

Challenges of Implementing Knowledge Management System Agribusiness for Aglaonema Farmers

Yuni Sugiarti¹, Arif Imam Suroso^{2*}, Irman Hermadi³, Euis Sunarti⁴, Fadhilah Bt Mat Yamin⁵

Abstract—Aglaonema plants have become an important element in people's lives, serving as home decorations and sources of income. Aglaonema cultivation is increasingly popular, opening up business opportunities for farmers. This plant is not just a hobby but a horticultural commodity with high economic value. This research aims to analyze the difficulties faced by Aglaonema farmers, from seedling to marketing. This research uses a constructivist paradigm and qualitative methods, involving 20 informants from among farmers, traders, buyers, extension workers, and farmer organizations. Data were collected through interviews, focus group discussions, and observations, with triangulation to validate the information. Data analysis was conducted using the NVivo application. The research results show that the main difficulties faced by Aglaonema farmers include unpredictable price fluctuations, limited varieties, weak communication among farmers, traditional seedling methods, and a lack of information about seed supply. These findings emphasize the need for information sharing between farmers and stakeholders to improve productivity and quality in agribusiness, in line with consumer demands and technological advancements, which can be implemented through a knowledge management system platform in the Aglaonema agribusiness supply chain.

Index Terms—Knowledge management system, qualitative, NVivo, aglaonema farmers.

I. INTRODUCTION¹

Aglaonema ornamental plants have become an important part of people's lives, both for home decoration, gardens, and as a source of income. Cultivation of Aglaonema

ornamental plants is also increasingly in demand, opening up business opportunities for farmers. Aglaonema ornamental plants are not just a hobby, but have become one of the horticultural commodities that are prospective and have high economic value. The strength of Aglaonema lies in the variety of attractive leaf variants, ranging from: motifs, colors, shapes, and sizes, so it is nicknamed "The Queen of Leaves". The demand for this type of Aglaonema ornamental plant tends to increase along with the increasing welfare of society [1].

To overcome the difficulties faced by Aglaonema agribusiness farmers, a comprehensive knowledge management system (KMS) model can be applied to improve their competence in production and marketing. The main challenges include limited communication and cooperation, lack of innovation, conventional marketing practices, minimal use of ICT, inadequate support from research institutions, and ineffective farmer groups [2]. The development of KMS can facilitate the sharing of knowledge and experience through documents, videos, and other media, thereby improving farmers' ability to cultivate and market Aglaonema effectively [3]. The integration of SCM with KMS can further streamline the supply-demand function, ensuring efficient production and supply from farm to consumer, which is critical to meeting consumer demand for quality and price [4]. By incorporating knowledge management into supply chain risk management, farmers can acquire, store, share, and transfer risk knowledge, effectively reducing risks and improving supply chain performance [5]. In addition, the use of information technology in the KMS model can facilitate the creation, transfer, and implementation of knowledge, improving supply chain integration and strengthening relationships with customers and suppliers [6]. This comprehensive approach not only addresses immediate challenges but also promotes sustainable farming practices and economic stability for Aglaonema farmers. Leveraging the NVivo tool for qualitative data analysis can further enhance the KMS by providing insights into farmers' experiences and needs, ensuring the system is tailored to their specific needs. This holistic model leverages knowledge management and information technology to create a resilient and efficient supply chain for Aglaonema agribusiness farmers. By incorporating these elements into the KMS model, Aglaonema farmers can address existing barriers, improve their

Received: 8 January 2025; Revised: 22 January 2025; Accepted: 20 February 2025

*Corresponding author

¹Yuni Sugiarti, School of Data Science, Mathematics, and Informatics, IPB University, Bogor, Indonesia (e-mail: yuni2020sugiarti@apps.ipb.ac.id).

²Arif Imam Suroso, School of Business, IPB University, Bogor, Indonesia (e-mail: arifimamsuroso@apps.ipb.ac.id).

³Irman Hermadi, School of Data Science, Mathematics, and Informatics, IPB University, Bogor, Indonesia (e-mail: irmanhermadi@apps.ipb.ac.id).

⁴Euis Sunarti Saputra, Dept. of Family and Consumer Science, Faculty of Human Ecology, IPB University, Bogor, Indonesia (e-mail: euissunarti@apps.ipb.ac.id).

⁵Fadhilah Bt Mat Yamin, School of Technology Management & Logistics, UUM COB, Universiti Utara Malaysia, Kedah, Malaysia (e-mail: 5fmy@uum.edu.my).

production and marketing strategies, and ultimately achieve better economic outcomes.

Research on the integration of knowledge management and supply chain is conducted by [7], [8], [9], [10] and [11]. These studies recommend that Knowledge Management, Supply Chain to create value, increase effectiveness and productivity and competitiveness of the organization. A supply chain that applies knowledge management in all chains will get a final value greater than the total value of all chains so that it can increase product competitiveness.

