



MORE THAN BARRIERS: INSTITUTIONAL MISALIGNMENTS AND THE FLAWED IMPLEMENTATION OF FARMER CORPORATION IN INDONESIA

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ABSTRACT

Effective institutional arrangements and policies can transform the agricultural sector by enhancing productivity to address present and future challenges. The food estate based on farmer corporation is viewed as a promising model for agricultural institutional development. It has the potential to integrate various agricultural activities from upstream to downstream, thereby increasing farmers' overall productivity and welfare. However, institutional misalignments hinder optimal outcomes. This study employs a blended approach that includes an exploratory study and a deductive thematic analysis guided by the Institutional Analysis and Development (IAD) framework. The exploratory study emphasizes the importance of developing agricultural institutions and identifies key gaps between the grand design of food estate and its actual implementation. Meanwhile, the deductive thematic analysis further explores stakeholders' perspectives, serving as a foundation for the analysis using the IAD framework. The study finds that ineffective implementation of the food estate and the suboptimal establishment of farmer corporation are caused by stakeholders' limited understanding, weak coordination, insufficient technology, low skills and capacities among human resources, and limited access to capital. Additionally, when developing agricultural institutions, it is essential to consider the local community's support and trust to improve the suitability of the selected institutional form. Furthermore, agricultural institutional development should be supported by a well-organized structure, clear operational plans, and core activities to ensure sustainable implementation.

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INTRODUCTION

Agriculture has long been pivotal to development and economic growth, providing essential products and employment that significantly contribute to poverty alleviation (Awokuse & Xie, 2015; Christiaensen & Martin, 2018; Dethier & Effenberger, 2012; Gassner et al., 2019). However, this potential and expected impact of agriculture is limited by institutional barriers, such as power imbalances, unequal asset distribution, unfavorable policies, and weak institutional capacity (Bruinsma, 2017). Achieving productive agriculture requires adopting science and technology, investing in research and development, building capacity, and active participation by local farmers and governments (Dolinska & d'Aquino, 2016; Mellor, 2017; Nin-Pratt, 2016). Agriculture also promotes economic growth by increasing exports and facilitating the import of other goods (Sihombing et al., 2020). Schultz's view emphasizes the importance of agriculture, stating that 'it guarantees subsistence for society, without which growth is not possible' (Dethier & Effenberger, 2012, p. 178). In times of global uncertainty and volatile food prices, ensuring food security is critical (Rusastra et al., 2016). Countries must develop strategies to meet their domestic food demand. Increasing agricultural productivity to meet global food demands is challenging, especially when aiming for sustainability (Bruinsma, 2017). Optimal productivity involves inputs such as labor, land, fertilizer, technology, machinery, and infrastructure, alongside complementary activities such as research and development, policy development, and institutional arrangements (DeBoe, 2020; Lankoski & Thiem, 2020; Nin-Pratt, 2016).

Institutional arrangements, defined as systems of agreements, regulations, norms, and conventions, create a stable environment for governance and social interaction (Shirley, 2005; Sidibé et al., 2018; Slangen, 2001; Totin et al., 2018). These arrangements reduce uncertainty and irrationality in behavior and interactions (Kirsten, 2009). A well-designed institution can transform the agricultural sector through robust plans, policies, and mechanisms that address both present and future challenges (El Bilali, 2019; Vermeulen et al., 2018). Agricultural institutions must evolve to address dynamic trends and challenges, such as food insecurity, by ensuring sustainable supply chains and proper land use (De Janvry, 2010; Lanz et al., 2018). Well-established institutions indicate good governance, resulting in high-quality processes and outcomes (Dethier & Effenberger, 2012; Sidibé et al., 2018).

Institutional development through better governance or government intervention aims to promote sustainable agriculture (Velten et al., 2015). These interventions include state-promoted programs, agricultural extension agencies, capacity building, and financial support (Raitzer et al., 2015; Schut et al., 2016; Sheingate, 2021). The private sector also contributes through funding, investment, and commercialization of agricultural products (Fuglie, 2016; Martin & Clapp, 2015). Successful outcomes from these interventions indicate well-functioning institutions, whereas failures often stem from weak institutions (Osmani et al., 2022). Assessing these outcomes may be biased and subjective, potentially leading to inaccurate conclusions (Imperial & Yandle, 2005). Thus, institutional analysis has gained importance, focusing on hierarchy, structure, interactions, and activities within organizations, complementing economic theories (Ostrom, 2019). This analysis can improve policy compatibility with the existing environment, norms, and beliefs, thereby reducing failure rates (Shirley, 2005). Organizations and their interactions

are viewed as dependent variables shaped by natural conditions, regulations, and norms (Ostrom, 2019).

This study examines the implementation and outcomes of agricultural institutional development in Indonesia, focusing on the government's plan to establish a food estate based on farmer corporations. The food estate policy, regulated by law in Indonesia, was initiated in response to global food insecurity exacerbated by the pandemic, which disrupted food production and distribution worldwide (Biro Perencanaan Kementerian Pertanian 2020). This initiative aims to mitigate challenges in the agricultural sector, including the impacts of land conversion and the threat of climate change, as well as socio-economic constraints on farmers (Al Viandari et al., 2022; Gara et al., 2020). Despite these challenges, Indonesia has significant potential to use underutilized swampland for agriculture, particularly in Central Kalimantan (Fahmid et al., 2022). This farmer corporation aims to improve farmers' welfare and integrate agricultural activities from upstream to downstream (Biro Perencanaan Kementerian Pertanian, 2020). However, the plan encountered issues during implementation, leading to the absence of farmer corporations in the designated area. Initial discussions and interviews revealed confusion among local farmers regarding the concept of a farmer corporation.

The discussion with Badan Perencanaan Pembangunan Daerah Kabupaten Kapuas (2023) highlighted gaps in both institutional and conceptual aspects, along with challenges in establishing a farmer corporation. Institutionalization remains ineffective due to limited stakeholder understanding, poor coordination, and insufficient human resources. Implementation faces obstacles such as scarce resources, technical problems, and weaknesses in formal institutions or interactions. Additionally, most studies on food estates tend to explain the reasons behind the policy, describe the plan or model, and assess its impact and sustainability, but they rarely focus on the agricultural institutions involved (Juhandi et al., 2023; Lasminingrat & Efriza, 2020; Marwanto & Pangestu, 2021; Rakuasa & Latue, 2023).

According to various studies, developing agricultural institutions, such as organizational reforms or new institutional forms, can lead to a more productive system. For instance, Baga et al. (2023) concluded that farmers in farmer groups have a higher average productivity of approximately 4,337 kg per hectare, compared with non-involved farmers at 4,153 kg per hectare. While Sudaryanto et al. (2021) observed that high-value agricultural production increased over the long term, rising from 40.6% during 1990-1999 to 50.2% in 2010-2019, this increase was driven by agricultural institutional development. Moreover, the meta-analysis conducted by Ma et al. (2023) confirmed that agricultural productivity improves under certain conditions, but yield is not guaranteed. Strategies and methods are needed to improve the functioning of agricultural institutions, and this study is on the right track to identify them.

