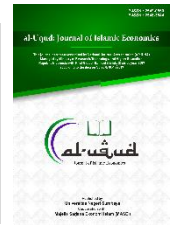




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Empowering the food sector: A cooperative-based business partnership model at Al-Ittifaq Islamic Boarding School, Bandung

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Abstract

Farmer institutions have been unable to improve farmer production and welfare. Modern cooperatives are increasingly recognized for their good impact on farmers' well-being. This study seeks to identify critical success criteria for modern cooperatives, examine the performance of the Al Ittifaq Islamic Boarding School Cooperative (Kopontren), and investigate the responsibilities of stakeholders in their partnership value chain. This study also looks at the influence of these partnerships on farmer well-being and proposes an inclusive, sustainable food sector partnership model based on cooperatives. Data were acquired using qualitative descriptive methods, including narrative literature reviews, benchmarking, and in-depth interviews. The value chain analysis identified four major pillars of modern cooperatives: governance, economy, social, and environmental. Al Ittifaq Kopontren received a checklist rating of 0.66, indicating that it is good. Farmer incomes increased by 6-55% in 2023 compared to 2022, demonstrating the effectiveness of cooperative business partnerships in raising revenue. Future success necessitates the implementation of an inclusive, long-term partnership model involving strong institutions, research bodies, sustainable standards, and export-oriented and downstream product development.

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Introduction

In Indonesia, the agricultural sector is critical for increasing state revenue and creating huge numbers of jobs (Summase et al., 2022; Widyawati, 2017). In addition, of the 65 million MSMEs, 27.6 million are in the food sector (Central Statistics Agency, 2019). The agricultural sector has become the mainstay of Indonesia's economy because, since the beginning of the Covid-19 pandemic, this sector has always grown positively. In addition, increasing the productivity of smallholders is very effective in cutting poverty, hunger, and raising rural living standards, as demonstrated in other Asian countries during the Green Revolution (Hazell et al., 2010).

However, in Indonesia, the quality level of farmers' welfare is not high. For example, the farmer exchange rate (NTP) in food crops, horticulture, livestock, and fisheries sectors is stagnant and only slightly above the minimum limit of 100% (Statistics Agency, 2023). In the fisheries sector, 2022 data shows that 69.34 percent of extreme poverty in 212 districts/cities is in coastal areas (Ministry of State Secretariat, 2021). On the other hand, the competitiveness of agriculture products is still low and limited (Gadjah Mada University, 2021), as seen from the high imports of food such as soybeans, sugar, industrial salt, corn, and beef (Central Statistics Agency, 2023). The supply chain of agricultural commodities so far generally goes through 5-7 supply chains to reach consumers (Ministry of Agriculture, 2019; KNTI, 2022).

Farmer institutions have not been able to increase the productivity and welfare of farmers. This can be seen from the relatively low contribution of agricultural cooperatives of only Rp13.3 trillion or 3.8% of the total economic contribution of cooperatives at Rp351.1 trillion in 2020, based on the ODS of the Ministry of Cooperatives and SMEs in 2020. Institutional innovation is believed to play an important role in helping farmers overcome market failures (Hazell et al., 2010). The weaknesses of farmers so far can be caused by a systematic structural process, so these changes cannot be imposed on the farmer community itself, (Yustika, 2020). According to Herab (Herab et al., 2023), the issue of sustainability of agricultural cooperatives in developing businesses is increasingly prominent because it is considered an effective strategy to support financial capital and overcome sustainability problems collectively.

Pesantren (Islamic boarding schools), one of the Islamic-based religious institutions, continues to adapt to the changing times. Today, pesantren not only focuses on the development of religious knowledge but also effectively manages business units that significantly enhance their capacity and sustainability (Oktavia & Haryanto, 2018). One of them, namely, Al Ittifaq Islamic Boarding School cooperative (Kopontren Al Ittifaq) in Bandung, which is engaged in the horticulture sector, is one of the successful business models and has the best model according to the (Ministry of Cooperatives and SMEs, 2022). Ministry of Cooperatives and SMEs (2022). Several studies have been conducted at the Al Ittifaq Cooperative, but they are comprehensive and portray an in-depth picture of how the Al Ittifaq Cooperative can survive and develop (Ruhenda 2022; Silvana & Lubis 2021; Tarmizi (2017). Verhofstadt & Maertens (2015) mentioned that increasing productivity, profitability, and sustainability of smallholder agriculture is the main way to escape rural poverty in developing countries through inclusive and effective institutions (cooperatives).

The purpose of this study is to examine the key factors of the cooperative success; through analysis of the performance of the Al Ittifaq Kopontren and identification of the roles of the parties in the partnership value chain; the impact of partnerships on farmers' welfare; and ultimately design an inclusive and sustainable partnership model in the cooperative-based food sector. Through understanding business partnerships and models built by the cooperative, this study is expected to provide input, strengthen, detect early, and find the right formula for future farmer empowerment programs.

Literature Review

Institutional Innovation and Modern Cooperatives

Institutional innovation is important to support economic and social sustainability in the agricultural sector. According to (Acemoglu et al., 2005), economic institutions have a great influence on economic performance and resource distribution. Hazell et al. (2010) emphasized that institutional innovation can help farmers overcome market failures. (Yustika 2020) shows that farmers' weaknesses often stem from systematic structural processes, so change cannot only be imposed by the farmer community itself.

Therefore, modern cooperatives play a crucial role in improving farmers' welfare and agricultural sustainability. According to The International Cooperative Alliance (2015), a significant determinant of modern cooperative indicators, it is critical to ensure that cooperatives operate efficiently, increase welfare, and are sustainable. Kalogiannidis (2020) shows that modernizing cooperatives can support sustainable development. Fischer & Qaim (2012) highlight the importance of cooperatives to increase smallholder market participation. Senirattanaprayul & Gan (2021) found that agricultural cooperatives help reduce poverty in Thailand. While (Xuan et al., 2022) emphasize the role of agricultural cooperatives in Vietnam in improving the economy. Modern food cooperatives able to modernize cooperatives in the food sector by improving their capacity, institutional, and business capabilities (Ministry of Cooperatives and SMEs, 2022).

