Partnership Pattern of Desiccated Coconut Value Chain in North Sulawesi

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Abstract. Partnerships in the value chain are critical to assisting businesses, increasing partner group resources, and expanding business scale to increase income and prosperity. The issue is that North Sulawesi's coconut farmers have low bargaining positions and shared knowledge of market networks, making it easier for farmers to develop their farming activities, so cooperation or cooperation is required. This study aims to determine (1) the implementation of partnerships between the desiccated coconut industry and coconut farmers and (2) the pattern of partnerships between coconut farmers and the desiccated coconut industry. The stages of the research are as follows: (1) determining the location and research respondents, namely farmers and the desiccated coconut industry; and collecting data (leaders and managers); (2) developing and testing research instruments, (3) data collection through simple random sampling methods (farmers), purposive sampling (company leaders and managers), and expert surveys; (4) data tabulation, (5) data analysis, namely AHP analysis. According to the study, the current partnership pattern between coconut farmers and desiccated coconut companies is KOA (Agribusiness Operational Cooperation). As a result, experts propose that a plasmid nucleus pattern is the ideal partnership pattern for coconut farmers and desiccated coconut companies in North Sulawesi.

1 Introduction

The primary concerns of agricultural economists and policymakers in globalization have been poverty reduction, increased farmer income and welfare, equity improvement, and sustainable development, particularly in the global food value chain. [1, 2]. While globalization represents benefits, it causes challenges for desiccated coconut companies and farmers in North Sulawesi. It provides opportunities for the desiccated coconut industry in other countries, but competition for raw materials, particularly coconut, is a barrier. Industry increases competition for dried coconut commodities in terms of quantity and price. Coconuts were rare in North Sulawesi due to competition for raw materials. Raw material prices...
increased as a result. Increased raw material prices and a low selling price for desiccated coconut will threaten the industry. The biggest challenge for the desiccated Coconut Industry, on the other hand, is to transform it into a fully commercial industry that is resilient, efficient, and consistent. It could define as an evaluation to improve industrial performance. Farmers, such as industry, experienced the effects of globalization. Coconut farmers are the primary producers who play an essential role in ensuring a steady supply of raw materials for desiccated coconut companies. As a result, farmers must be able to improve product quality and product development to meet the target market's needs. They must be able to produce high-quality raw materials consistently. [8-11]. Handling produce and improving production quality will add value and affect revenue margins and incentives, particularly for farmers, traders, and the processed industry. Furthermore, according to conditions of income growth, globalization, health concerns, lower trade barriers, and technological development, food consumption markets are increasingly leaning toward a high-value product, food diversity, quality and safety standards, stable supply, and sustainable certifications.

Small-scale farming remains the primary production method for coconut farmers in North Sulawesi. Small-scale producers are particularly disadvantaged because they have limited capital to invest, continue to use traditional techniques, rely on family labor, and have limited contact with international markets due to limited land tenure, limited capital, a low bargaining position, and a lack of knowledge of market networks. [12]. As a result, the government is attempting to assist coconut farmers in North Sulawesi by creating factory regulations to protect those facing problems expanding their farming operations.

Partnership between farmers and industry is one of the policies implemented. It can give farmers financial and non-financial incentives to grow [13]. Partnership in the value chain refers to long-term relationships between actors who produce, transfer, process, and market goods or services from farmers to consumers, focusing on farmers [3, 4]. Partnerships in the value chain have become critical in globalization [5, 6]. Individual perception and performance improve due to the structure of their partnership [7]. As a result, cooperation or a partnership between farmers and industry expecting to be required [14]. The partnership will assist farmers in connecting to output markets and will frequently provide inputs, credit, or agricultural extension to help farmers grow their farming businesses and increase their income [15, 16, 17]. It expects to assist farmers in expanding their farming businesses and increasing their income. To anticipate various farming challenges, it will aim to equip farmers with the instruments they need to identify various farming challenges. This study aims to determine the implementation and patterns of partnerships between coconut farmers and the desiccated coconut industry in North Sulawesi.

2 Material and method

2.1 Research location
This research is conducted in North Sulawesi Province in four desiccated coconut industries and farmers. Purposive sampling is used to choose the companies, considering that these companies have been in production for a long time, are actively carrying out export activities, and locates in North Minahasa Regency and South Minahasa Regency.

2.2 Sample design and data collection
A total of 120 coconut farmers, four firm managers, academics, export experts, and experts were interviewed for this study. Several types of information were used in this study. Data and samples can be collected through expert surveys, snowball sampling, purposive sampling, and random sampling. Primary data was collected through (1) observation and interviews. In-field observations are made of research-relevant situations, Following the
interview guidelines, (2) structured and in-depth interviews were conducted with important parties in the research to collect the data required. Each participant in the study, including farmers, traders, manufacturers, and experts, was given a specific questionnaire based on the study framework. In order to learn more about the partnership between companies and coconut farmers, questionnaires were provided.

