possible alternatives at the lowest level of criteria. (2) Create a pairwise comparison matrix on intensity. Comparison is done based on the “judgment” of the decision maker by assessing the level of importance of an element compared to other elements. So that the judgment is obtained entirely $n * [(n-1)/2]$, where n is the number of elements being compared. Then determine its local priority and calculate its consistency. (3) Perform the multiplication operation between the matrix containing the local priority of the criteria with a matrix that contains local priorities of intensity/alternatives so that it will finally produce a global priority. (4) Checking the matrix elements if $a_{ij} * a_{jk} = a_{ik}$ then the assessment of the matrix is consistent, if not then do the calculation with the formula to calculate the consistency ratio. If the value is more than 10 percent then the judgment data assessment must be corrected. Instinctively, humans can estimate simple quantities through their senses. The easiest process is to compare two things with the accuracy of the comparison that can be accounted for. A quantitative scale of 1 to 9 to assess comparison of the importance of one element to another (Saaty, 2008). The Analytical Hierarchy Process (AHP) method can be seen in Figure 2.

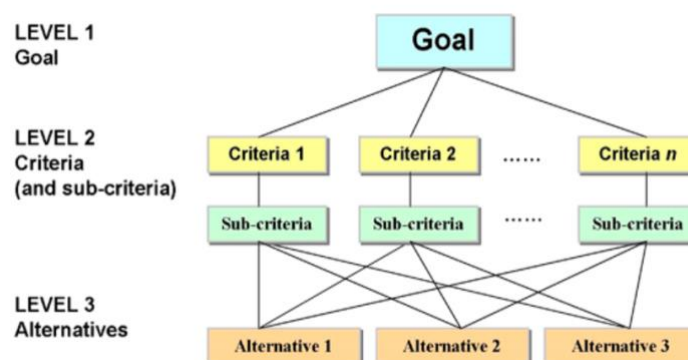


Figure 2. Analytical Hierarchy Process (AHP)

The literature study is used to explore information and references regarding the research objectives using the chosen approach or method, so as to obtain the framework used in solving the problem. The next stage is the process of collecting the data needed for research, the data collected is data in the form of supply chain attributes, and identifying supply chain models. After all the data is collected, the next stage is the research data processing stage. Finally, a discussion of the results, conclusions, and suggestions of the research is carried out. At the conclusion and suggestion stage, the research results are explained to answer several research objectives, and research suggestions are written as a form of input to parties related to the object of research and for future researchers who will raise similar topics, namely the value chain of porang commodities.

RESULT AND DISCUSSION

Value Chain Mapping of Porang in East Java

The analysis of the porang commodity agribusiness supply chain describes a combination of activities starting from inbound logistics as a supplier of quality porang spores and production facility inputs, production from farming activities, outbound logistics where quality porang products will be produced with certain treatments through the support of related parties, marketing and commercialization through trade activities and sales transactions, and consumption/ processor through increased value-added processing. The interrelationships between the 5 porang agribusiness subsystems affect each other where if an error is found in one of the processes, it will affect the performance of the other subsystems. The successful performance of the porang agribusiness subsystem occurs through different nodes of the chain where there are additional functions and processes so as to achieve maximum added value with minimal cost expenditure. The mapping stage of the core processes and actors of the porang value chain can be seen in Figure 3.



Figure 3. Mapping the Core Processes and Actors of the Porang Value Chain in East Java

The activities or activities carried out by each actor are different. The actors in the value chain are porang spore suppliers and input providers, porang producers/farmers, traders/collectors, and consumers as porang processors. The success of the four actors will be achieved if there are supporting stakeholders. The supporting stakeholders who participate in porang value chain