Therefore, to address the aforementioned gaps, this study aims to thoroughly examine and assess the agricultural institutional form developed in the food estate, particularly the farmer corporation, thereby contributing to the existing research and discourse on the food estate. This involves understanding existing implementation issues and formulating recommendations or institutional scenarios to establish a more effective system or setup.

RESEARCH METHOD

This exploratory study aimed to identify the issues and challenges in implementing a food estate blueprint based on farmer corporations, which has reportedly been implemented ineffectively. Exploratory studies are well-suited to identifying and understanding such issues because they can examine a range of topics and cases, including those in agriculture (Ndlovu et al., 2021; Swedberg, 2020). These studies provide comprehensive explanations and valuable insights (Argade et al., 2021; Laurett et al., 2021). Specifically, exploratory studies can investigate cases and plans (Reimer et al., 2023). The exploratory study proceeds through several phases: defining the study's focus; conducting focus group discussions to identify and engage with key issues; informing the selection of districts for direct observation; conducting semi-structured interviews; reviewing secondary data; developing questionnaires for direct interviews and field observations; and analyzing findings from documents, interviews, and observations. The discussions and interviews explored recent progress in agricultural institutional development, community empowerment, relevant factors, issues affecting these developments, and potential solutions.

The key discussion and interview questions in this study are as follows: 1) What is the status of the establishment of farmer corporations? 2) What are the factors, constraints, and problems in the implementation of farmer corporations? 3) How do lived experiences explain the implementation process of farmer corporations, including critiques and suggestions? The data collected through recording and transcription were then transcribed as the informants spoke or explained. A deductive thematic analysis approach was employed to analyze the data (Boström et al., 2024). This approach ensured the application of the Institutional Analysis and Development (IAD) framework within the thematic analysis. This thematic analysis provides comprehensive empirical data for IAD analysis. The data were also examined through systematic analysis to ensure their reliability and validity, including iteratively checking and merging extracted data or transcripts and ensuring that the themes were well represented in the data or narratives (Proudfoot, 2023; Terry et al., 2017).

This study was conducted in Kapuas Regency, Central Kalimantan, Indonesia, one of the prioritized pilot areas for implementing this agricultural grand design. Primary and secondary data were used. Secondary data were obtained from government documents, reports, and various relevant studies. Primary data were collected through direct observation, interviews, and focus group discussions with stakeholders, including farmers, the Regent, the Head of the sub-district, the Head of the village, personnel from the agricultural extension agency (*Badan Penyuluhan Pertanian*, BPP), and staff from various Regency Government departments.

As explained earlier, institutional analysis using the IAD framework can clarify complexity and observe interactions within the hierarchy, in this case, those involved in implementing a farmer corporation-based food estate (Imperial & Yandle, 2005; Ostrom, 2019). The insights and data gathered from the exploratory study were refined through several steps in the IAD framework: 1) identifying action situations; 2) identifying external variables; 3) explaining and examining interactions and outcomes; and 4) evaluating institutions. These steps provide a structured

approach to the analysis. Figure 1 illustrates the framework adapted from Ostrom (2009).

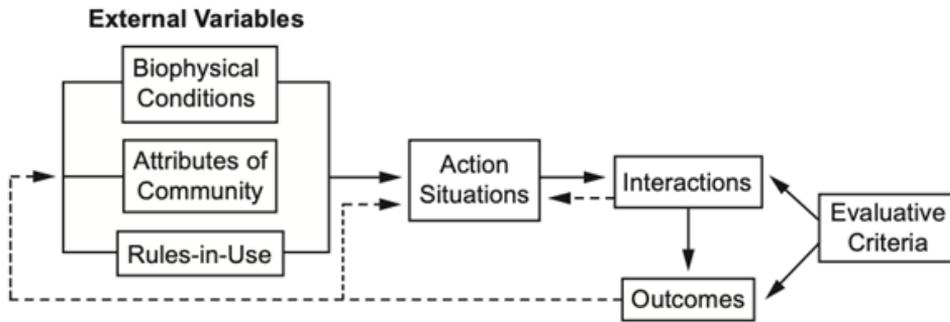


Figure 1.
A Framework for Institutional Analysis
Source: Adapted from Ostrom (2009)

To apply the IAD framework, the analysis guidance is provided in Table 1, in accordance with established procedures. This guidance has been adapted, summarized, and developed from sources that use this framework (Imperial & Yandle, 2005; Ostrom, 2009, 2019; Shirley, 2005; Slangen, 2001).

Table 1. Guidance of Analysis in IAD Framework

Framework’s Step of Analysis	Guidance of Analysis
Identifying action situations	<ol style="list-style-type: none"> 1. Defining the scope and boundaries of the situation and analysis. 2. Explaining the contextual setting. 3. Identifying actors involved in this setting, from individuals or groups, their interests, and roles. 4. Explaining the activities of each actor.
Identifying external variables	<ol style="list-style-type: none"> 1. Explaining biophysical conditions, such as natural resources, infrastructure, or ecosystems. 2. Explaining attributes such as networks, community structure, values, and knowledge. 3. Explaining the applied and agreed-upon rules that govern and control. 4. Linking and examining these variables in shaping behavior and interactions.
Explaining and examining interactions and outcomes	<ol style="list-style-type: none"> 1. Explaining the variety of interactions between individuals or groups, including the information that shapes their decision-making, actions or activities,

Framework’s Step of Analysis	Guidance of Analysis
	negotiations, communication, and conflicts. 2. Explaining the prediction of outcomes, for example, common-pool resources attract competition to use and take those resources as much as possible.
Evaluating institution	1. Evaluation of the institution’s functioning based on the following criteria: a) Efficiency: Minimum allocation of resources and effort to achieve higher productivity. b) Equity: Fair distribution of opportunities, results, and welfare. c) Accountability: Being accountable for actions and decisions made. d) Adaptability: The capacity to respond quickly to a changing environment. e) Policy Outcomes: It evaluated using some questions. Were the outcomes achieved? Does the policy need to be arranged and implemented differently? What are the constraints and flaws in the policy and its implementation?