Research related to supply chain in plants, conducted by [12]. Effective knowledge management is very important for agricultural logistics companies to improve efficiency, stability, and order. [13] on supply chain research in horticulture has a short time cycle. This study examines various themes and issues related to the supply chain of horticultural products, including: packaging, product quality, sustainability issues in the supply chain, temperature estimates, standards, implementation strategies, and others. In the list of themes and issues, none are relevant to the Supply Chain conditions in Aglaonema plants, or discussions related to Knowledge Management.

Knowledge management is a series of activities to identify, create, explain, and distribute knowledge to be reused, known and learned within the organization [14]. Knowledge management facilitates information sharing, cooperation from long-term supply chain relationships, which will produce products and services with added value for customers [15]. Knowledge management is useful as supply chain integration, improving relationships across the supply chain, aligning supply chain strategies and strengthening knowledge transfer in product development [16]. Integration of knowledge management and supply chain is a greater final value [17].

Strengthening farmer institutions is very important in increasing the competitiveness and independence of farmers [18]. Institutionally, Aglaonema farmers in Depok are under the guidance of the Depok City Food, Agriculture and Fisheries Security Service (DKP3). Nationally, the Nusantara Aglaonema Association (ASA) has also been formed, whose members are Aglaonema farmers. However, in general, farmers in Indonesia are marginalized due to political, institutional, and economic arrangements that limit their access to the market [18]. Most Aglaonema farmers do not join institutions. Information/activities are very lacking: both cultivation, marketing, and Aglo trends.

In reality, Aglaonema farmers often face various obstacles that can hinder their efforts. This can result in decreased productivity, crop quality, and ultimately, their income. This study aims to identify the factors of difficulties faced by Aglaonema ornamental plant farmers in Indonesia using NVivo software. A comprehensive study utilizing NVivo to analyze the performance of scientific literature from Cash Waqf Linked Sukuk (CWLS) revealed various insights [19]. Analyzing Bharat's journey towards Atmanirbharta through Twitter-based analysis using NVivo provides valuable insights into key themes surrounding the concept [20]. By integrating

blockchain technology and cryptocurrency with tools such as NVivo for analysis, Zimbabwe can revolutionize the process of managing mining land ownership to improve efficiency and transparency [21].

The purpose of this study is to analyze the factors of difficulties faced by Aglaonema farmers in Indonesia, and to build a knowledge management system in the supply chain to overcome the difficulties faced by farmers.

II. RESEARCH METHOD

This study uses a qualitative research method with a case study approach. The case study approach was chosen because this study aims to explore in-depth and comprehensive information about the factors of difficulties faced by Aglaonema farmers in Indonesia. And the system development method uses Rapid Application Development (RAD). Rapid Application Development (RAD) was chosen for this study because of its efficiency in system development and active involvement of users throughout the process [22]. The research stages is shown in Fig. 1.

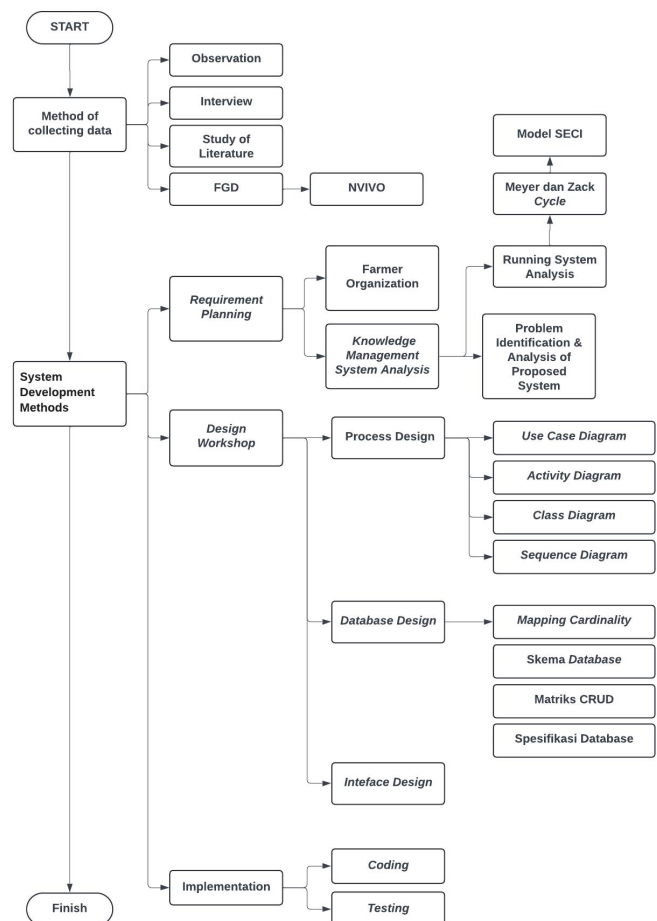


Fig. 1. Research stages.