agribusiness activities include: Kontak Tani Nelayan Andalan (KTNA), Himpunan Pengusaha Muda Indonesia (HIPMI) Madiun, Madiun City and Regency Agriculture Office, East Java Provincial Industry and Trade Office, East Java Provincial Agriculture Office, PT New Star Konjac Madiun and PT Porang Rezeki Jaya Pasuruan. The flow of porang products is unidirectional, starting from suppliers to consumers. The product flow that occurs in porang agribusiness starts from suppliers of raw materials that provide quality porang spores, followed by farmers who convert spores or agricultural inputs into agricultural outputs (porang tubers). Furthermore, porang products will be marketed through collectors or wholesalers to consumers who act as processors in the form of fresh porang tubers or chips. Furthermore, in each mapping of porang value chain actors, there are criteria as a form of value-added-based product flow from porang commodities. Value-added criteria on supplier actors mention the criteria for porang spores that will be input for farmers. Value-added criteria on farmer actors mention about porang plants on farms. Value-added criteria for traders mention the characteristics of porang that are acceptable to the market. While the value-added criteria for porang to be accepted by processors are characteristics according to industry standardization. The porang value criteria on each porang value chain actor can be seen in Figure 4.

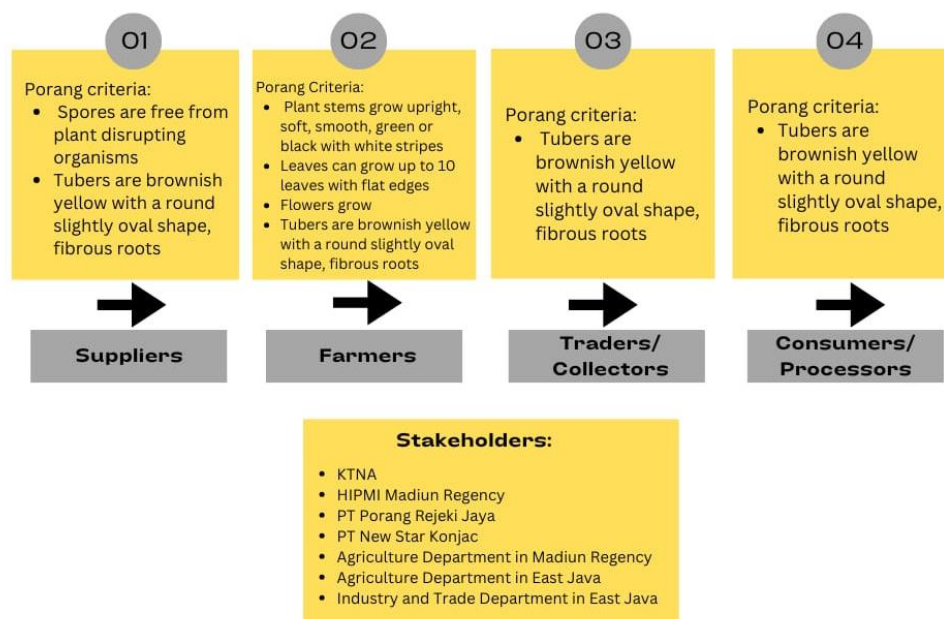


Figure 4. Product flow and Value-added criteria of the Porang Value Chain in the East Java

The flow of information that occurs in the porang commodity agribusiness goes back and forth without recognizing levels. The first actor will coordinate with the second actor, the second with the third, and so on, all value chain actors work together by producing output in the form of information. The flow of information from the supplier is in the form of prices and spore providers. The flow of information from the farmers is in the form of spore providers, market information and prices. The flow of information from the traders / collectors in the form of porang quality criteria accepted by the market. The information flow of processors in the form of standard criteria for

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processed porang products, export destination markets and export licensing documents through the port. Problems in the porang value chain on information flow involve a lack of transparency and coordination between suppliers, farmers, traders, processors, and other stakeholders. Many farmers have difficulty gaining access to accurate information regarding quality standards, market demand, or current prices, so there is often a mismatch between crop yields and market needs. On the other hand, traders and processors often face obstacles in communicating the required product specifications, especially for export markets. In addition, the lack of data integration between stakeholders results in inefficiencies, such as stock build-ups, late deliveries, or inaccuracies in production planning. This situation is exacerbated by the lack of adoption of digital technology in the value chain information system, which causes the flow of information to be slow and non-uniform. The flow of information in the East Java porang value chain can be seen in Figure 5.