Supply Chain Partnerships

Supply chain partnerships are needed to create economic efficiency in the agricultural sector. Government Regulation No. 7/2021 concerning the Facilitation, Protection, and Empowerment of Cooperatives and MSMEs article 106 states that supply chain partnerships are collaborations between micro, small, and large businesses that can increase economic value efficiency through various processes from production, to packaging, to consumers. Rezaei et al., (2018) found that high-tech SME supply chain partnerships are more effective, while Bolwig et al., (2010) showed the positive impact of global market integration on poverty, gender, and the environment. On the other hand, finding suitable partners becomes a challenge due to the ideological differences between agricultural cooperatives and other actors (Menden et al., 2019). Choosing the right partner to implement a partnership is related to several factors, such as the purpose of the partnership, the nature of the activity, and the typology of the partnership (Byiers et al., 2015). Warsanga & Evans (2018) argue that building more contracts and participating in value chains specifically addressing wheat production has a positive impact.

Farmer Welfare

Improving the welfare of farmers is one of the main goals in the establishment of cooperatives and supply chain partnerships. Warsanga & Evans (2018) found that farmers' participation in cooperatives can increase income in Tanzania. According to Soekartawi et al., (1985), the measurement of the performance of farming includes net income and return on capital. Nadjib & Yustika (2014) added that the increase in welfare is reflected in the increase in income, purchasing power, social relations, and capital accumulation.

Inclusive and Sustainable Partnership

Inclusive and sustainable partnerships are needed to ensure the sustainability of smallholder farming businesses. Herab et al., (2023) demonstrate the importance of sustainability in agricultural cooperatives to address the problem collectively. Van Hille et al., (2020) stated that strong partnerships require the effective collaboration of various stakeholders as a prerequisite for sustainability. There is an increasing requirement for organisations to proactively address sustainability issues (Joyce & Paquin, 2016). Measures that enhance the sustainability of small-

scale agricultural practices are crucial for preserving product availability and diversity, earning revenue, and reducing environmental impact (Wohlenberg et al., 2022). Meanwhile, Verhofstadt & Maertens, (2015) highlight the increased productivity, profitability, and sustainability through inclusive cooperative institutions.

Methodology

Research on the Cooperative-based Food Sector Business Partnership Model was conducted through a case study at Kopontren Al Ittifaq, Bandung. The choice of the research location was deliberate, namely one of the partnership locations being run by the Ministry of Cooperatives and SMEs that was considered successful. This research took place from January 2023 to July 2024. The method used is qualitative descriptive. This study uses two types of data, namely primary data, and secondary data. Primary data is obtained through conducting direct observations in the field and direct interviews with parties involved in the business value chain. Secondary data comes from annual budget reports (RAT), financial statements of each cooperative, and other sources.

The method to determine farmer samples was carried out to Kopontren Al Ittifaq farmers who participated in the incubation program, Revolving Fund Management Institution (LPDB-KUKM) in 2022. The sample of this study is thirty or 67 percents of the total farmers who participated in the incubation. The analysis tool used is the value chain analysis. Value chain analysis is carried out for value chain mapping, tracking product flows, identification of actors and parties contributing to production, services, and institutional support, as well as obstacles that prevent progress and provide a framework for action in the value chain. In conducting narrative literature studies, an electronic search of international literature. The study refers to regulations that existed in official documents of the Indonesia government, foreign entities such as the International Cooperative Alliance/ICA, research results, and books to formulate indicators of cooperative success.

The next step is the agricultural cooperatives benchmarking as included in the world's 300 large cooperatives members of ICA. At least two agricultural cooperatives with the most complete data can be used as a case study. Matching modern cooperative indicators with indicators in Kopontren Al Ittifaq through analysis checklist by grouping into four categories (He et al., 2023). Analysis checklist was used to ensure that all formulas were checked and evaluated. The assessment of Weight figure is modified from the Developing Village Index (Ministry of Agriculture, 2016). In this study, a value of 1 means that it already exists and a value of 0 means it does not exist. The assessment results can be categorized into 4 categories "poor" (<0.5), "adequate" (0.5 to <0.6), "good" (0.6 to <0.7), and "very good" (from 0.7 and above). To measure the impact of farmers' welfare, a comparison was carried out before and after the LPDB-KUKM partner incubation program, especially in terms of income.

Result and Discussion

Identifying Key Factors for the Success of Modern Cooperatives

Indicators of cooperative-based business partnerships (modern cooperatives) are necessary to ensure that agricultural businesses can continue and succeed. Several indicators were scientifically explored from various sources and field facts. Then, agricultural cooperative benchmarking was carried out, using the transformation experience of the Netherlands dairy cooperative that has lasted for hundreds of years, the FrieslandCampina business model, the National Federation of Agricultural Cooperative Associations (Zen-Noh) business model, and the success of the Gihogwe rice producer cooperative, Codarika. Zen-Noh and FrieslandCampina are agricultural cooperatives that are in the top three hundred in the world, ranked 5th and 44th respectively (The International Cooperative Alliance, 2021). If only

measured from agricultural cooperatives, Zen-Noh is ranked 1st and FrieslandCampina is ranked 6th in the world.