The data collection techniques used in this study were in-depth interviews with ornamental plant farmers. Participant observation of ornamental plant cultivation. Documentation

studies of various sources of information, such as research reports, journal articles, and government policies. The data analysis technique used in this study is qualitative analysis using NVivo software. The steps for data analysis using NVivo are as follows:

- 1) Import data: enter interview transcript data, observation notes, and documents into the NVivo software.
- 2) Coding: assigning codes to data to identify themes and patterns.
- 3) Creating nodes: grouping codes that have similar meaning into nodes. Creating a tree: displays the relationships between nodes in tree form.
- 4) Creating a tree: displays the relationships between nodes in tree form.
- 5) Create a query: search for data that is relevant to the research theme and topic.
- 6) Making memos: writing down the researcher's ideas, thoughts and interpretations related to the data.
- 7) The results of the data analysis will be presented in the form of rich and detailed descriptions, accompanied by data visualizations, such as images and diagrams.

III. RESULT AND DISCUSSION

A. Result

The results of this study are based on the results of the NVivo tool analysis, referring to Fig. 2, showing that there are several main factors that cause difficulties for ornamental plant farmers in Indonesia, namely: The research findings in the form

of research data are further discussed or critically interpreted with particular relevant theoretical approach. State the gap between current research and previous/related research which signifies the significance of your research. Data can also be supported with the presentation of tables, images, etc. Captions for images are placed below the picture, also with providing sequenced numbering. Captions for table is written above it with sequenced numbering so that it can be easily referred to. Some data can be stated in the following sentence.

- 1) Nursery: the nursery method is still traditional so it is not possible to obtain large numbers of seedlings, unlike tissue culture.
- 2) Maintenance: farmers' ability to maintain Aglaonema is still traditional.
- 3) Data dynamics: dynamic price changes are difficult for farmers to predict.
- 4) Marketing: it is still done traditionally, buyers come directly to the stall. (If there is a variant that sells well, it is sold until it runs out. As a result, it is difficult for them to plant again because there are no seeds. There are also several farmers who are younger, who have sold Aglaonema online. They are already able to use social media as a business transaction).
- 5) Communication between farmers: in terms of communication and information sharing between farmers is still very lacking.
- 6) Running an Aglaonema agribusiness among farmers tends to run individually. In fact, they need various information and experience sharing to improve the quality of

The screenshot shows the NVivo software interface. On the left is a sidebar with navigation options: Quick Access, ORGANIZE (Coding, Cases, Notes, Sets), and EXPLORE (Queries, Visualizations, Maps). The main window displays a table of codes. The table has columns for Name, Files, References, Created on, Created by, Modified on, and Modified by. The data is as follows:

| Name | Files | References | Created on | Created by | Modified on | Modified by |
|-------------------------------|-------|------------|------------------|------------|------------------|-------------|
| Coaching | 5 | 8 | 15/06/2024 14:08 | YUNI | 12/02/2025 17:28 | YUNI |
| Communication Between Buyers | 1 | 1 | 15/06/2024 14:11 | YUNI | 12/02/2025 17:27 | YUNI |
| Communication Between Farmers | 7 | 10 | 15/06/2024 14:08 | YUNI | 12/02/2025 17:26 | YUNI |
| Funds | 2 | 3 | 15/06/2024 15:06 | YUNI | 12/02/2025 17:24 | YUNI |
| impor | 3 | 16 | 15/06/2024 19:30 | YUNI | 18/06/2024 20:53 | YUNI |
| Institutional | 4 | 11 | 15/06/2024 14:09 | YUNI | 12/02/2025 17:25 | YUNI |
| Limitations of variance | 7 | 8 | 15/06/2024 14:09 | YUNI | 12/02/2025 17:26 | YUNI |
| Maintenance | 3 | 4 | 15/06/2024 14:04 | YUNI | 12/02/2025 17:28 | YUNI |
| Marketing | 1 | 2 | 15/06/2024 14:07 | YUNI | 12/02/2025 17:27 | YUNI |
| Nursery | 7 | 13 | 15/06/2024 14:02 | YUNI | 12/02/2025 17:27 | YUNI |
| Price Dynamics | 7 | 23 | 15/06/2024 14:07 | YUNI | 12/02/2025 17:24 | YUNI |
| Seasonal farmer | 2 | 6 | 15/06/2024 14:10 | YUNI | 12/02/2025 17:29 | YUNI |
| stock | 2 | 6 | 15/06/2024 19:37 | YUNI | 18/06/2024 20:53 | YUNI |
| varians | 7 | 17 | 15/06/2024 19:32 | YUNI | 18/06/2024 20:54 | YUNI |

At the bottom of the table, it says "YUNI 14 Items".

Figure 2. Field outcome variables

agribusiness, starting from: Aglaonema cultivation, innovation results, Aglaonema variant development trends, price developments, and increasing more profitable marketing.