2.3 Data analysis
The collected data were tabulated and descriptively analyzed. To analyze and evaluate the partnership relationship used, AHP analyzed based on Saaty (2008). The internal variables analyzed in AHP are:

2.3.1 Partnership key factors

a. Management is the process of planning, organizing, coordinating, and controlling resources in order to achieve goals effectively and efficiently.
b. Capital refers to an organization's company resources used in business activities
c. Accessibility is the level of ease that an organization/company can achieve to something, such as objects, services, and places
d. "Mastery of technology" describes how businesses or individuals comprehend and are proficient with newly developed technology.

2.3.2 Partnership purpose

a. Market is a set of circumstances and time constraints that allows the company to take action in achieving the company's goals
b. Product Continuity refers to the availability of products in a continuing process.
c. Business Development is every effort to improve the implementation of work that requires foresight, motivation, and creativity.
d. Business Continuity refers to how Management manages a business from both financial and non-financial factors in order for the business to survive
e. Business Efficiency is a measure of success that evaluates the number of resources/costs required to achieve the outcomes of business activities.

Fig. 1. Analytical Hierarchy Process Diagram

![Analytical Hierarchy Process Diagram](https://doi.org/10.1051/e3sconf/202344402021)
### 3 Results and Discussions

A partnership is a business strategy implemented for a specific period between two or more parties to provide mutual benefits based on mutual need and support [18]. Partnerships emerge to carry out joint actions for economic functions such as production, processing, and marketing, as well as non-profit functions such as capacity building, education, and advocacy. This partnership has the potential not only to provide farmers with financing but also to enhance their position in marketing, rural livelihood activities, and capacity building for small farmers, particularly those in developing countries. The primary function of partnerships in the establishment of distribution chains is to accelerate the marketing process by minimizing the number of intermediaries involved, particularly those traders who provide minimal profit margins [19]. According to [20] research, the establishment of collaborative partnerships in the field of natural resource management has the potential to enhance various dimensions of sustainability, particularly in social areas. The objective of establishing a partnership is consistently anticipated to produce mutual benefits for all parties involved. However, the execution of partnership initiatives continues to fall short of what is expected.

Agribusiness partnership is a collaboration based on shared needs, collaborative strengthening, and mutual benefit between farmers and small, medium, and large companies, accompanied by company development and training. The agribusiness partnership aims to increase: 1) the income of small businesses and the community, 2) the profits of partnership actors, 3) equity, community, and business empowerment, 4) accessibility to national and regional economic growth, and 5) support for regional and regional economic growth.

#### 3.1 The partnership between desiccated coconut industries and coconut farmers

The collaboration between the desiccated coconut company and the coconut farmers has existed since the company's inception (Figure 2). The most important aspect of the established partnership is trust and obedience to have a mutually synergistic relationship, namely mutual need, mutual benefit, and mutual strengthening.

A partnership between coconut farmers and a producer of desiccated coconut is forming, and several agreements have to be reached. It is due to the two parties' shared perception of anything simple, easy to understand, and simple to implement. As a result, in practice, all rules are informal and communicated verbally to partners, and signed contracts cover only payment systems.
Coconut farmers in this partnership must provide coconuts that meet the company's quality and standards. The coconut fruit has been separated and cleaned from the coconut fiber; it is not rotten or too old, and its weight is 0.3–1 kg. Furthermore, the company needs to assist coconut farmers from planting to harvest. Farmers provide their land, labor, capital, and production facilities without the company's interference.

The company must buy crops from farmers at a set price, ranging from IDR15,000/kg to IDR35,000/kg. It is consistent with the concept of mutual agreement rather than agreement. This fixed price is higher than the market price and differs from the price set for non-partnered farmers. Setting this price is to ensure that farmers supply quality and consistent coconuts. The problem is that the price varies according to the availability of raw materials. Farmers who partner with the company receive an IDR—500 bonus per fruit. Farmers who supply large quantities of coconuts can take advantage of price guarantees and transportation provided by the company.

The existing partnership has both advantages and disadvantages. In general, farmers have disadvantages, including decreased flexibility, the possibility of late payment, unequal bargaining power offered, a decrease in actual prices, the loss of premiums for unsuitable technology and factory insufficiency, quality specification, monopoly dominance, debt, and limited and excessive vulnerability [21,22,16]. Farmers benefit from increased yields, prices, profits, and income, improved product quality, expanded production and business, development of farm technologies and management practices, improved access to information sources and markets, and connecting small farmers to global and advanced supply chains [23–26].