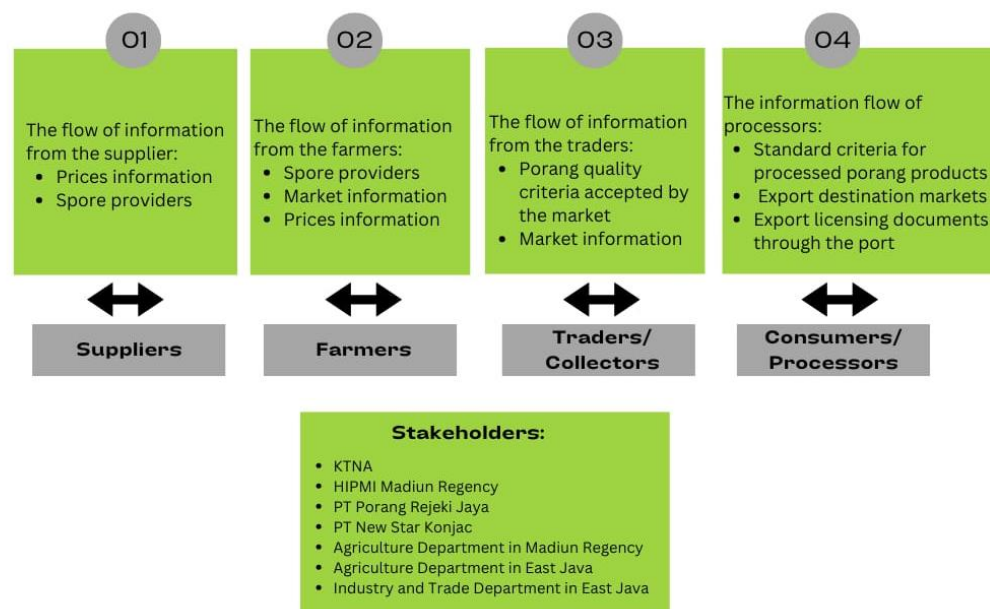


Figure 5. Information Flow in the East Java Porang Value Chain

The financial flow goes from the consumer to the supplier. The flow is the opposite of the product flow where consumers will pay for the needs and satisfaction obtained from a quality product. The price of 1 kg of porang flour in the export destination country of China is 30 RMB or \$4.4 and is equivalent to Rp 64,500. The price of 1 kg of porang tubers from collectors is IDR 2,700, while 1 kg of chips is valued at IDR 3,200. The price of 1 kg of fresh porang tubers from farmers is IDR 2,100. Thus there is an increase in the value margin of the processing innovation results. The flow of financial in the East Java porang value chain can be seen in Figure 6.