- 7) Import onslaught: in this case, farmers' ability to compete with imported products is very low, because imported goods have many variants and are cheaper due to mass production/tissue culture.
- 8) Coaching: guidance from the local government for Aglaonema farmers is very lacking. There is no guidance and training. In fact, the potential of Aglaonema farmers is very good for welfare. Coaching from the local government/department for farmer empowerment is also still lacking. Likewise, organizations such as Kontak Tani Nelayan Andalan (KTNA) and the like have contributed very little to the development of Aglaonema farmers. In the sub-district area, an Aglaonema farmer cooperative has been formed in this area. However, its implementation is still less effective and has disbanded.
- 9) Limited stock: when a certain Aglaonema sells, all are sold out. Stock in farmers is limited because farmers still cultivate traditionally.
- 10) Limitation of variance: our farmers lack variety in comparison to imported Aglaonema due to lack of innovation and support from research institutions/government.
- 11) Institutions: institutionally, farmers already have an association, namely the Nusantara Aglaonema Association (ASA). This association's members are Aglaonema farmers and traders. However, most farmers do not join this association. An ornamental plant farmer group was once formed, but it did not work. It was difficult to gather farmers. The Depok Agriculture Service once provided guidance and assistance, but it did not work well. The farmer group once received financial assistance, amounting to Rp 20 million from Bank Mandiri. But now there is no follow-up. Farmers work individually. Communication between farmers is very lacking.
- 12) Variance dynamics: consumer demand is different every month, demanding new variants such as imported goods.
- 13) Seasonal farmers: seasonal farmers who only focus on trading, focus on Aglaonema as a commodity. These farmers generally do not cultivate plants. The Aglaonema plants they have are only examples. If they get an order, they work with Aglaonema farmers.
- 14) Communication with buyers. In this case, farmers must be able to communicate with buyers regarding the trend of desired variants and prices.

B. Discussion

The results of this study are in line with previous studies that examined the factors that cause difficulties for ornamental plant farmers in Indonesia. The researchers chose qualitative research to gain in-depth insight into the factors that influence the role of agricultural extension workers in empowering farmer groups. This study resulted in a comprehensive understanding of the social dynamics and interactions within the farming community [23]. Qualitative research in dairy farming has been instrumental in exploring the perspectives of various stakeholders, including farmers, policy makers, and

consumers. This approach has uncovered critical issues such as inequalities in the industry and the impact of industrialization on animal welfare [24]. Qualitative methods allow researchers to explore complex agricultural issues in depth. They can gather detailed insights into farmers' experiences, beliefs, and practices, which may not be captured by quantitative methods. This deeper understanding can lead to more effective solutions tailored to specific contexts [1]. NVivo software can be used effectively to analyze complex and diverse qualitative data. The use of NVivo in this study helps researchers identify themes and patterns in the data, as well as create easily understood data visualizations.

Data on farmers' difficulties in implementing Aglaonema plant agribusiness were obtained from farmers. To strengthen the data, data triangulation was conducted on Aglaonema agribusiness stakeholders, namely: extension workers/agricultural service, Aglaonema buyers/consumers, traders, Aglaonema experts, KTNA management, and ASA (Indonesian Aglaonema Association) management. The data collection used focused discussions or FGD with farmers, and interviews with these stakeholders.

• Farmer

Results of FGD with Aglaonema farmers, difficulties faced by farmers in Aglaonema ornamental plant agribusiness: dynamics of Aglaonema price changes, the onslaught of imported products, especially from Thailand and China, farmer institutions are not running, limitations of Aglaonema variants cultivated by farmers. Generally, farmers only cultivate certain types of Aglaonema. Farmers have not been able to create new variant innovations. Likewise, information on Aglaonema variant innovations is difficult for farmers to obtain, communication between farmers is low, lack of communication between farmers and buyers/consumers, marketing difficulties, traditional nurseries so that it is difficult to propagate for a long time. Lack of guidance from extension workers and the agricultural service, limited ability in maintenance, Most farmers are seasonal, only a small number are true Aglaonema farmers. Limited stock, as a result of traditional nurseries.

• Extension officer/agricultural service

The results of interviews with extension workers and the agricultural service, the main difficulties faced by farmers in the Aglaonema ornamental plant agribusiness: dynamic changes in Aglaonema prices, farmer institutions are not running, limited variants, low communication between farmers, nurseries are still traditional so it is difficult to propagate for a long time, lack of guidance from extension workers and the Agricultural Service, and dynamic demand for variants or types of Aglaonema.

• Buyer/consumer

The results of interviews with Aglaonema farmers, the main difficulties faced by farmers in the Aglaonema plant agribusiness: dynamics of Aglaonema price changes, low communication between farmers, limited variance, lack of communication between farmers and buyers/consumers; and dynamics of variance or types of Aglaonema.

• Aglaonema Trader

The results of interviews with Aglaonema traders, the difficulties faced by farmers in the Aglaonema ornamental plant agribusiness, the dynamics of changes in Aglaonema

prices, the onslaught of imported products, low communication between farmers, traditional nurseries making it difficult to propagate for a long time, variance and demand for variances or types of Aglaonema.

- Aglaonema expert

The results of interviews with Aglaonema experts, the main difficulties faced by farmers in the Aglaonema ornamental plant agribusiness: dynamics of changes in Aglaonema prices, low communication between farmers, limited variants, lack of communication between farmers and buyers/consumers, traditional nurseries making it difficult to propagate over a long period of time and dynamics of demand for Aglaonema variants or types.