Source: Adapted and developed from multiple sources, including Imperial & Yandle (2005), Ostrom (2009, 2019), Shirley (2005), Slangen (2001)

RESULT AND DISCUSSION

This exploratory study reveals a significant gap between the food estate’s strategic plan and its actual operations. While the plan is supported by the region’s substantial potential, which includes 195.724 hectares of tidal swamp and 497.913 hectares of non-tidal swamp land in Kapuas Regency (Biro Perencanaan Kementerian Pertanian, 2020), this broad-scale goal faces serious practical challenges. Technical assessments indicate that 14.214 hectares of existing rice paddies are classified as ‘heavy land’ because they are flooded for more than six months each year. Institutional weaknesses exacerbate this situation or physical reality, where despite the presence of 1.799 farmer groups, the study finds that middlemen (*tengkulak*) still ‘fill the void left by formal farmer institutions’ (Badan Perencanaan Pembangunan Daerah Kabupaten Kapuas, 2023). Furthermore, the top-down corporate model is conceptually misaligned because it does not resonate with farmers’ local knowledge, which is more familiar to cooperatives. It is also carried out with minimal human resources who understand the overall plan and lack clear operational procedures. This issue is further explained in the thematic analysis section.

The farmer corporation-based food estate emphasizes farmers as key players in both upstream and downstream agricultural activities, aiming to improve welfare

and integrate the food production value chain (Biro Perencanaan Kementerian Pertanian, 2020). This aims to improve farmers’ welfare and integrate the food production value chain (Fahmid et al., 2022). This model includes two phases: Growth (*Penumbuhan*) and Expansion (*Pengembangan*). The Growth phase involves preparation, farmer consolidation, corporate planning, business model development, and the establishment of business institutions and legal status. The Expansion phase focuses on strengthening the business and achieving corporate self-reliance (Biro Perencanaan Kementerian Pertanian, 2020).

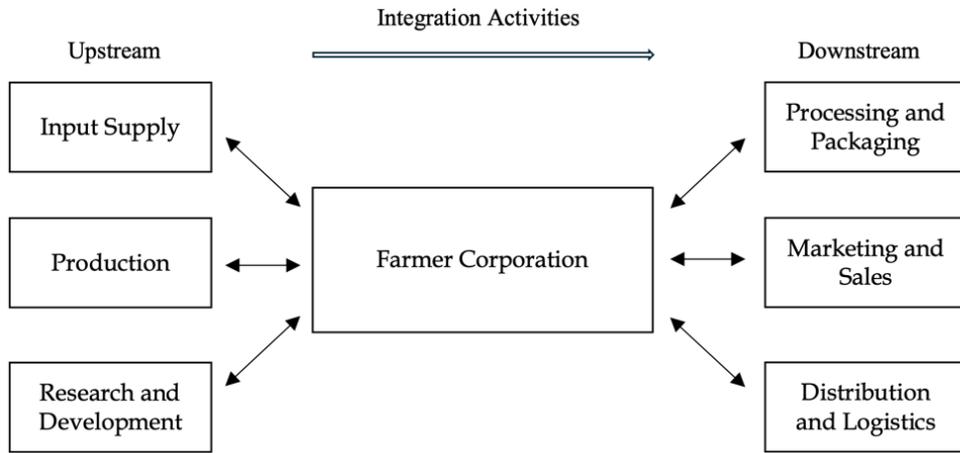


Figure 2.
 Summary of Integrated Agricultural Activities
 Source: Biro Perencanaan Kementerian Pertanian (2020)

Figure 2 illustrates that the integrated agricultural activities developed by Biro Perencanaan Kementerian Pertanian (2020) involve multiple participants, including farmers, farmer group unions, business partners, and markets. Key assumptions include developing region-specific agricultural endeavors, creating economically and commercially viable enterprises, modernizing technology and infrastructure, embracing the Creating Shared Value (CSV) approach, and positioning farmers at the forefront of business development. These institutional plans support the downstreaming of agriculture and the farmer corporation-based food estate, although they are open to criticism and improvement (Biro Perencanaan Kementerian Pertanian, 2020). These descriptions and phases in the grand design are intended to ensure the ideal implementation of a farmer corporation-based food estate. However, these phases can still be improved.

The Deductive Thematic Analysis

The deductive thematic analysis generated sub-themes and exemplary quotes for each theme, guided by the IAD framework used in the study. This is shown in Table 2. Specifically, the exemplary quotes address the key discussion and interview questions mentioned above. Table 2 explains the process and implementation of the food estate policy and farmer corporation from the informants’ perspectives and lived experiences, providing a solid foundation for the subsequent IAD analysis.

Table 2. Themes, Sub-themes, and Exemplary Quotes

Themes and Sub-themes	Exemplary Quotes
1. Biophysical condition	
1.1 Water management and topography	<p><i>".. our problem is excess water.. and then because the related governmental agency has started work but isn't finished, it's still in process.." (Informant 12, Male, Field Agricultural Extension Officer)</i></p> <p><i>"There is often siltation. The estuaries often become shallow, so the water exits slowly. That is the main obstacle, that, and the roads." (Informant 7, Male, Representative of Farmer Group)</i></p>
1.2 Pest pressure and crop risk	<i>"That's the pest that we have never gotten the medicine for.. it could be that in one night, two or three sections are gone. Completely." (Informant 8, Male, Community Member)</i>
1.3 Condition of tools and technology	<i>".. the tools are damaged, so now it's rather difficult for us because we have to repair them first before they can be used." (Informant 12, Male, Field Agricultural Extension Officer)</i>
2. Attributes of community	
2.1 Human resources capacity and perceived readiness	<p><i>"So their way of thinking, they have not yet reached the phase of... being able to sell in the form of, for example, a finished product. Not yet, they still think only for a moment: I produce, I sell." (Informant 4, Male, Agricultural Extension Officer)</i></p> <p><i>".. so the potential is actually there, but it requires a strong effort." (Informant 11, Male, Coordinator of the Dadahup Agricultural Extension Center)</i></p> <p><i>"There are no problems in our environment. This means everything can be resolved, either through consensus or by individuals. In the sense that an individual might move first before the farmer group has given an instruction, and then the other members can adjust." (Informant 10, Male, Village Official)</i></p>
2.2 Generational succession	<i>".. because the young farmers tend to prefer what is instant. For example, like working today, getting paid today. Whereas for agriculture, the term is long." (Informant 12, Male, Field Agricultural Extension Officer)</i>
2.3 Trust, shared understanding, and past experiences	<i>"The trauma of the past is what's dangerous. Crop failure.. That is the biggest.. In fact, helping the people here recover from past trauma is the difficult part." (Informant 13, Male, Manager of Farmer Group)</i>