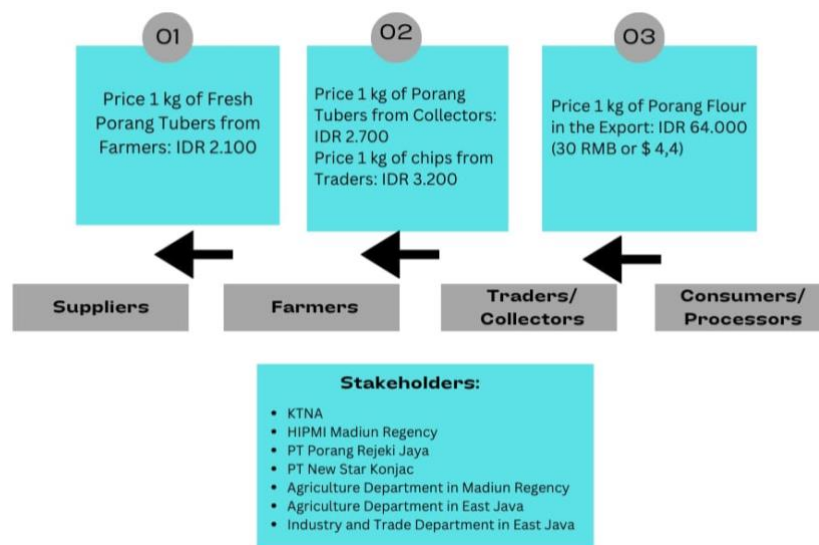


Figure 6. Financial Flow in the East Java Porang Value Chain

Level of Importance of Porang Value Chain Actors in East Java

Value chain analysis is aimed at formulating competitive strategies, understanding sources of competitive advantage, and identifying or developing relationships and linkages between activities that create value. Basically, value chain analysis is divided into 2 dimensions, namely the main dimension and the supporting dimension. The types of main dimensions are further divided into 5 including: inbound logistics, operations, outbound logistics, marketing or sales, and services. While the supporting dimensions consist of 4 types including: general administration, human resources management, technology development, and procurement (Ngangi & Tumewu, 2018). In a value chain, there are several core processes such as inputs, farmers, production, processing, trade and consumption. In mapping a chain, the actors involved in it are first selected. The importance of value chain management encourages decision makers to determine the right method. Therefore, the selection of leading stakeholders involved in the value chain is carried out using the Analytical Hierarchy Process (AHP). AHP is one of the most commonly used methods as a management tool in the industrial sector, such as determining supply chains, logistics management, and training through strategy and performance to achieve a certain goal (Tramarico et al., 2015).

The selection of leading stakeholders is done by choosing the best alternative from several existing alternatives. In the porang commodity of East Java Province, there are eight alternative leading stakeholders, namely Kontak Tani Nelayan Andalan, Madiun Regency Agriculture Office, Madiun City Agriculture Office, Madiun City HIPMI, PT New Star Konjac, East Java Provincial Agriculture Office, Industry and Trade Office, and PT Porang Rejeki Jaya Pasuruan. The selection of the leading stakeholders was carried out based on criteria on the main activities, supporting activities, and performance of the actors. The selection of leading stakeholders based on the main activities has six criteria used, namely: (1) Porang inventory, (2) Product maintenance before resale, (3) Distribution to consumers, (4) Promotion, (5) Salespeople, and (6) Interaction with consumers. The selection of leading stakeholders based on supporting activities has five criteria used, namely: (1) General management, (2) Finance, (3) Business membership structure, (4) Completeness of business

support equipment, and (5) Purchase of additional products. The first step in AHP preparation is hierarchy creation. The selection of superior stakeholder decisions based on consideration of several criteria in the main activity is shown in the AHP hierarchy figure 8.