The result showed that farmers benefit from market and price certainty, relatively stable revenue and income, increased ability to rejuvenate no longer productive coconut plants, and business scale development; however, farmers face risks if crop failure occurs due to pest attack or natural disaster, and the coconuts do not meet the company's specifications. The risks accepted by desiccated coconut companies are the criteria for out-of-demand coconuts and unsustainable raw materials.

The partnership can assist companies in achieving political acceptance, overcoming land constraints, obtaining producer reliability, sharing agricultural risks, ensuring quality and quantity consistency, promoting agricultural inputs, lowering input and labor costs, increasing access to credit and financial incentives, and expanding their business [22, 16]. It implies a guaranteed supply of coconuts in both quality and quantity, the continuity of the company's raw materials, relatively stable company revenue and income, and the expansion of business scale for desiccated coconut companies. Companies can also expand their business activities by increasing their sales volume and diversifying their coconut-based products.

### 3.2 Evaluation of partnership pattern

The purpose of evaluating the form of partnership is to determine the most suitable type of partnership between the two parties so that with the correct form of partnership, both parties can enhance the form of partnership that establishes and compare the implementation of the current partnership pattern with the ideal partnership pattern to be implemented following the partnership's objectives, making the partnership's implementation more effective and efficient. The proposed partnership's form determines by influencing factors, partnership actors, and partnership goals.

The KOA (Agribusiness Operational Cooperation) partnership pattern emerged from identifying the partnership pattern between the desiccated coconut industry and farmers (Table 1). The company chose partner farmers based on the quantity and quality of their coconut production and farmers who commit to producing high quality, quantity, and.
Table 1. Patterns of Partnership Adjustment

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Plasma Core</th>
<th>Sub-Contract</th>
<th>General Trade</th>
<th>Agency</th>
<th>KOA</th>
<th>Partnership Company and Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers meet the needs of the company partner</td>
<td>√</td>
<td>√</td>
<td>√</td>
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<tr>
<td>Partner Farmers Provide Production Facilities</td>
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<tr>
<td>Partner companies provide production facilities</td>
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<td>Partner farmer land</td>
<td>√</td>
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<td>Partner companies land</td>
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<td>Capital from partner farmer</td>
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<td>Capital from partner companies</td>
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<td>Partner farmers fees</td>
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<td>Partner companies’ fees</td>
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<tr>
<td>Monitoring of cultivation by partner companies</td>
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<td>√</td>
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<tr>
<td>Counseling and technical assistance from partner company</td>
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<td>Transportation from partner companies</td>
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<td>Partner companies accommodate and process partner farmers' products</td>
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<td>Partner companies Market the products of partner farmers</td>
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<tr>
<td>Partner farmers market the products of partner companies</td>
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<tr>
<td>Profit sharing agreement</td>
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<td>Risk sharing agreement</td>
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<tr>
<td>Joint contract covers volumes, price, quality, capital, productivity</td>
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consistency. Whereas the partner group, which consists of coconut farmers, provides land, labor, inputs, and capital, the company provides capital or the means to cultivate a commodity [27]. In this case, however, the company does not provide capital or facilities but guarantees farmers that it will buy their coconuts. Compared to [28], the KOA partnership pattern involved mutual companies and partners, with the company and partner farmers receiving capital loans for potato planting and market certainty. The company then purchases the...
partner's harvest. KOA pattern in [29] is partner farmers contribute to the provision of energy, labor, and land for their farming activities, while the foundation assumes responsibility for supplying farming capital through the provision of production facilities. Additionally, the foundation offers counseling and assistance to partner farmers, purchases their production products, and plays an important role in ensuring the marketing of the farmers' output.

3.3 Rights and obligations in partnership

Partnership connects coconut farmers and partner companies. No written contract regulates yield sharing; all discussions concerning coconut quality, quantity, and continuity are conducted verbally. Because each party fulfills its rights and obligations and looks toward each other, the established partnership will continue. Companies and farmers collaborate in the implementation of a cooperative mechanism for coconut farming under the terms outlined in the cooperation contract agreement, which outlines their respective rights and obligations. Both parties are required to adhere to the mutually established rules and regulations in order to prevent adding to each other and to establish trust and commitment in the existing business partnership [28-30]. This can be observed during the period of collaboration between farmers and industry. The allocation of responsibilities between companies and partner farmers is a key aspect of ensuring profitability. In this arrangement, the company benefits from obtaining the required raw materials, while the partner farmers have the assurance of a guaranteed purchase from the company.