Themes and Sub-themes	Exemplary Quotes
3. Rules-in-use	
3.1 Operational rules for collective action and coordination	<i>".. because of factors like rats, birds. That's why we have to be in a group to attack. Alone, you have nothing. You have no friends. It's hard." (Informant 13, Male, Manager of Farmer Group)</i>
3.2 Norms for contributing and sanctioning	<i>".. there are sanctions, although not written, for example, those who do not participate in the cleaning will be fined." (Informant 1, Male, Representative of BUMDes)</i>
3.3 Formal rules and perceived legitimacy	<i>"All government or departmental activities always refer to the group. Now it's almost impossible for individuals, you have to be in a group or community." (Informant 1, Male, Representative of BUMDes)</i>
4. Action situation and interactions	
4.1 Perceived viability and capitalization of corporate model	<p><i>".. because it was only established as an organization but has no assets.." (Informant 2, Secretary of the Agricultural Agency)</i></p> <p><i>".. for us to join (the corporation), what can it give us? The cynical thought is that we are just being exploited.. has no programs, there is nothing being managed there." (Informant 12, Male, Field Agricultural Extension Officer)</i></p> <p><i>".. for cultivation, the farmers are already ready, but for managing the output, it cannot be maximized yet. Capital and human resources are not ready." (Informant 5, Male, Farmer Group Member)</i></p> <p><i>"If it's based on a group, it's rather difficult. Because uniting everyone's thoughts into one is quite hard. Forget a group, even within a single family, it's difficult. Uniting two minds into one, let alone many minds." (Informant 9, Male, Farmer Group Member)</i></p>
5. Outcomes	
5.1 Gaps between policy design and implementation	<p><i>"We were promised... there would be complete facilities... that is why the corporation was formed... But until now, there has been no realization or answers to that." (Informant 2, Secretary of Agricultural Agency)</i></p> <p><i>"We are basically being left hanging." (Informant 12, Male, Field Agricultural Extension Officer)</i></p>

Themes and Sub-themes	Exemplary Quotes
	<p><i>“Yes, in the beginning, the spirit was there, the spirit was rising. But the agriculture itself did not rise, not yet. Because they could not yet carry out the cultivation.” (Informant 11, Male, Coordinator of the Dadahup Agricultural Extension Center)</i></p>
<p>6. Evaluation</p>	
<p>6.1 Stakeholder’s perspectives on institutional design</p>	<p><i>“My thought is this: a corporation should not be formed using the concept of a large scale. Start small, but make it work. They did it backwards: started big, then got smaller.” (Informant 2, Secretary of the Agricultural Agency)</i></p> <p><i>“.. the positive factor influencing the farmers is this: in the past, when people planted superior rice, it never succeeded... but why are they interested now? because they have now seen it (can succeed), farmers can see and prove it right there.” (Informant 3, Male, Head of the Association of Farmer Groups)</i></p> <p><i>“Does this group-based farming still need additional regulations and assistance from the government? Yes, infrastructure and protection for the farmer group.” (Informant 5, Male, Farmer Group Member)</i></p>
<p>6.2 Stated preference for alternative institutional model</p>	<p><i>“If it’s large-scale, it seems difficult. So, it must start small. If this small cooperative has not succeeded, then wait.” (Informant 13, Male, Manager of Farmer Group)</i></p> <p><i>“Because the village people have already established the cooperative, if they are supported, they have responsibility. Because it’s their own village being built up.” (Informant 13, Male, Manager of Farmer Group)</i></p>

Table 2 presents the raw data and analysis, supported by several exemplary quotes that are essential for a detailed IAD analysis aimed at understanding complex issues. It includes nuanced insights from informants about their perceived conditions and experiences after the implementation of the food estate based on farmer corporation. This indicates that their overall conditions and experiences suggest that establishing a farmer corporation or agricultural institution should be better prepared and more thoroughly reviewed before decisions are made and the plan is implemented.

IAD Analysis of Farmer Corporation and Issues in the Implementation

Table 3 presents a refined analysis and structured explanations of this study using the IAD framework.

Table 3. IAD Analysis of Farmer Corporation

Identifying action situations	
	<p>The government is establishing a farmer corporation-based food estate in Kapuas Regency, Central Kalimantan, to address global agricultural production uncertainties and meet domestic demand. This policy, designed by the Ministry of Agriculture or <i>Kementarian Pertanian Republik Indonesia</i> (Kementan RI), excites farmers as key participants, aiming to improve their welfare. Other stakeholders include the local government, responsible for regional implementation, and the Agricultural Extension Agency, which provides support to the farmers. The policy integrates agricultural activities from upstream to downstream, involving farmers, farmer group unions, machinery, business partners, and the broader market.</p>
Identifying external variables	
Biophysical Condition	<p>Kapuas Regency has 195,724 hectares of tidal swamps and 497,913 hectares of peat swamps, offering abundant water and flat topography suitable for agriculture. While various forest areas, except Conservation Forests, can be converted for farming, much of this potential remains untapped, contributing little to national food production. However, challenges such as unpredictable rainfall, changing seasons, and pest disruptions threaten agricultural development. Additionally, there is a mismatch between soil conditions and the type of seeds planted, resulting in lower-quality products that do not meet market or consumer preferences.</p>
Attributes in Community	<p>Preparatory activities, such as farmer discussions, collaboration, and community empowerment, have been observed in agricultural institution planning. Stakeholders, including the Department of Agriculture, Agricultural Extension Agency, and farmers, must work together to build strong institutions. They recognize the benefits of institutions and farmer groups, such as access to government programs, aid, tools, coaching, and collaborative problem-solving. Existing farmer groups, such as <i>Kelompok Tani</i> (Poktan) and <i>Gabungan Kelompok Tani</i> (Gapoktan), support cooperative efforts.</p>
Rules-in-Use	<p>Rules shape the interactions of stakeholders. While the government has issued a blueprint for the farmer corporation-based food estate, the implementation lacks clear regulations and Standard Operating Procedures (SOPs) to coordinate efforts across different levels.</p>

The Linkage of Variables in Shaping Interaction and Behaviour	Stakeholders see great potential in Kapuas Regency for implementing the policy, given its unused agricultural land, but they acknowledge challenges such as unpredictable weather and pests. While they support the idea of a farmer corporation to improve farmers' welfare, many are unclear about the system and lack the necessary human resources to implement it. Farmers and stakeholders demand clear SOPs and an easy-to-understand institutional model to prevent delays and ensure effective implementation.
Explaining and examining interactions and outcomes	
Interactions	The absence of SOPs leads to confusion among stakeholders, hindering the ideal establishment of farmer corporations.
Outcomes	The grand design for establishing the farmer corporation has not achieved its intended outcome. However, its detailed procedures have not been translated into clear, simple regulations and SOPs, making it difficult for lower-level stakeholders to understand and implement.
Evaluating institutions	
Efficiency	Currently, establishing a farmer corporation requires significant effort and cooperation, leading to inefficiencies. However, over time, progress will likely improve efficiency as stakeholders gain knowledge and adopt suitable institutional designs.
Equity	All stakeholders, particularly farmers, continue to have opportunities to express their aspirations and concerns regarding the farmer corporation.
Accountability	Policy implementation follows a grand design, and farmers recognize its potential benefits. However, many stakeholders lack the competence to implement it, resulting in limited accountability and transparency in the process.
Adaptability	The establishment of farmer corporations requires a comprehensive review of their adaptability, as the corporate model may not fit actual conditions or align with the aspirations and capacity or competency of local communities.
Policy Outcomes	The establishment of farmer corporations has not achieved its intended outcomes, but it offers valuable lessons and opportunities for developing clearer and more effective agricultural institutions. These insights have been translated into practical recommendations for future institutional design and implementation. Moreover, based on detailed analysis and observation, the policy of establishing farmer corporations needs to be reconsidered, as it has caused confusion among stakeholders and lacks clear guidance or coordination in its implementation. Informants and local stakeholders prefer

and recommend agricultural cooperatives over other forms of agricultural institutions. Despite some disadvantages, such as lower competitiveness, these cooperatives may have more trust and support from the community and could potentially expand to larger scales of operation.