Some findings from literature reviews mentioned the need to meet certain conditions for cooperatives to be successful and sustainable. [Bijman \(2018\)](#) stated that cooperatives have been successfully grouped into four categories, namely economic, social, planning & management, and environmental. [Marziana bt Madah Marzuki1 \(2015\)](#) also mentioned that four pillars must be fulfilled, namely environmental, social, economic, as well as governance and integrity. Furthermore, the sustainability of cooperatives depends on contracts for farmers ([Pham et al., 2021](#)). [Cook \(2018\)](#) views that cooperatives must be able to minimize the cost of ownership and keep them well below the market contract. The longevity and survival of these organizations are related to the ability to continuously adapt to industry crises and challenges ([Giagnocavo et al., 2018](#)). Meanwhile, [Tortia \(2018\)](#) requires undivided ownership of assets. [Karakas \(2019\)](#), mentioned that the two-tier system is the most widely used organizational structure in large cooperatives around the world and is used in around 80% of EU Member States.

Benchmarking was carried out in the transformation of the Dutch milk cooperative, which can be described in two phases: before the cooperative and after the cooperative ([Bijman, 2018](#)). The Netherlands implements quality certification for butter, cream cheese, and non-cream cheese so that Dutch exports are maintained. The Netherlands government strongly supports agricultural modernization. Several policies were issued such as the Milk Crisis Law, the Agricultural Crisis Law, Quality Regulations, and incentives for large factories, and the Standardization Law, which requires all milk to be sold with a fat content of 2.5%. In addition to bureaucratic policies, rural infrastructure is also supported, such as the provision of wider land access, innovation in the mechanization of agricultural activities, cultivation and harvesting using tractors, and the construction of large-scale roads that allow milk transportation to cover longer distances. In addition to requiring more modern and expensive technology to produce on a larger scale, this quality standard makes small factories cease operations because they are unable to ensure their quality and made cooperatives join other cooperatives (merger). Another strategy is to collaborate in a federative organization or joint venture. The cooperative established a milk bank which is currently part of Rabobank. As technology advances, mergers between cooperatives continue, even at a faster pace.

The rapid growth of Netherlands dairy products abruptly ended when the EU introduced a milk quota system. New strategies were starting to be implemented through investing in innovation and exploring international business expansion. Investments were shifting from efficiency improvement to research, product development, and marketing. The new market situation led to a strategic reorientation among dairy cooperatives in the Netherlands as well as in other European countries. Cooperatives began to look for merger partners outside national borders. Cooperatives also restructure their internal governance by transferring decision-making rights from members to managers. Managers are encouraged to put more emphasis on developing new products and markets and have greater decision-making power compared to farmers. By 2000, the ongoing merger process had reduced the number of dairy cooperatives in the Netherlands to five. In 2008, Friesland Foods and Campina, the largest dairy cooperative, merged into one new cooperative, under the name FrieslandCampina. In 2015, the combined market share of the five Netherlands dairy cooperatives increased to 86% (Figures 1 and 2).

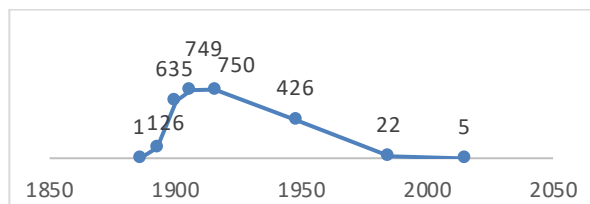


Figure 1 Number of Netherlands dairy cooperatives 1886-2015

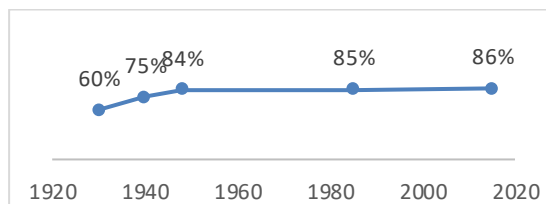


Figure 2 Netherlands dairy cooperative market share 1930-2015

FrieslandCampina is one of the largest dairy cooperatives operating in twenty-nine countries with products sold to more than 100 countries (Frieslandcampina, 2023). Their businesses are leveraging the strength of global supply chains, creating downstream products with sustainability as a top priority through the implementation of ISO 26000 and ESG. This is shown by the presence of a Chief Sustainability Officer on the Executive Board. The nutritional quality is guaranteed by nutritionists and health professionals across multiple nations. This cooperative prioritizes product standards and certifications by national and international regulations while reducing work accidents with a safety-first culture. Operational sustainability prioritizes effectively protecting computer systems and data and investment against digital threats. In innovation, FrieslandCampina complies with all Netherlands environmental regulations, with a focus on reducing greenhouse gases.

The subsequent step is to comprehend the business strategy employed by the National Federation of Agricultural Cooperative Associations (Zen-Noh). Zen-Noh originated from the amalgamation of the national federation of Agricultural Cooperative Marketing Divisions (Zenhanren) and the national federation of Agricultural Cooperative Purchasing Divisions (Zenkoren). The number of cooperative members is 863 cooperatives (including 157 secondary cooperatives). The group company consists of 140 companies including subsidiaries, affiliated companies, and overseas companies (Zen-Noh, 2022). Zen-Noh believes that connecting producers and researchers/research is an important role and will continue to do so to help increase producer revenue. Then, they also promote Good Agricultural Practices (GAP) by providing training and support to cooperative members to obtain GAP certification.

Zen-Noh focuses on expanding domestic and foreign markets, strengthening stable resources (fertilizers, animal feed, agrochemical active ingredients), and strategic partnerships, especially local communities, by increasing domestic production. Zen-Noh founded the site *e-commerce* alone. Zen-Noh also creates planting patterns based on user needs with market demand. Zen-Noh continues to strive to secure and prioritize its image as a leading brand for food products (product downstreaming), such as dried shiitake mushrooms, processed fruit products (jams, canned fruits), packaged rice, etc.