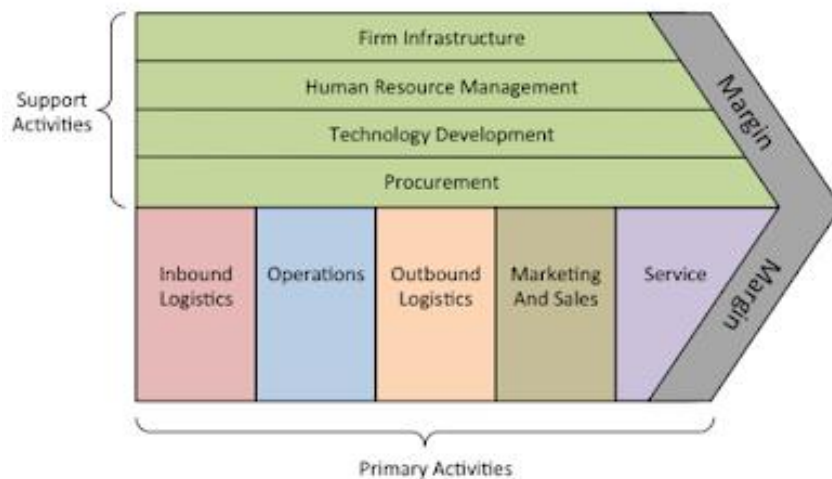


Figure 7. Competitive Strategy of East Java Porang Value Chain Analysis

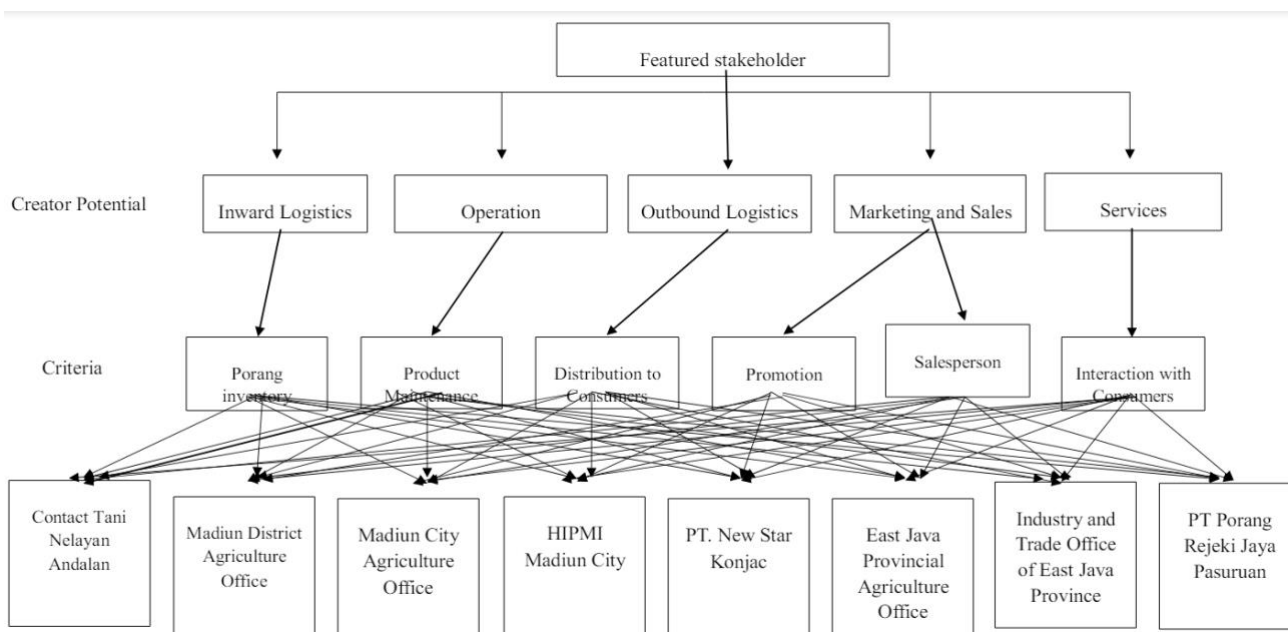


Figure 8. Hierarchical Structure Based on Main Activities

Based on the AHP hierarchy picture, the elements in decision making can be identified. Furthermore, to find out whether the assessment can be used or not, a consistency calculation is carried out. One of the consistency calculations is done by calculating the consistency ratio (CR) value. Consistency ratio is used to see whether or not the assessment of alternatives is consistent. If

the assessment has a CR value > 0.1 then the assessment is considered canceled, or inconsistent. The calculation of the CR value in the linkage matrix between criteria through the help of the Expert Choice 11 application obtained the following results:

Table 1. CR linkage between criteria

Criteria	Overall Inconsistency
Main Activities	0,01
Supporting Activities	0,00
Performance	0,01

In the linkage matrix between criteria, the overall inconsistency value obtained does not have a value of more than 0.1 so that the assessment of each alternative is said to be consistent. Therefore, there is no need to fill in the assessment again, so the weights that have been obtained can be used as weights to select alternatives. Through the help of the Expert Choice 11 application, the results of the selection of leading stakeholders based on the main activities are obtained as in the figure and table 2.