All stakeholders in the food estate program recognize the need for agricultural institutionalization, but the farmer corporation is not yet fully established despite the Ministry of Agriculture's grand design (Li, 2007). Positive progress includes infrastructure development, farmer empowerment and collective efforts. However, agricultural institutions or farmer corporation-based farming initiatives remain incomplete in the Dadahup and Bataguh districts. Although preparatory activities are underway, full optimization remains incomplete (Baga et al., 2023). Key challenges include natural issues, such as unpredictable weather and pests, and non-natural issues, such as a lack of stakeholder understanding, unsynchronized efforts, and insufficient regulations (Ndlovu et al., 2021). Establishing a farmer corporation is a complex process that requires skilled professionals, committed collaboration, additional training, and engagement from stakeholders, investors, and business partners to succeed (Ihsaniyati et al., 2024). Table 4 summarizes these issues.

Table 4. Existing Issues during the Implementation of Grand Design

Issues during the implementation of farmer corporation-based food estate	
Natural	
1.	Unpredictable rainfall and seasons.
2.	Pest-related disruptions include pest.
3.	Mismatch between soil conditions and the type of seeds planted.
Non-natural	
1.	Stakeholders lack an understanding of agricultural institutional development.
2.	Limited capacity, competency, and knowledge in establishing a farmer corporation.
3.	Limited communication and coordination among stakeholders.
4.	Lack of clear regulations or comprehensive SOPs.
5.	Limited technology adoption.
6.	Insufficient access to capital and business partners.

There is no evidence that activities from both phases, Growth (*Penumbuhan*) and Expansion (*Pengembangan*), in the grand design are being implemented effectively. Farmers continue their usual activities with minimal guidance in establishing a farmer corporation-based food estate. There is limited identification of potential, farmer consolidation, and discussion on establishing a farmer corporation. Stakeholders, including locals and farmers, are confused about how to implement the Grand Design.

The establishment of the anticipated farmer corporation as an agricultural institution is hindered by a lack of coordination and understanding among stakeholders, as outlined in the guidelines. A feasible solution is to provide comprehensive, practical guides for stakeholders and have an active facilitator to

ensure commitment to implementing the agricultural institutional plan (Jorgi et al. 2019). Agricultural institutional development should not be limited to farmer corporations. Although it was initiated with anticipated outcomes in mind, the grand design has proven inadequate for effective implementation. Other forms, such as Village-Owned Enterprises or *Badan Usaha Milik Desa* (BUMDes), Farmer Group Unions or *Kelompok Tani* (Poktan), *Gabungan Kelompok Tani* (Gapoktan), and cooperatives, should be considered (Sidibé et al., 2018; Totin et al., 2018). Field observations and discussions indicate that these alternatives are more familiar to the community and stakeholders, and that some locals have successfully embraced cooperatives despite organizational challenges (Bategeka et al., 2013).

Providing detailed explanations and recommendations that make agricultural cooperatives more accessible to the community can boost their role in effective agricultural institutional development (Jorgi et al., 2019). Generally, a cooperative is defined as ‘an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise’ (Ortmann & King, 2007, p. 19). A cooperative is a democratically managed entity run by its members, dedicated to serving its members’ needs, creating jobs, managing risks, and lowering costs. They improve the quality of life and promote sustainability within communities (Ortmann & King, 2007). Agricultural cooperatives focus on marketing, supply, and services, supporting several activities such as processing, price negotiation, and sales, and providing essential materials, equipment, and services, including transportation, storage, and credit (Bhattarai & Pandit, 2023; Kumar et al., 2015; Ortmann & King, 2007). Cooperatives also act as intermediaries between farmers and stakeholders, including investors and banks. Additionally, cooperatives provide several benefits: economically, they enhance bargaining power and facilitate processing and marketing; environmentally, they promote sustainable farming practices; socially, they foster knowledge sharing, create employment opportunities, and empower women (Candemir et al., 2021; Pratiwi et al., 2021). Agricultural cooperatives are not widely established in Kapuas Regency, but groups such as Farmer Groups (Poktan) and Farmer Group Unions (Gapoktan) share cooperative features, providing benefits such as access to infrastructure, empowerment, and stronger bonds. Difficulties in establishing agricultural cooperatives include aligning models with local conditions, socioeconomic factors, and initial government support (Abate, 2018; Ajates, 2017; Bretos & Marcuello, 2017; Khan et al., 2022; Marín-González et al., 2022). Moreover, exploring various institutions is still viable if risks are managed. Figure 3 highlights these institutions and recommendations for implementation.

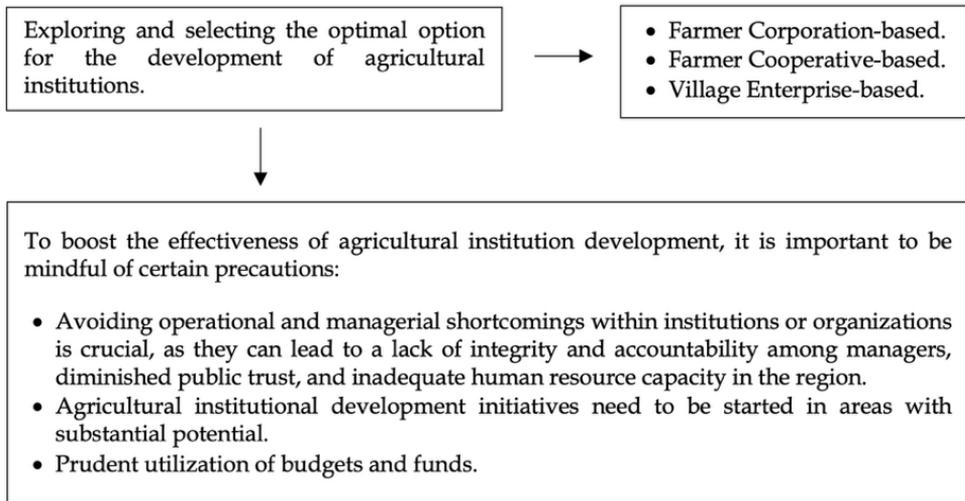


Figure 3.