- KTNA Administrators

The results of interviews with the management of the KTNA organization (Kelompok Tani dan Nelayan Andalan), the main difficulties faced by farmers in the Aglaonema ornamental plant agribusiness: limited capital/funds, dynamics of changes in Aglaonema prices, the onslaught of imported products, farmer institutions are not running, limited variants, low communication between farmers, lack of communication between farmers and buyers/consumers, nurseries are still traditional so it is difficult to propagate for a long time, lack of guidance from extension workers and the agricultural service, limited ability in maintenance, Most farmers are seasonal, only a small number are true Aglaonema farmers, limited stock, as a result of nurseries being carried out traditionally and the dynamics of demand for variants or types of Aglaonema.

- ASA management

The results of interviews with the management of ASA, the main difficulties faced by farmers in the Aglaonema ornamental plant agribusiness: dynamics of changes in Aglaonema prices, farmer institutions are not running, communication between farmers is low, limited variants, nurseries are still traditional so it is difficult to propagate for a long time, lack of guidance from extension workers and agricultural services and dynamics of demand for variants or types of Aglaonema.

The results of triangulation of the parties related to Aglaonema Agribusiness, it is known that: the dynamics of Aglaonema prices that are difficult for farmers to predict, the limitations of the variants cultivated by farmers, the weakness of communication between Aglaonema farmers, weaknesses in breeding as a result of it still being done traditionally and the lack of information related to the provision of seeds, and the dynamics of consumer demand for Aglaonema variants are the most dominant difficulties for farmers in Aglaonema agribusiness.

Supply and demand for both types and prices of Aglaonema plants are very dynamic. The price of Aglaonema is often determined by traders. The dynamics of demand and price are difficult to predict and the most disadvantaged are farmers. The flow of data from data collection to marketing [25], [26] is very important. Aglaonema farmers need to get transparent and sustainable information regarding the trend of Aglaonema

types that consumers like and price developments. Therefore, the integration of knowledge management in the Aglaonema agribusiness supply chain is very necessary starting from farmers, agents, retailers, experts, import distributors, collectors, Aglaonema communities, consumers, and farmer institutions in a sustainable manner. Predicting the price of Aglaonema, the limitations of the variants cultivated by farmers improves communication between farmers, improves the ability to breed or provide information on the provision of prospective seeds, and predicts the types of variants that consumers are interested in. To improve the agribusiness of Aglaonema farmers, these difficulties need to be overcome by building knowledge management in the supply chain of aglaonema agribusiness farmers.

Figure 5 shows prototype knowledge management in the Aglaonema farmer agribusiness supply chain. The right knowledge management can provide significant benefits and uses for the Aglaonema farmer agribusiness supply chain. By increasing access to information and knowledge, strengthening coordination and communication, increasing efficiency and transparency, and increasing the competitiveness of the supply chain,

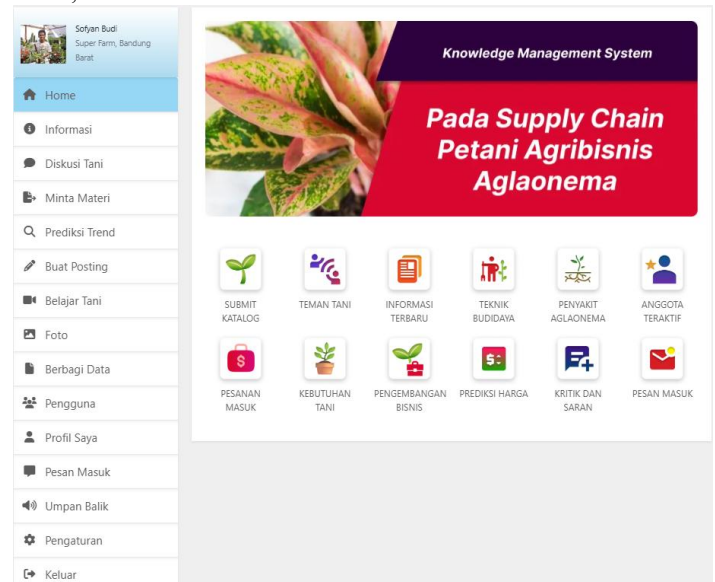


Fig. 5. Prototype knowledge management in the aglaonema agribusiness supply chain.

KM can help improve farmer welfare and improve the competitiveness of Aglaonema farmers in Indonesia. Better access to information and knowledge can help farmers improve productivity and harvest quality. The KM model can help traders and buyers connect more easily, strengthen market networks and increase business opportunities. Better access to information and knowledge about Aglaonema care and benefits can increase buyer satisfaction. Overall, the KM model can help improve the competitiveness of Aglaonema farmers in Indonesia.

Figure 6 and 7 are prototype knowledge management in the Aglaonema farmer agribusiness supply chain, with the knowledge management model in the Aglaonema farmer agribusiness supply chain, all stakeholders get great benefits. Farmers can share with each other to gain access to knowledge and price predictions to increase yields and income. Traders can optimize stock and distribution to increase profits. Buyers enjoy more transparent prices and better product availability. It is easier for extension workers and agricultural experts to support farmers with accurate and fast information. Governments and agricultural associations can use technology-based data to design more effective policies. This model contributes to making the agribusiness supply chain more efficient, smarter and data-based, thereby increasing the competitiveness of the agribusiness industry as a whole.