Zen-Noh continues to innovate to increase their productivity through technology adoption, such as integrating a Z-GIS cloud-based agricultural management system. One of which is the application of robots for milking and feeding cows. Other innovation programs include fostering the next generation of farmers, agricultural talent development programs, Wagyu Koshien (student-level competitions), dairy farming dream competitions, and training programs for new strawberry farmers. In every segment of the food value chain, there is a perspective of SDGs. Zen-Noh applies a proactive approach to social responsibility (CSR), ranging from food and agricultural education to sports and the environment.

Finally, the success of the Gihogwe Rice Producers Cooperative, Codarika, is an additional case to enrich the formulation of indicators for modern cooperatives. The rice farming project imitates the SMU ODA program for the period 2011-2016 (Moon & Lee, 2020). Swamp areas were converted into rice fields originally owned by the Rwandan government in which the ownership has been transferred. The Codarika Rice Producers Cooperative obtained

a legal entity from the government in 2012. Codarika received great support for the construction and maintenance of infrastructure such as irrigation systems, dam construction, cooperative offices, and rice storage and drying facilities during the five years of the program. Financing was gradually reduced to increase the independence of cooperatives and reduce dependence on aid institutions. The local government is actively cooperating in this project. In 2017, Codarika developed into a medium-scale cooperative with 1,054 members from only 65 people in the beginning, and 110 hectares of rice fields from the initial three hectares. The key to this success is the existence of clear rules, quick response, and continuous education for members. In addition, there was a provision of services such as microfinance and health insurance payments.

Modern Cooperative Indicators

Based on the exploration of the literature study and *benchmarking* above, modern success indicators consist of four pillars, namely Management (G), Economy (E), Social (S), and Environment (E) totaling 29 indicators (Table 1), of which there are 14 indicators in governance, 5 indicators in economic, 6 indicators in social, and 4 indicators in environment.

Analysis of the Al-Ittifaq Islamic Boarding School Cooperative (Kopontren Al Ittifaq) for the period 1993-2022

Based on the results of the interview, initially, the pesantren business was run by the foundation and then transformed into a cooperative. The number of members of the Al Ittifaq Kopontren continues to increase every year (Figure 3). The number of cooperative product varieties/types of vegetables also increased annually (Figure 4).

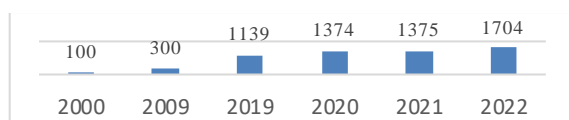


Figure 3 Number of Members of the Al-Ittifaq Kopontren 2000-2022

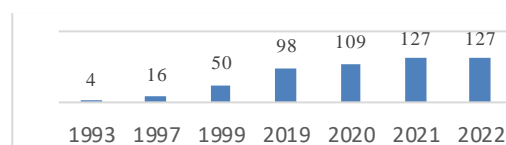


Figure 4 Number of product varieties of Kopontren Al-Ittifaq 1993-2022

The organizational structure of Kopontren Al Ittifaq is a one-level structure that directly manages business units. The total land in 2022 managed by Kopontren Al Ittifaq covers an area of 146.5 hectares, of which 14.5 hectares or 10 percents is owned. The performance of Kopontren Al Ittifaq is good, as seen in the increase in production capacity (tons/day), assets (billions), and turnover (billions). Meanwhile, the remaining business results (SHU) trend fluctuates (Figures 5, 6, 7, and 8). This is due to investment in buildings, namely the construction of warehouses, halls, offices, and greenhouses. These fixed assets do not produce any income in the short term.