Emerging Options and Precautions in the Development of Agricultural Institutions

Several key factors must be considered to improve agricultural institutions. While cooperatives are familiar to locals, they often fail due to poor management, a lack of accountability, and insufficient human resource capacity. Exploring alternative models, such as Village-Owned Enterprises (BUMDes), can address these issues. Additionally, as highlighted in Figure 3, institutions should be developed in areas with potential or consistent yields to ensure a stable foundation for success and reduce risk. Proper budget management is important because local governments often misuse funds due to a limited understanding. Training on budget allocation is also necessary to achieve developmental goals.

Recommendations and Scenarios for Improving Agricultural Institutions

Next, this study outlines the scenario and core activities of agricultural institutional development based on field observations, stakeholder input, and literature (Abate, 2018; Ajates Gonzalez, 2017; Bretos & Marcuello, 2017; Khan et al., 2022; Marín-González et al., 2022; Ortmann & King, 2007), offering the practical framework. In Figure 4 below, the selected agricultural institution is an agricultural or farmer's cooperative, whose effective implementation depends on the support of various stakeholders using the Penta helix model, along with government intervention and oversight. An active facilitator and supervisory entity are necessary to maintain commitment to implementation. Before establishing an agricultural cooperative, several activities are required: 1) identification and mapping of human resources, stakeholders, and potential in the area; 2) consolidating farmers and developing structures within farmers' cooperatives; 3) designing and developing the business units to be formed, and their business models; 4) planning the legality of the types of business entities; and 5) planning long-term strategies in terms of financing, business diversification, business sustainability, and partnerships. Examples of business units and their descriptions are also detailed in Figure 4. While there are many options for establishing an agricultural institution, the stakeholders involved,

the factors at play, and the preliminary activities remain crucial, regardless of the institution’s specific form. Therefore, even if the selected agricultural institution, such as an agricultural cooperative, is replaced by another form, its supporting structures and activities remain vital to successful agricultural institutional development.

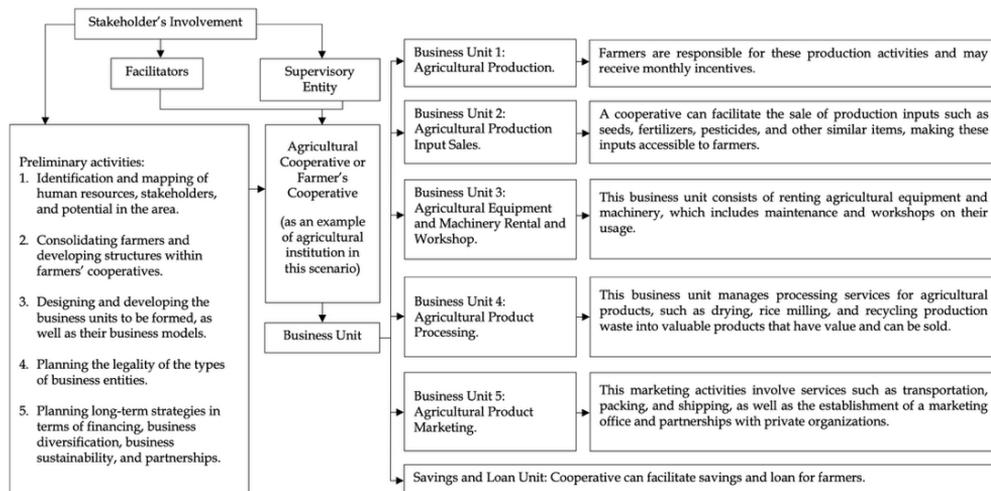


Figure 4. An Example of Basic Scenario and Core Activities for Agricultural Institutional Development.

CONCLUSION

This study offers a comprehensive understanding of the issues and challenges that hinder the effective implementation of food estate and the establishment of farmer corporation. Non-natural factors significantly contribute to ineffective implementation, mainly due to limited understanding and coordination among stakeholders, as well as a lack of clear comprehension of the concepts and insufficient guidance throughout the process. This study presents suitable institutional scenarios and recommendations for developing a more effective agricultural institutional form. An effective agricultural institutional form requires substantial support and trust from the community, as exemplified by the agricultural cooperative discussed in this study. Furthermore, any selected agricultural institutional form or model must be developed with a detailed basic scenario and core activities to ensure sustainable operations and successful implementation. The insights from this study can also enhance future agricultural initiatives, providing a pathway to improved outcomes in agricultural institutional development and to fostering productive, sustainable practices.

AUTHOR CONTRIBUTION STATEMENT

[Author I and Author II]: conceptualized the study; [Author I, Author II, and Author III]: collected, analyzed, and interpreted the data; [Author I]: finalized and edited the manuscript.

DECLARATION OF COMPETING INTEREST

The authors declare no conflict of interest. The funders had no role in the design of the study, in the collection, analyses, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.

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ETHIC STATEMENT

Ethical review and formal approval were waived because this study was observational, involved no intervention, and presented minimal risk to participants. Despite the waiver, all respondents provided informed consent before participating, and all collected data were anonymized and kept confidential.

REFERENCES

- Abate, G. T. (2018). Drivers of Agricultural Cooperative Formation and Farmers' Membership and Patronage Decisions in Ethiopia. *Journal of Co-Operative Organization and Management*, 6(2), 53–63. doi: 10.1016/j.jcom.2018.06.002
- Ajates, G., R. (2017). Going Back to go Forwards? From Multi-Stakeholder Cooperatives to Open Cooperatives in Food and Farming. *Journal of Rural Studies*, 53(1), 278–290. doi: 10.1016/j.jrurstud.2017.02.018
- Al Viandari, N., Wihardjaka, A., Pulunggono, H. B., & Suwardi, S. (2022). Sustainable Development Strategies of Rainfed Paddy Fields in Central Java, Indonesia: A Review. *Caraka Tani: Journal of Sustainable Agriculture*, 37(2), 275–281. doi: 10.20961/carakatani.v37i2.58242
- Argade, A., Laha, A. K., & Jaiswal, A. K. (2021). Connecting Smallholders' Marketplace Decisions to Agricultural Market Reform Policy in India – An Empirical Exploration. *Journal of Macromarketing*, 41(3), 471–483. doi: 10.1177/0276146721997885
- Awokuse, T. O., & Xie, R. (2015). Does Agriculture Really Matter for Economic Growth in Developing Countries? *Canadian Journal of Agricultural Economics/Revue Canadienne d'agroéconomie*, 63(1), 77–99. doi: 10.1111/cjag.12038
- Badan Perencanaan Pembangunan Daerah Kabupaten Kapuas. (2023). *Model Pemberdayaan Kelembagaan Petani Berbasis Korporasi di Food Estate Kabupaten Kapuas*. Focus Group Discussion