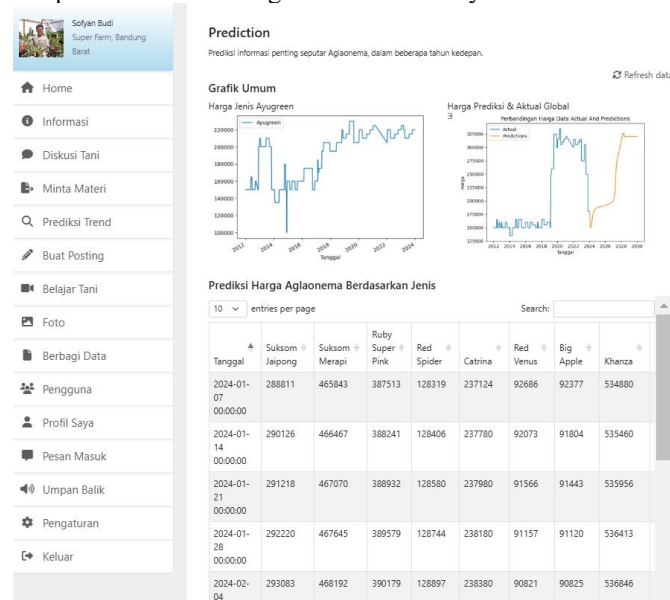


Fig. 6. Farmer user prototype in the knowledge sharing feature.

Based on previous research [2], the study found that Aglaonema farmers face significant challenges in communication and collaboration, which hinders their ability to share knowledge and experiences effectively with each other and with stakeholders from different parts of the production and marketing chain. The study [2] suggested the implementation of a knowledge management system (KMS). This system will enable farmers to learn from multiple sources, share their experiences, and communicate more effectively with stakeholders from upstream to downstream, thereby improving their overall competence in production and marketing. The study [3] concluded that the designed KMS can significantly assist Aglaonema farmers by providing a platform for information exchange, which is crucial for improving their farming practices and marketing strategies, leading to better competence and potentially higher incomes. The study found that traditional methods of managing agricultural supply chains, often controlled by wholesalers without a proper legal framework, have negatively impacted operational efficiency and contributed to economic decline [4]. The study highlights the significant increase in the importance of agricultural supply chain management due to the increasing awareness of environmental issues, food safety issues, and social security,

which have made SCM an essential aspect of modern agriculture [4].

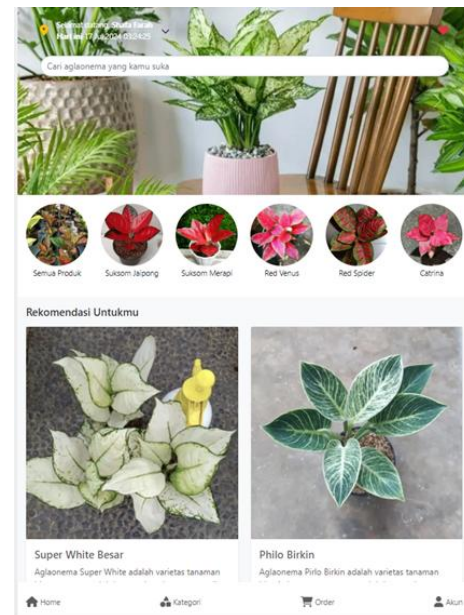


Fig. 7. Farmer user prototype in the online Aglaonema sales feature in KMS in the aglaonema supply chain

The study found that integrating knowledge management into supply chain risk management can significantly improve supply chain performance by ensuring a continuous supply of relevant knowledge throughout the supply chain operations and risk management processes. The model developed in the study can serve as a practical tool for companies seeking to improve their supply chain processes, making it easier to identify areas in need of improvement and implement strategies to address them[6].

Implementing a KMS in the supply chain can significantly benefit Aglaonema farmers by addressing several key challenges and improving their overall competency. First, KMS can facilitate better communication and collaboration among farmers, which is currently lacking and hinders their ability to innovate and market effectively. By providing a platform for sharing knowledge and experiences through documents, videos, and other media, farmers can gain and disseminate valuable information related to cultivation and marketing, thereby improving their production quality and market reach.

The results of the study indicate that farmers need information about Aglaonema cultivation, pests and diseases, markets, and technology. The formulated knowledge management model can facilitate farmers' information needs. The Aglaonema price prediction model can help farmers in determining marketing strategies.

Prototypes of knowledge management models and price prediction models have been developed and can be tested in the field. Research [27] results a system that can facilitate knowledge sharing between BNP2TKI employees and TKI to support improving the quality of TKI. The research results [28] are similar to the RAD method of designing a web-based library information system that is capable of managing membership, procurement and management of collections, circulation of borrowing and returning books. Similar research

[29], used the Rapid Application Development (RAD) system development method. Design and build a health information system to facilitate the processing of health reports and recapitulation, thus helping the performance of employees involved in the health reporting process in entering and presenting report data and information.