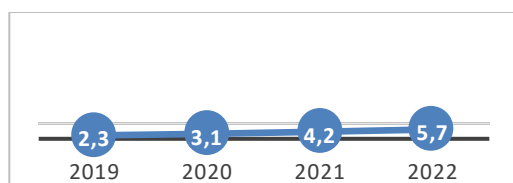


Figure 5 Total agribusiness production of Kopontren Al Ittifaq 2019-202

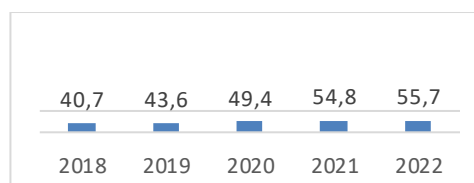


Figure 6 Total assets of Kopontren Al Ittifaq 2018-2022

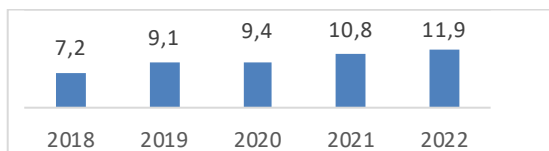


Figure 7 Total revenue of Kopontren Al Ittifaq 2018-2022

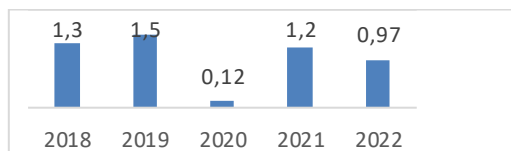


Figure 8 Remaining Business Results of Kopontren Al Ittifaq 2018-2022

Table 1 Modern Cooperative Indicators

| Pillar | Modern Cooperative Indicators |
|--|--|
| Governance | Effective and Democratic Member Participation and Control |
| | Existence of an integrated and planned business model/roadmap/business relationships/structured business value chain (cooperatives, suppliers, customers) |
| | Intensive, structured, and sustainable education and training for members |
| | Cooperative land ownership/undivided asset ownership |
| | Stable management of fertilizer, feed, and seed supply |
| | Crop pattern mapping |
| | Implementing a two-tiered system/professionalization management |
| | Merger of cooperatives (Holding) |
| | Establishment of research and development body |
| | Collaboration with various organizations, including partner companies, government institutions, NGOs, academics, research institutions, and organizations domestically and internationally |
| | Existence of market contracts (farmers, cooperatives, and offtakers) |
| | Adoption and innovation of technology |
| | Export-oriented products or exported products |
| Existence of downstream product development/product innovation | |
| Economic | Current Ratio: Current Assets/Liabilities |
| | Asset Turnover: Total or Sale of assets |
| | Increase in members' income. |
| | Financial reports comply with accounting standards and are audited by external parties. |
| Social | Cash and carry payment for agricultural produce to farmers (short-term) |
| | Ensuring a decent standard of living for those working in agriculture (standardized wages) |
| | Health and safety programs (including health and employment insurance) |
| | Insurance for farmers |
| | Strong local community involvement |
| | Use of local raw materials |
| Environmental | Youth development programs |
| | Considering sustainable development perspectives of SDGs in every segment of the food value chain, from production to sales. |
| | Prioritizing Environmental, Social, and Governance (ESG) goals and ISO 26000 declarations for CSR implementation. |
| | Promoting and providing technical advice for the widespread adoption of environmentally friendly materials. |
| | Reducing pesticide use and creating organic fertilizers. |

Kopontren Al Ittifaq's revenue consists of 4 business sectors, namely agribusiness sales, livestock, agro-tourism, and job training centers (BLK). However, since becoming a pilot cooperative, tourist visits to Kopontren Al Itifaq have increased the income of the agro-tourism sector from 0.7% in 2018 to 8.7% in 2022 (Table 2).

Table 2. Details of Kopontren Al Ittifaq's business income 2018-2022

| Total Turnover | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------------------------|--------|--------|--------|--------|--------|
| 1. Agribusiness Sales | 98,18% | 96,70% | 98,94% | 94,95% | 89,78% |
| 2. Farm | 0,54% | 0,71% | 0,73% | 4,71% | 1,40% |
| 3. Agro-tourism | 0,68% | 0,70% | 0,11% | 0,22% | 8,68% |
| 4. Job Training Center (BLK) | 0,59% | 1,89% | 0,22% | 0,12% | 0,13% |

From the agribusiness sales in 2022 of 89.78%, the large clients were Superindo (48%), traditional markets (22%), Yogya (19%), and a combination of AEON, Alif mart (Kopontren's store), Sarinah, foodcourts, Supermarket, Restaurant, and others by 12%. This means around 80% of Al Itifaq's market is aimed at modern markets spread across Bandung, Jakarta, Cirebon, Lampung, and Online Market. Initially, the entire management was directly under the cooperative. However, it has shifted into farmer groups to be more effective. The farmer group consists of 270 people who coordinate with other farmer members. Their annual social program is going well. Kopontren Al Ittifaq continues to build and expand cooperation with various parties, namely the government, the private sector, banks, and international NGOs. The potential of Kopontren Al Ittifaq pesantren partners continues to expand from 76 pesantren partners and is planning to have 91 pesantren partners in 2024.

Furthermore, the management of Kopontren Al Ittifaq realized the importance of continuous education and training, by sending several students abroad to participate in agro-industry training in several agricultural and plantation industries. Furthermore, the Alif Learning Center (ALEC) was established on September 11, 2021, to ensure that the training is well managed. Lastly, Kopontren Al Ittifaq pays attention to the environment with the development of organic fertilizers.

The transformation of Al Ittifaq's agricultural business model can be described into 3 periods (1993-2022), namely the business model before cooperatives (1993-1997), the business model after cooperatives (1997-2019), and the planned and integrated business model (food corporations) (2019-until now). First, the agricultural business model of the Al Ittifaq Islamic Boarding School before the cooperative in 1993-1997. Al Ittifaq Islamic Boarding School is one of the suppliers of crops to the Pasir Jambu (PJ) Village Unit Cooperative (KUD) which has collaborated with Hero (Figure 9). The payment of agricultural products to the Al Ittifaq Islamic Boarding School is carried out on a period basis. For example, payment from the Pasir Guabu KUD for 90 working days while from Hero to KUD PJ for 30 working days.

Second, the agricultural business model of the Al Ittifaq Islamic boarding school after the form of a Cooperative in 1997-2019. Al Ittifaq Islamic Boarding School became a cooperative in 1997 (Figure 10). After the closure of KUD PJ, the Al Ittifaq Cooperative officially collaborated with Hero. The cooperative learned many things from the cooperation with Hero, such as independently supplying goods with the Purchase Order (PO) and the application of 3K (quantity, quality, and continuity). Consumer targets were divided based on market needs, namely class A/B/C/D. Kopontren Al Ittifaq has its own process of packaging product. There was also an innovative green house with the support of Bank Indonesia and training from PUM Netherlands and JICA Japan. The management of vegetable and livestock waste was carried out to make compost, which was used again as organic fertilizer.

Third, the planned and integrated agricultural business model of Al Ittifaq Islamic boarding school (Food Corporatization) in the 2019-2022 period (Figure 12). Since 2019, the governance

of Kopontren Al Ittifaq has undergone significant changes, especially after obtaining a Revolving Fund Management Institution (LPDB) of IDR 18.3 billion with sharia principles. Their financial statements were audited by the Public Accounting Firm (KAP). The cooperative bought agricultural products from farmers in cash directly or up to a maximum of 7 days. With market contracts, farmers who had difficulties in getting access to capital can finally get it. Around 70% of farmers who participated in the 2022 incubation received financing from Bank Syariah Indonesia (BSI). Kopontren Al Ittifaq helps manage farmers' loans to banks as a deduction of their loans with no delays in payments to reduce farmers' confusion in managing their loans. The existence of the Alif Learning Center (ALEC) as a training institution. The digitalization of agriculture in supporting the halal value chain ecosystem by creating upstream technology applications (agricultural information systems/systems) which was carried out on a regular basis. Kopontren Al Ittifaq agricultural products have a BRCGS certificate from the United Kingdom.