Table 2. Alternative Weights on Each Main Activity Criterion

Alternative	Weight
Kontak Tani Nelayan Andalan (KTNA)	0,090
Department of Agriculture of Madiun Regency	0,140
Department of Agriculture of Madiun City	0,105
HIPMI Madiun City	0,103
PT. New Star Konjac	0,143
Department of Agriculture of East Java	0,142
Department of Industry and Trade of East Java	0,123
PT. Porang Rejeki Jaya Pasuruan	0,155

PT Porang Rejeki Jaya, which is a provincial level processor, was selected as the leading stakeholder of porang commodity in East Java Province based on the main activities. PT Porang Rejeki Jaya is the most superior actor among other porang commodity stakeholders, among others, because the company has a division to foster MSMEs, namely porang warriors. This can show that the application of product maintenance before resale at PT Porang Rejeki Jaya has a very strong influence on value creation. Information obtained based on the results of interviews with the owner of PT Porang Rejeki Jaya is that the company conducts a partnership that begins with providing training to make organic fertilizers for free, such as POC, NC, and others. Then guarantee the purchase of farmers' porang agricultural products. It can also show that the application of promotion at PT Porang Rejeki Jaya makes the business successful. This is in accordance with research (Aldillah et al, 2023), that in order to develop faster, partnerships between farmers and the porang processing industry need to be encouraged because porang cannot be consumed directly. Together with that, it is also necessary to educate the public, especially in the context of porang as a food with added health value. In terms of production, it is necessary to improve the ability of porang farmers, especially the ability to master post-harvest technology so that they can produce processed products with higher selling value. The results of the best stakeholder selection based on supporting activities are obtained as in the table 3.

Table 3. Alternative Weights on Each Supporting Activity Criteria

Alternative	Weight
Kontak Tani Nelayan Andalan (KTNA)	0,059
Department of Agriculture of Madiun Regency	0,143
Department of Agriculture of Madiun City	0,143
HIPMI Madiun City	0,087
PT. New Star Konjac	0,149
Department of Agriculture of East Java	0,135
Department of Industry and Trade of East Java	0,135
PT. Porang Rejeki Jaya Pasuruan	0,149

PT New Star Konjac and PT Porang Rejeki Jaya were selected as the leading stakeholders of porang commodity in East Java Province based on supporting activities. PT New Star Konjac which is a district level processor is also the most superior actor among other porang commodity actors, partly due to the export segment of PT New Star Konjac which has been carried out with the main destination of China. This can show that the implementation of general management at PT New Star Konjac has a very strong influence on value creation. Information obtained based on interviews with the manager of PT New Star Konjac is that the company takes raw materials from farmers and when they arrive at the factory, several processes such as washing and drying will be carried out. This can also show that the application of complete business support equipment at PT New Star Konjac makes the business successful. Furthermore, through the help of the Expert Choice 11 application, the results of the selection of leading stakeholders based on stakeholder performance are also obtained as in the table 4.

Table 4. Alternative Weights on Each Stakeholder Performance Criterion

Alternative	Weight
Kontak Tani Nelayan Andalan (KTNA)	0,108
Department of Agriculture of Madiun Regency	0,147
Department of Agriculture of Madiun City	0,123
HIPMI Madiun City	0,136
PT. New Star Konjac	0,134
Department of Agriculture of East Java	0,100
Department of Industry and Trade of East Java	0,103
PT. Porang Rejeki Jaya Pasuruan	0,148

PT Porang Rejeki Jaya was selected as the leading stakeholder of porang commodity in East Java Province based on stakeholder performance. This is due to the grade of porang flour used by the company is safe as recommended by WHO. This can show that the application of product maintenance before resale at PT Porang Rejeki Jaya has above-average performance. Porang products at PT. Porang Rejeki Jaya get special maintenance before being sold to end consumers. Information obtained based on the results of interviews with the owner of PT Porang Rejeki Jaya is that the company processes porang with certain technologies at the factory, so that porang can be made into various safe food preparations. It can also show that the application of the completeness of business support equipment at PT. Porang Rejeki Jaya has above-average performance.