<table>
<thead>
<tr>
<th>Partnership</th>
<th>Rights</th>
<th>Obligations</th>
</tr>
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</table>
| Coconut Farmer’s | ✔️ | ✔️
| ✔️ Obtain the selling price accordance to market price
| ✔️ Receive payment on time
| ✔️ Sell the product to companies
| ✔️ Provide products accordance with terms and quality that have been agreed |
| Company’s | ✔️ | ✔️
| ✔️ Receive products that are accordance with quality, quantity and continuity
| ✔️ Buy the product’s from partner farmers
| ✔️ Pay partner farmers on time
| ✔️ Buying partners farmers product according to the price market |

The farmer-company partnership's success shows both parties' adherence to the agreed-upon rights and obligations. Farmers and companies in each actor have the following rights and obligations: (1) partner farmers' rights are to obtain market guarantees at a set price and to receive sales proceeds on time and not after the maturity date; (2) the company's right is to obtain a guaranteed supply of coconut in terms of quality, quantity, and continuity; and (3) partner farmers' obligations are to carry out coconut cultivation correctly, harvest on time, and delinquent payments.

3.4 Partnership pattern design

The Analytical Hierarchy Process (AHP) concept (Figure 1) is used to select the proposed partnership pattern [31-35]. Figure 2 depicts the findings of the appropriate partnership model in the collaboration of coconut farmers and desicated coconut companies. The level 2 analysis results show that market access is essential. The market, which connects farmers' and businesses' activities through trade, is one of the driving factors for farmer activity and interaction with the surrounding environment. Securing market access for agricultural products produced by small-scale farmers has been identified as one of the most critical
strategies for rural development and poverty alleviation worldwide [36]. Market access is critical in partnerships because the goal is to raise priorities, share knowledge among local actors and market access specialists, and provide information on significant market access barriers [37]. Farmers benefit from market access by learning about market opportunities or new technologies, purchasing inputs, and gaining access to markets that guarantee fair prices. Farmers may also experience price fluctuations when the market is accessible. The third level of processing examines how interested the partnership actors are in the key factors influencing partnership formation.

![Processing flowchart](image)

**Fig. 3. Determine the Suitable Pattern of Partnership**

As shown in the Figure, farmers and industry are the most interested parties in this partnership (weight 04262), particularly regarding market accessibility. Farmers, as primary producers, must have market access to obtain information about prices and market needs, maximize agricultural product distribution from factories to consumer centers by developing an efficient food logistics system, reduce food chains, increase innovation and technology, and upgrade agricultural products. Meanwhile, businesses must learn more about market expansion and access. Designing a value proposition, identifying specific target markets, understanding distribution channels to expand markets, understanding marketing management through 4p (product, price, place, and promotion), managing effective communication with consumers, managing consumer feedback to innovate, and being able to use digital marketing optimally are all ways to improve market access.

### 3.5 Level four analysis focuses on the partnership's objectives for each partnership actor

With a weight of 0.4070, the processing results show that the goal of product continuity is the highest priority. The most crucial goal of this processing is product continuity, or how
coconut farmers can continue to produce coconuts as a source of income through ongoing partnerships with partner companies as price and market guarantees. According to fifth-level analysis results, the Plasma Core Pattern is the most suitable partnership pattern. Plasma is the coconut farmers, and the core is the desiccated coconut company. The plasma core pattern replaces the current KOA pattern because coconut farmers face numerous challenges, including crop monitoring, counseling and technical assistance, assistance, innovation, and technology. Furthermore, this constraint raises the following issues:

a. Fewer coconuts are produced because many coconut trees are old and no longer productive.
b. Many farmers still use traditional pest and disease control methods.
c. Harvesting techniques still depend on human labor, resulting in harvesting limitations due to a scarcity of coconut climbers.

It is undoubtedly related to product continuity. Product continuity is the main objective of establishing partnerships between farmers and desiccated coconut companies. If product continuity is not maintained, the company will face delays in producing and marketing desiccated coconut. As a result, farmer income has decreased because they cannot meet the company's demands; if this problem persists, the partnership may terminate.

4 Conclusion

Internal and external factors influence partnerships between desiccated coconut companies and farmers. Internal factors included compliance by partner farmers with contractual agreements, consistency of services provided by farmers to desiccated coconut companies, and consistency of product quantity and quality. Infrastructure and farm implementation availability, as well as land access, are examples of external factors. KOA (Agribusiness Operational Cooperation) is a collaboration model between coconut farmers and desiccated coconut companies.

Farmers supply everything; the company only accommodates and purchases products at market prices. As a result, the experts recommend an ideal partnership pattern. Out of the number of partnership models recommended in the existing regulations, experts have suggested a partnership model between farmers and desiccated companies, namely Plasma-Core. This partnership is expected to have a win-win solution, resource sharing, and risk sharing, based on the principles of mutual needs, mutual strengthening, and mutual benefit, in order to create a system of partnerships that serves and improves the welfare of society and partnership members (via guidance and empowerment).

References