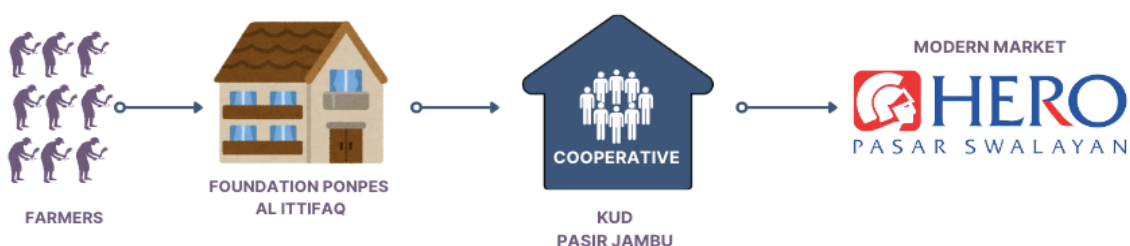


Figure 9 Business model before the cooperative (1993-1997)

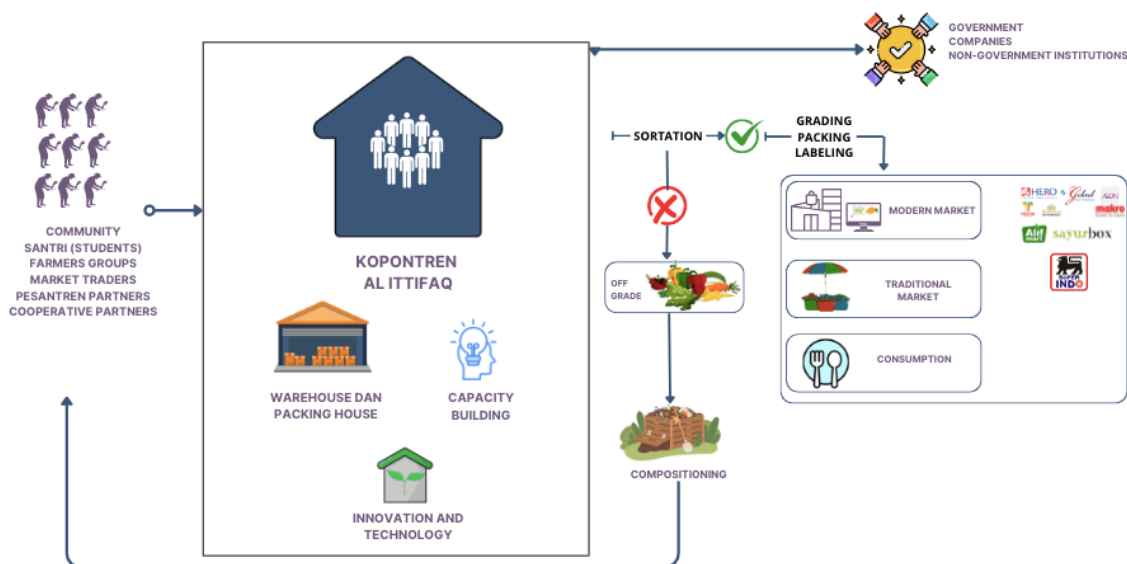


Figure 10 of the agricultural business model of Al Ittifaq Islamic boarding school after the form of a Cooperative in 1997-2019

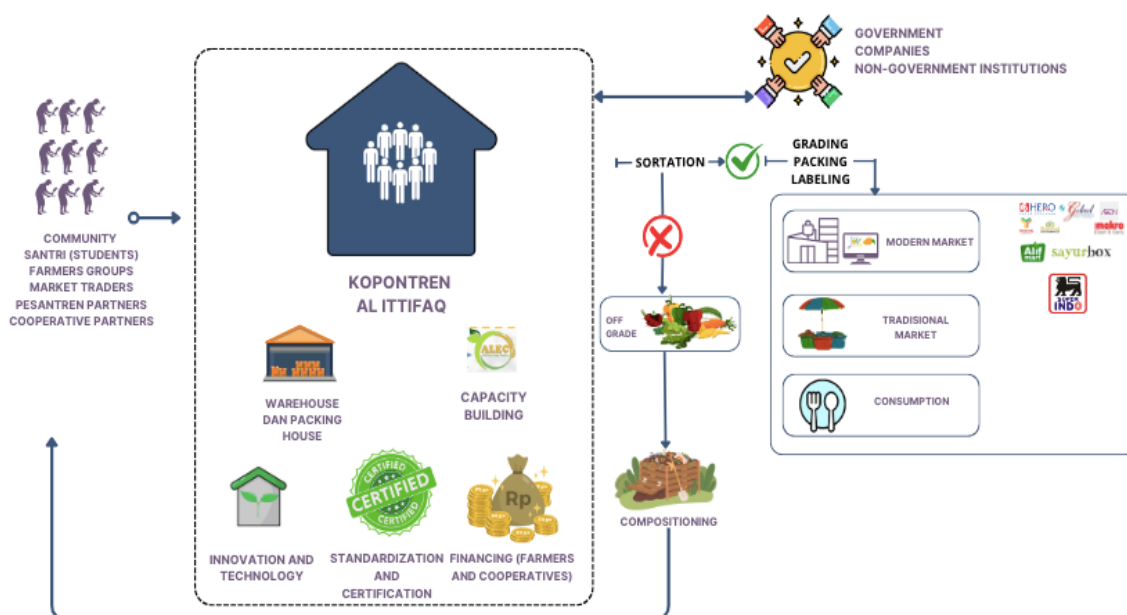


Figure 11 Planned and integrated agricultural business model of Al Ittifaq Islamic boarding school (Food Corporatization) for the 2019-2022 period