CONCLUSION AND SUGGESTION

Based on the results of research on porang value chain mapping in East Java, it can be concluded that the actors consist of porang spore suppliers and input providers, producers namely porang farmers, traders there are collectors, and porang processors act as industrial consumers. The flow of porang products that occurs in porang agribusiness starts from raw material suppliers who provide quality porang spores, followed by farmers who convert spores or agricultural inputs into porang tubers. Furthermore, porang products will be marketed through collectors or wholesalers to consumers who act as processors in the form of fresh porang tubers or chips. In each mapping of porang value chain actors there are criteria as a form of value-added-based product flow from porang commodities. The flow of information contained in suppliers regarding the availability and price of porang spores; information at the farm level is the spore provider, market information and prices; information on traders in the form of porang quality criteria accepted by the market; while processor information in the form of porang processed product standard criteria, export destination markets and export licensing documents through the port. Financial flow takes place from consumers to suppliers, there is an increase in the margin of financial value from the results of processing innovations.

Based on the level of importance of the actors in the AHP hierarchical analysis, it can be seen that the elements in decision making on the main activities, supporting activities and stakeholder performance. In the main activity, actors with a superior level of importance were selected, namely PT Porang Rejeki Jaya, which is a provincial level processor, because the company has a division to foster MSMEs, namely porang warriors. This can show that the application of product maintenance before resale at PT Porang Rejeki Jaya has a very strong influence on value creation. In the supporting activities of PT New Star Konjac and PT Porang Rejeki Jaya were selected as leading stakeholders of porang commodities in East Java Province, due to the export segment that has been carried out to several Asian countries, with the main destination of China. This can show that the implementation of general management of the company has a very strong influence on value creation. While in performance activities, PT Porang Rejeki Jaya was chosen as the leading stakeholder of porang commodities in East Java Province, due to the grade of porang flour used by the company is safe as recommended by WHO. This can show that the application of product maintenance before resale at PT. Porang Rejeki Jaya has above-average performance.

REFERENCES

- Aldillah, R., & Gede Mahatma Yudha Bakti, I. (2023). Porang Commodity Development Strategy in Indonesia from A Producer and Consumer Perspective. In *Forum Penelitian Agro Ekonomi* (Vol. 41, Issue 1). www.scopus.com
- Calatayud, A., & Ketterer, J. A. (2016). *Integrated Value Chain Risk Management Institutions for Development Sector Capital Markets and Financial Institutions TECHNICAL NOTE N°*. <http://www.iadb.org>

- Porter, M. E. (1985). *The Competitive Advantage: Creating and Sustaining Superior Performance*. NY: Free Press
- Irianto, Heru and Widiyanti, Emy. (2013). Value Chain Analysis And Marketing Efficiency Agribusiness Of Ear Mushroom In Karanganyar Regency. *Jurnal SEPA*: 9 (2): 260 - 272
- Kaplinsky, R., Morris, M., Barrientos, S., Smith, J., & Barnes, J. (2000). *A HANDBOOK FOR VALUE CHAIN RESEARCH Prepared for the IDRC by An Important Health Warning or A Guide for Using this Handbook*.
- Ngangi, G. R., & Tumewu, F. (2018). A QUALITATIVE STUDY OF VALUE CHAIN ANALYSIS MODEL IN UD. FILADELFIA. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, 6(4).
- Saaty, T. L. (2008). Decision Making With The Analytic Hierarchy Process. In *Int. J. Services Sciences* (Vol. 1, Issue 1).
- Sukayana, I. M., et al (2013). Value Chain of Granola Potato Commodity in Candikuning Village, Baturiti District, Tabanan Regency. *Agribusiness and Agritourism*, 2(3), 99–108. <http://ojs.unud.ac.id/index.php/JAA99>
- Tramarico, C. L., Salomon, V. A. P., & Marins, F. A. S. (2015). Analytic hierarchy process and supply chain management: A bibliometric study. *Procedia Computer Science*, 55, 441–450.
- Wijaya, M. (2019). Value Chain Analysis in Improving Company Performance and Competitive Advantage. *Media Informatics*, 18(3), 122–128.
- Zamora, E. A. (2016). Value chain analysis: A brief review. *Asian Journal of Innovation and Policy*, 5(2), 116–128.