This study has successfully analyzed the information needs of farmers in improving Aglaonema agribusiness. Formulating a knowledge management model and Aglaonema price prediction model. Developing a prototype of a knowledge management model and a price prediction model. This study is expected to improve access to information for Aglaonema farmers. Increasing the efficiency and effectiveness of Aglaonema agribusiness. Increasing the welfare of Aglaonema farmers.

IV. CONCLUSION

The dominant difficulties faced by Aglaonema ornamental plant farmers are price dynamics that are difficult for farmers to predict, limited variants cultivated by farmers, weak communication between Aglaonema farmers, weaknesses in breeding as a result of still being carried out traditionally and lack of information related to the provision of seedlings, and the dynamics of consumer demand for Aglaonema variants.

To overcome the difficulties, it is necessary to share information with Aglaonema stakeholders continuously, in the form of a Knowledge Management platform on the Aglaonema Agribusiness Farmer Supply Chain. The implementation of a knowledge management system and price prediction model has been developed and can be tested in the field.

Suggestions for further researchers can deepen the knowledge management model by considering other variables that have not been studied in this study, for example: global markets, climate change, government policies, and other variables. This research can also be continued with the integration of more complex and new technologies, for example using Artificial Intelligence.

ACKNOWLEDGMENT

We would like to express our sincere gratitude to the Head of the Information Systems Study Program, Faculty of Science and Technology, UIN Syarif Hidayatullah Jakarta, Mrs. Dr. Qurrutol Aini, for her invaluable support and assistance throughout this research process. We also extend our heartfelt thanks to the Head of the Computer Science Doctoral Study Program, School of Data Science, Mathematics, and Informatics, IPB University, Mrs. Prof. Dr. Imas Sukaesih Sitanggang, as well as all the lecturers in the Computer Science Doctoral Program, for their guidance and direction during the execution of this research. Additionally, we would like to express our special thanks to Mrs. Prof. Fadhillah Bt Mat Yamin for her willingness to discuss and contribute to this research process.

REFERENCES

- [1] H. S. R. Rosairo, "Place of qualitative methods in agricultural research," *Journal of Agricultural Sciences*, vol. 18, no. 2, pp. 102–110, 2023, doi: 10.4038/jas.v18i2.10250.
- [2] Y. Sugiarti and O. M. Anwas, *Teknopreneur Aglaonema: Mengubah Hobi Menjadi Rezeki*. Jakarta: Gramedia, 2022.
- [3] Y. Sugiarti, A. I. Suroso, I. Hermadi, and E. Sunarti, "Kemampuan belajar petani dalam meningkatkan kompetensi di era teknologi komunikasi dan informasi," *Kwangsan: Jurnal Teknologi Pendidikan*, vol. 11, no. 1, pp. 328–341, 2023.
- [4] Y. Sugiarti, A. I. Suroso, I. Hermadi, and E. Sunarti, "Knowledge management system to improve the competence of aglaonema farmers," in *Proc. 9th Int. Conf. Cyber and IT Service Management (CITSM)*, 2021, pp. 1–6, doi: 10.1109/CITSM52892.2021.9588814.
- [5] Y. Lin, "Agricultural supply chain management," *Indian Science Journal of Research in Engineering and Management*, vol. 3, no. 1, pp. 45–52, 2022.
- [6] Y. Guo, "Research on knowledge-oriented supply chain risk management system model," *Journal of Men's Studies*, vol. 19, no. 2, pp. 123–130, 2011.
- [7] J. Gastélum-Valdez, I. Espitia-Moreno, and B. Ruiz-Morales, "Knowledge management and information technologies: a conceptual model for supply chain integration," *Journal of Engineering Research*, vol. 11, no. 3, pp. 215–225, 2023.
- [8] M. S. Maduka, "Knowledge capabilities in supply chain networks: A taxonomy," in *Proc. Int. Conf. Supply Chain Management*, 2020, pp. 78–85.
- [9] D. G. Schniederjans, C. Curado, and M. Khalajhedayati, "Supply chain digitization trends: An integration of knowledge management," *Int. J. Prod. Econ.*, vol. 220, Art. no. 107439, Nov. 2018, doi: 10.1016/j.ijpe.2019.07.012.
- [10] A. Attia and I. Salama, "Knowledge management capability and supply chain management practices in the Saudi food industry," *Bus. Process Manag. J.*, vol. 24, no. 2, pp. 459–477, 2018, doi: 10.1108/BPMJ-01-2017-0001.
- [11] A. S. Saud and S. Shakya, "Analysis of look back period for stock price prediction with RNN variants: A case study on banking sector of NEPSE," *Procedia Comput. Sci.*, vol. 167, pp. 788–798, 2020, doi: 10.1016/j.procs.2020.03.419.
- [12] M. Gloet and D. Samson, "Knowledge management to support supply chain sustainability and collaboration practices," in *Proc. 52nd Hawaii Int. Conf. Syst. Sci. (HICSS)*, 2019, pp. 5508–5517, doi: 10.24251/HICSS.2019.663.
- [13] C. Fan, S. Ma, and A. Zhou, "Research on supply chain management model of agricultural products logistics based on knowledge base," in *Proc. 2019 Int. Conf. Logistics, Informatics and Service Sciences (LISS)*, 2019, pp. 1–6, doi: 10.1109/LISS.2019.8755758.
- [14] N. Azizah, K. A'Yun, T. W. Septiarini, D. U. Wutsqa, and A. M. Abadi, "Optimization of fuzzy inference system by using table look-up method to predict white sugar price in the international market," *J. Phys.: Conf. Ser.*, vol. 1097, no. 1, 2018, Art. no. 012074, doi: 10.1088/1742-6596/1097/1/012074.
- [15] N. E. Rozanda, R. Wahyuningsih, and Saide, "Application of Knowledge Transfer in E-learning," in *Proc. Seminar Nas. Teknol. Inf.*, Feb. 2018, pp. 2579–5406.
- [16] M. D. R. Pérez-Salazar, A. A. A. Lasserre, M. G. Cedillo-Campos, and J. C. H. González, "The role of knowledge management in supply chain management: A literature review," *J. Ind. Eng. Manag.*, vol. 10, no. 4, Special Issue, pp. 711–788, 2017, doi: 10.3926/jiem.2144.
- [17] A. Akers et al., "Synopsis of guidelines for the clinical management of cerebral cavernous malformations: Consensus recommendations based on systematic literature review by the angioma alliance scientific advisory board clinical experts panel," *Clin. Neurosurg.*, vol. 80, no. 5, pp. 665–680, 2017.
- [18] S. Anantayu, "Farmer Institutions: Roles and Strategies," *SEPA*, vol. 7, no. 2, pp. 102–109, Feb. 2011.
- [19] A. S. Rusyadiana and N. N. Izza, "A comprehensive study on the scientific literatures performance of cash waqf linked sukuk (CWLS) using NVivo," *Islamic Soc. Finance*, vol. 3, no. 1, pp. 1–13, 2023, doi:

- 10.58968/isf.v3i1.214
- [20] R. Sharma and S. Gupta, "Bharat towards atmanirbharta: A twitter-based analysis using NVivo," *J. Content, Community & Commun.*, vol. 13, no. 7, pp. 58–65, 2021, doi: 10.31620/JCCC.06.21/07.
- [21] E. Kilpin, H. Sainidis, G. Jahankhani, and G. Brown, "An analysis of blockchain adoption in zimbabwean mining land title management (MLTM) using NVivo," in *Proc. Int. Conf. Global Security, Safety, Sustainability*, 2023.
- [22] Y. Yanuardi, L. Azhari, A. A. J. Sinlae, and A. D. Alexander, "Development of public service complaint system using rapid application development (RAD) method," *J-Intech: J. Inf. Technol.*, vol. 12, no. 1, pp. 36–48, 2024, doi: 10.32664/j-intech.v12i1.1201.
- [23] J. A. Ramadhani, "Factors influencing the role of agricultural intentions in the empowerment of ornamental plant farming group in lubuk minturun village," *Int. J. Soc. Humanit.*, vol. 2, no. 2, pp. 56–60, 2023, doi: 10.58860/ijsh.v2i2.22.
- [24] M. Vaarst *et al.*, "Qualitative social and human science research focusing on actors in and around dairy farming—An invited review," *J. Dairy Sci.*, vol. 107, no. 12, pp. 10050–10065, Dec. 2024, doi: 10.3168/jds.2024-25329.
- [25] D. L. Miller, M. L. Burt, E. A. Rexstad, and L. Thomas, "Spatial models for distance sampling data: recent developments and future directions," *Methods Ecol. Evol.*, vol. 4, no. 11, pp. 1001–1010, 2013, doi: 10.1111/2041-210X.12105.
- [26] W. Li *et al.*, "Distribution characteristics, source identification and risk assessment of heavy metals in surface sediments of the Yellow River, China," *Catena*, vol. 199, pp. 105–116, 2021, doi: 10.1016/j.catena.2021.105116.
- [27] M. Khoirullah, Y. Sugiarti, and N. Kumaladewi, "Knowledge management system untuk meningkatkan kualitas tenaga kerja," *Appl. Inf. Syst. Manag. (AISM)*, vol. 3, no. 1, pp. 1–10, 2020, doi: 10.15408/aism.v3i1.7896.
- [28] A. Lathifah and Y. Sugiarti, "Analisis dan perancangan sistem informasi perpustakaan madrasah berbasis web dengan metode rapid application development," *Appl. Inf. Syst. Manag. (AISM)*, vol. 5, no. 1, pp. 15–25, 2022, doi: 10.15408/aism.v5i1.23984.
- [29] L. T. Sugito and Y. Sugiarti, "Rancang bangun sistem informasi kesehatan pada PT Jasa Marga Persero Tbk," *Appl. Inf. Syst. Manag. (AISM)*, vol. 1, no. 2, pp. 30–40, 2018, doi: 10.15408/aism.v1i2.20108.