Analysis of Kopontren Al Itifaq on Modern Cooperative Indicators

Based on the checklist analysis, the score of the Al Ittifaq Kopontren indicator against the modern cooperative indicator is 0.66 with a 'good' category. The advantages of Kopontren Al Itifaq in terms of governance, namely the regular and open meetings for administrators and members, training that has been structured through ALEC, preparation of a business model or roadmap, land ownership of 14.5 hectares, and more importantly, the application of planting patterns so that sustainable production can be managed. Several indicators that have not been met, namely the application of one-level management, not being in the form of a holding, has only implemented the partnership pattern which is vulnerable to the breaking of the partnerships. There is also no research institution because research institutions are the key to the success of large cooperatives. Next, the cooperative only the domestic market or has not yet exported, and still sells products in the form of fresh fruits or vegetables (upstream products). Kopontren Al Itifaq has not yet developed product innovations for derivative products (downstream products). Meanwhile, the world's large cooperatives are export-oriented and create downstream products.

From the economic side, several indicators have been met, namely an increase in members' income, financial statements which have been audited by external parties, and payments of agricultural products to farmers are carried out in cash. Cash payments or payments in short periods allow farmers to meet their daily lives without having to borrow from middlemen. This can also be seen from the high current asset ratio of Kopontren Al Itifaq at 5.2 times above the required 4.2 times (Ehrhardt & Brigham, 2014). This means that the company has good current assets to cover its short-term liabilities. Meanwhile, the unmet economic indicator is the low asset turnover, which is 0.2 times, far from the criterion of 1.8 times. This means that the cooperative has not used its assets effectively to generate income, or there are assets that are not used optimally.

From the aspect of the social pillar, Kopontren Al Itifaq has been able to ensure a decent standard of living for employees above the regional minimum wage (UMR) of West Java. Employees have also been provided with insurance. Both farmers and employees have education and hajj savings. Meanwhile, the cooperative is still weak in using local raw materials. This is because the seeds are imported. Domestic seeds do not have the same quality.

Finally, from the environmental side, Kopontren Al Ittifaq is still not exposed to the perspective of sustainable development according to the SDGs standard and ISO 26000 for the implementation of social responsibility (CSR).

Farmers' Welfare Level

After analyzing the income data of Kopontren Al Ittifaq farmers, we found that farmers' income in 2023 increased significantly compared to 2022. Farmers' incomes increased within the range of 6-55%. This means that business partnerships in cooperatives have succeeded in increasing farmers' income above the prerequisites of the 2020-2024 RPJMN. Meanwhile, the comparison of farmers' income between grades is different because of the quality and process so that the purchase price is different. Grade A income is higher than grade B income, and grade B income is 20% higher than grade C.

Cooperative-Based Inclusive and Sustainable Food Sector Business Partnership Model

From the findings of literature studies, learning from other cooperatives, and the case study of Kopontren Al Ittifaq, we found a cooperative-based inclusive, and sustainable food sector partnership model (Figure 13). From upstream, farmers need to have accessible and affordable financing, active participation, stable availability of raw materials (fertilizers, seeds, and feed), ongoing training, and definite market access. In the middle, cooperatives implement good governance, which should be in the form of holding, financial statements must be transparent and audited by external parties, conduct 2 levels of management, namely the management does not run directly but is delegated to the executive board or professional managers.

Affordable and accessible financing for cooperatives. Cooperatives must also own 10-30% of total production. Furthermore, cooperatives need to have warehouses & packinghouses; research & development to create product innovation and business expansion. Then, the adoption of technology allows for efficiency in production, supply chain management, and product marketing. Compliance with domestic and international standards and certifications to reduce obstacles when exporting, and a sustainable perspective with the implementation of the SDGs, ISO 26000 for CSR, and ESG concepts. Collaboration must be carried out with various parties such as the government, companies, academics, non-governmental institutions, local and international NGOs, and local communities. Furthermore, strong cooperatives must be export-oriented from domestic production. No less important is, the creation of high added-value downstream products.

Kopontren Al Ittifaq has carried out its function as a supply chain business ecosystem. Starting from consolidating smallholders, provide aid, farmer's financial management, product aggregators, to becoming offtakes for its members. From the corporatization model of farmers that has been built in Kopontren Al Ittifaq, it is necessary to expand the model to allow other cooperatives to become part of the ecosystem. Kopontren Al Ittifaq needs to transform into a cooperative holding like FrieslandCampina and Zen-Noh did. This is in line with [Yustika \(2020\)](#) which stated that changes can only be made if the farming community is united and enlarged.

Planting patterns and planting techniques should continue to be improved so that the quality of the products meets the standards of the modern market. To expand to a wider market, Kopontren Al Ittifaq needs to meet the standards and certifications that apply globally. Inventory standards need to be carried out effectively by collaborating with the government to meet the set standards. Cooperatives will not succeed if they fail to find a market. Cooperative administrators who lack experience, capacity, market information, and networks, face difficulties in marketing ([Moon & Lee, 2020](#)). [Fischer & Qaim \(2012\)](#) highlight the importance of cooperatives in increasing smallholder market participation.