- Baga, L. M., Utami, A. D., & Wahyudi, A. F. (2023). Exploring the Relation between Farmer Group Membership and Agricultural Productivity: Evidence from Indonesian Rice Farming. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 9(1), 65–78. doi: 10.18196/agraris.v9i1.115
- Bategeka, L., Kiiza, J., & Kasirye, I. (2013). *Institutional Constraints to Agriculture Development in Uganda*. Economic Policy Research Centre. Research Series
- Bhattarai, R., & Pandit, M. (2023). Cooperatives as Pillar of Economy to Improve Agriculture Production and Marketing. *Nepal Public Policy Review*, 3(1), 221–238. doi: 10.59552/nppr.v3i1.61
- Biro Perencanaan Kementerian Pertanian. (2020). *Grand Design Pengembangan Kawasan Food Estate Berbasis Korporasi Petani di Lahan Rawa Kalimantan Tengah*. Biro Perencanaan, Kementerian Pertanian
- Boström, K., Dojan, T., Rosendahl, C., Gehrke, L., Voltz, R., & Kremeike, K. (2024). How do Trained Palliative Care Providers Experience Open Desire to Die-Conversations? an Explorative Thematic Analysis. *Palliative and Supportive Care*, 22(4), 681–689. doi: 10.1017/S1478951522001006
- Bretos, I., & Marcuello, C. (2017). Revisiting Globalization Challenges and Opportunities in the Development of Cooperatives. *Annals of Public and Cooperative Economics*, 88(1), 47–73. doi: 10.1111/apce.12145
- Bruinsma, J. (2017). *World Agriculture: Towards 2015/2030: an FAO Study*. Routledge
- Candemir, A., Duvaleix, S., & Latruffe, L. (2021). Agricultural Cooperatives and Farm Sustainability - A Literature Review. *Journal of Economic Surveys*, 35(4), 1118–1144. doi: 10.1111/joes.12417
- Chauhan, S. (2016). Luvkush Crop Producer Company: a Farmer's Organization. *DECISION*, 43(1), 93–103. doi: 10.1007/s40622-015-0121-1
- Christiaensen, L., & Martin, W. (2018). Agriculture, Structural Transformation and Poverty Reduction: Eight New Insights. *World Development*, 109(1), 413–416. doi: 10.1016/j.worlddev.2018.05.027
- De Janvry, A. (2010). Agriculture for Development: New Paradigm and Options for Success. *Agricultural Economics*, 41(1), 17–36. doi: 10.1111/j.1574-0862.2010.00485.x
- DeBoe, G. (2020). *Impacts of agricultural policies on productivity and sustainability performance in agriculture: A literature review*. OECD Food, Agriculture and Fisheries Papers. Retrieved from <https://www.oecd.org/en/publications/>
- Dethier, J. J., & Effenberger, A. (2012). Agriculture and Development: A Brief Review of the Literature. *Economic Systems*, 36(2), 175–205. doi: 10.1016/j.ecosys.2011.09.003
- Dolinska, A., & d'Aquino, P. (2016). Farmers as Agents in Innovation Systems. Empowering Farmers for Innovation Through Communities of Practice. *Agricultural Systems*, 142(1), 122–130. doi: 10.1016/j.agsy.2015.11.009
- El Bilali, H. (2019). The Multi-Level Perspective in Research on Sustainability Transitions in Agriculture and Food Systems: A Systematic Review. *Agriculture*, 9(4), 74–85. doi: 10.3390/agriculture9040074
- Fahmid, I. M., Wahyudi, Agustian, A., Aldillah, R., & Gunawan, E. (2022). The Potential Swamp Land Development to Support Food Estates Programmes in Central Kalimantan, Indonesia. *Environment and Urbanization ASIA*, 13(1), 44–55. doi: 10.1177/09754253221078178

- Fuglie, K. O. (2016). The Growing Role of the Private Sector in Agricultural Research and Development World-Wide. *Global Food Security*, 10(1), 29–38. doi: 10.1016/j.gfs.2016.07.005
- Gara, A., Aounallah, M. K., & Ajabi, D. (2020). Evaluation of Farms' Sustainability According to Land Tenure in Mornag, Tunisia. *Caraka Tani: Journal of Sustainable Agriculture*, 36(1), 45. doi: 10.20961/carakatani.v36i1.43726
- Gassner, A., Harris, D., Mausch, K., Terheggen, A., Lopes, C., Finlayson, R., & Dobie, P. (2019). Poverty Eradication and Food Security Through Agriculture in Africa: Rethinking Objectives and Entry Points. *Outlook on Agriculture*, 48(4), 309–315. doi: 10.1177/0030727019888513
- Grashuis, J., & Su, Y. (2019). A Review of The Empirical Literature on Farmer Cooperatives: Performance, Ownership and Governance, Finance, and Member Attitude. *Annals of Public and Cooperative Economics*, 90(1), 77–102. doi: 10.1111/apce.12205
- Ihsaniyati, H., Sarwoprasodjo, S., Muljono, P., & Gandasari, D. (2024). Diversity of Knowledge-Sharing Behavior to Encourage the Practice of Robusta Coffee Red-Picking (Case Study of Temanggung Robusta Coffee Farmer, Indonesia). *Caraka Tani: Journal of Sustainable Agriculture*, 39(1), 235. doi: 10.20961/carakatani.v39i1.82647
- Imperial, M. T., & Yandle, T. (2005). Taking Institutions Seriously: Using the IAD Framework to Analyze Fisheries Policy. *Society & Natural Resources*, 18(6), 493–509. doi: 10.1080/08941920590947922
- Jorgi, R. S., Gayatri, S., & Dalmiyatun, T. (2019). Hubungan Tingkat Pengetahuan Petani dengan Efektivitas Pelaksanaan Program Kartu Tani di Kabupaten Semarang. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 5(2), 1-11. doi: 10.18196/agr.5278
- Juhandi, D., Darwanto, D. H., Masyhuri, M., Mulyo, J. H., Sasongko, N. A., Anda, M., & Martini, T. (2023). Farm Sustainability Assessment and Model: Achieving Food Security through the Food Estate Program in North Sumatra. *Land*, 12(10), 1833-1841. doi: 10.3390/land12101833
- Khan, N., Ray, R. L., Kassem, H. S., Ihtisham, M., Siddiqui, B. N., & Zhang, S. (2022). Can Cooperative Supports and Adoption of Improved Technologies Help Increase Agricultural Income? Evidence from a Recent Study. *Land*, 11(3), 361-372. doi: 10.3390/land11030361
- Kirsten, J. (2009). *Institutional economics perspectives on African agricultural development*. International Food Policy Research Institute
- Kumar, V., Wankhede, K. G., & Gena, H. C. (2015). Role of Cooperatives in Improving Livelihood of Farmers on Sustainable Basis. *American Journal of Educational Research*, 3(10), 1258–1266. doi: 10.12691/education-3-10-8
- Lankoski, J., & Thiem, A. (2020). Linkages Between Agricultural Policies, Productivity and Environmental Sustainability. *Ecological Economics*, 178(1), 106809-106817. doi: 10.1016/j.ecolecon.2020.106809
- Lanz, B., Dietz, S., & Swanson, T. (2018). Global Economic Growth and Agricultural Land Conversion under Uncertain Productivity Improvements in Agriculture. *American Journal of Agricultural Economics*, 100(2), 545–569. doi: 10.1093/ajae/aax078