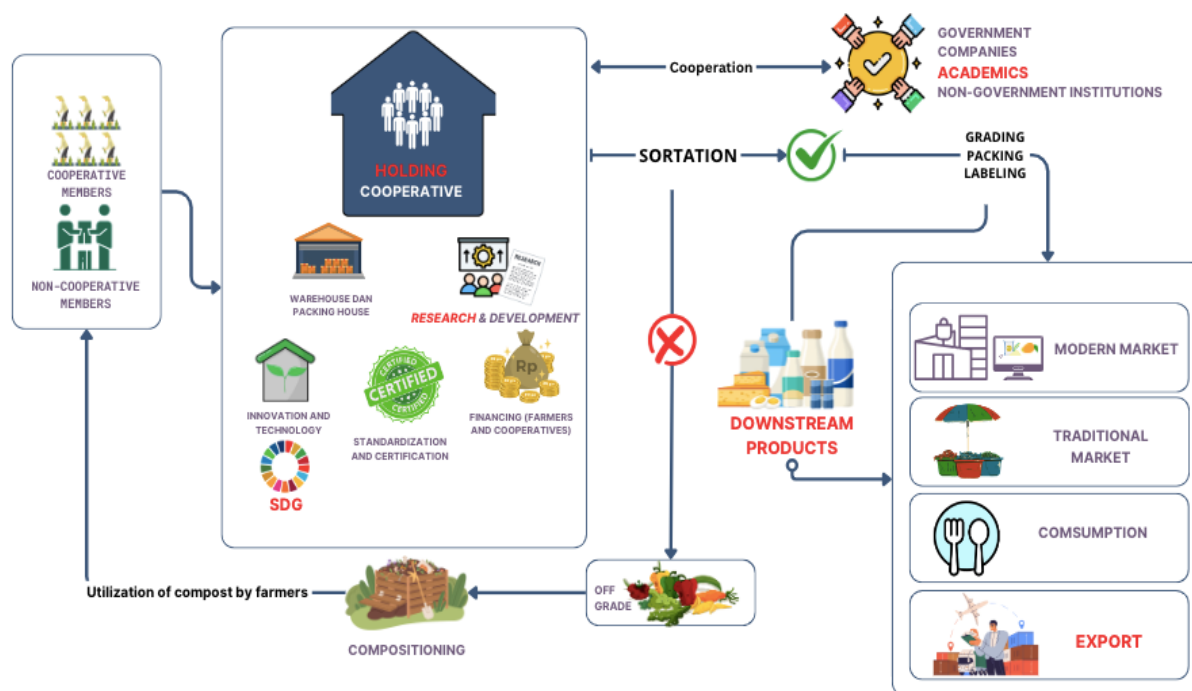


Figure 13 Food sector business partnership model inclusive and sustainable based on Cooperatives

Furthermore, ALEC should expand its function from only mentoring to an institution of mentoring, farmer education, and research (research and development). Continuous training and skill development are important to prevent deviations, knowledge gaps, and information asymmetry (Moon & Lee, 2020). Kalogiannidis (2020) view that cooperative modernization supports sustainable development.

Amidst dynamic market challenges, innovation and adaptation to new technologies are key to maintaining relevance and competitiveness of cooperatives. Proactive management in responding to changes in the market and technology can lead to increased operational efficiency and effectiveness. This is supported by Rezaei et al. (2018) who find that high-tech SME supply chain partnerships are more effective.

Good conflict management is also important in business partnerships, given the diverse interests among the parties involved. Effective conflict management can ensure that any differences of opinion or interests can be resolved constructively for the common good. The longevity and survival of these organizations is related to the ability to continuously adapt to industry crises and challenges (Giagnocavo et al., 2018). Thus, the good implementation of these managerial principles is expected to strengthen cooperative-based food sector business partnerships and produce significant positive impacts for cooperative members and the communities it served. The Al Ittifaq Kopontren also needs to seek land expansion, for example through agrarian reform schemes or social forestry. Kopontren Al Ittifaq has become a pilot for the development of upstream agricultural products (vegetables and fresh fruits), in the future it must be a pilot in the development of downstream products from agricultural products.

Conclusion

Based on literature reviews and benchmarking of agricultural cooperatives, modern cooperative indicators are developed, consisting of four pillars and twenty-nine indicators: governance (14 indicators), economy (5 indicators), social (6 indicators), and environment (4 indicators). Based on the checklist analysis, the Al Ittifaq Kopontren indicators have a "good" grade compared to

modern cooperative indicators. As a result, Kopontren Al-Ittifaq is deserving of being a role model. Kopontren Al Ittifaq is performing well, as evidenced by increases in production capacity, assets, and turnover. However, the SHU (business result) trend remains volatile. The level of farmer wellbeing as measured by income grew by 6-55% in 2023 compared to 2022, exceeding the RPJMN target for 2020-2024. Food industry cooperatives must implement an inclusive and sustainable partnership model in the future, which includes strong institutions (holdings), research institutes, sustainable standards, export orientation, and the development of derivative (downstream) products. The government plays a key role in cooperative advancement, as seen in the Netherlands milk cooperative, Zen-Noh Japan, Codarika Rwanda, and Kopontren al Ittifaq. The role of the government in the reform of Dutch milk, specifically the enactment of the Milk Crisis Law, the Agricultural Crisis Law, Quality Regulations, and the Standardisation Law. Furthermore, developing rural infrastructure, such as land access, agricultural mechanization, and road construction. In Japan, there is an Agricultural Cooperative Law. Then in Rwanda, there is the provision of land, active local government, infrastructure development, and operational costs throughout the program. Not to be overlooked is the government's role in Kopontren Al Ittifaq, which includes providing access to financing, help, training programs, and open market access. Further research should be conducted on cooperatives that are not based on Islamic boarding schools and the non-agricultural sector. Furthermore, more extensive research into farmer welfare, such as intergrade income, social relationships, and capital accumulation, is required.

Author Contribution

Dwinda Rahman: Creating and designing analyses; Collecting data; Contributing data or analysis tools; performing analysis; Writing paper.

Lukman Mohammad Bagga: Supervision, Conceptualization modern cooperatives, Review & editing of the draft and result discussion.

Zenal Asikin: Supervision, Methodology, Review & editing of the draft and result discussion.

Declaration of Competing Interest

We declare that we have no conflict of interest.

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