- Lasminingrat, L., & Efriza, E. (2020). The Development of National Food Estate: The Indonesian Food Crisis Anticipation Strategy. *Jurnal Pertahanan & Bela Negara*, 10(3), 229-237. doi: 10.33172/jpbh.v10i3.1110
- Laurett, R., Paço, A., & Mainardes, E. W. (2021). Sustainable Development in Agriculture and its Antecedents, Barriers and Consequences – An Exploratory Study. *Sustainable Production and Consumption*, 27(1), 298-311. doi: 10.1016/j.spc.2020.10.032
- Li, T. M. (2007). *The Will to Improve: Governmentality, Development, and the Practice of Politics*. Duke University Press
- Li, T. M. (2021). Commons, co-ops, and corporations: assembling Indonesia's twenty-first century land reform. *The Journal of Peasant Studies*, 48(3), 613-639. doi: 10.1080/03066150.2021.1890718
- Ma, W., Hong, S., Reed, W. R., Duan, J., & Luu, P. (2023). Yield Effects of Agricultural Cooperative Membership in Developing Countries: A Meta-Analysis. *Annals of Public and Cooperative Economics*, 94(3), 761-780. doi: 10.1111/apce.12411
- Marín-González, F., Moganadas, S. R., Paredes-Chacín, A. J., Yeo, S. F., & Subramaniam, S. (2022). Sustainable Local Development: Consolidated Framework for Cross-Sectoral Cooperation via a Systematic Approach. *Sustainability*, 14(11), 6601-6611. doi: 10.3390/su14116601
- Martin, S. J., & Clapp, J. (2015). Finance for Agriculture or Agriculture for Finance? *Journal of Agrarian Change*, 15(4), 549-559. doi: 10.1111/joac.12110
- Marwanto, S., & Pangestu, F. (2021). Food Estate Program in Central Kalimantan Province as An Integrated and Sustainable Solution for Food Security in Indonesia. *IOP Conference Series: Earth and Environmental Science*, 794(1), 012068-012076. doi: 10.1088/1755-1315/794/1/012068
- Meemken, E. M., & Bellemare, M. F. (2020). Smallholder Farmers and Contract Farming in Developing Countries. *Proceedings of the National Academy of Sciences*, 117(1), 259-264. doi: 10.1073/pnas.1909501116
- Mellor, J. W. (2017). *Agricultural Development and Economic Transformation: Promoting Growth with Poverty Reduction*. Palgrave Studies in Agricultural Economics and Food Policy
- Ndlovu, W., Mwale, M., & Zuwarimwe, J. (2021). Challenges and Critical Success Factors for Rural Agrarian Reforms in Limpopo Province, South Africa. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 7(2), 191-206. doi: 10.18196/agraris.v7i2.11272
- Nin-Pratt, A. (2016). *Inputs, Productivity and Agricultural Growth in Sub-Saharan Africa*. Conference Paper. Springer Proceedings in Business and Economics
- Ortmann, G. F., & King, R. P. (2007). Agricultural Cooperatives I: History, Theory and Problems. *Agrekon*, 46(1), 18-46. doi: 10.1080/03031853.2007.9523760
- Osmani, M., Kolaj, R., Borisov, P., & Arabska, E. (2022). Why Agricultural Policies Fail and Two Cases of Policy Failures in Albania. *Agricultural and Resource Economics: International Scientific e-Journal*, 8(2), 86-104. doi: 10.51599/are.2022.08.02.05
- Ostrom, E. (2009). *Understanding Institutional Diversity*. Princeton University Press
- Ostrom, E. (2019). Institutional Rational Choice: An Assessment Of The Institutional Analysis And Development Framework. *Theories of the Policy Process, Second Edition*. Routledge

- Otsuka, K., Nakano, Y., & Takahashi, K. (2016). Contract Farming in Developed and Developing Countries. *Annual Review of Resource Economics*, 8(1), 353–376. doi: 10.1146/annurev-resource-100815-095459
- Pratiwi, D., Baga, L. M., & Yusalina, Y. (2021). The Relations of Internal and External Factors with Women Farmers' Participation in Rice Farming Activities. *Caraka Tani: Journal of Sustainable Agriculture*, 36(2), 238-241. doi: 10.20961/carakatani.v36i2.43729
- Proudfoot, K. (2023). Inductive/Deductive Hybrid Thematic Analysis in Mixed Methods Research. *Journal of Mixed Methods Research*, 17(3), 308–326. doi: 10.1177/15586898221126816
- Raitzer, D., Wong, L. C. Y., & Samson, J. N. (2015). Myanmar's Agriculture Sector: Unlocking the Potential for Inclusive Growth. *Asian Development Bank Economics Working Paper Series*, 470
- Rakuasa, H., & Latue, P. C. (2023). Spatial Planning and Policy Study of Food Estate Development on Peatland in Pulang Pisau and Kapuas Districts, Kalimantan Tengah, Indonesia. *Nusantara Journal of Behavioral and Social Sciences*, 2(2), 49–54. doi: 10.47679/202329
- Reimer, A., Doll, J. E., Boring, T. J., & Zimnicki, T. (2023). Scaling Up Conservation Agriculture: An Exploration of Challenges and Opportunities Through A Stakeholder Engagement Process. *Journal of Environmental Quality*, 52(3), 465–475. doi: 10.1002/jeq2.20317
- Rusastra, I. W., Sumaryanto, N., & Simatupang, P. (2016). Agricultural Development Policy Strategies for Indonesia : Enhancing the Contribution of Agriculture to Poverty Reduction and Food Security. *Forum Penelitian Agro Ekonomi*, 23(2), 84. doi: 10.21082/fae.v23n2.2005.84-101
- Saptana, Sativa, M., & Ar-Rozy, A. M. (2023). Transformation of the Governance of the Farmer Groups Association towards Farmer Corporation in The Shalot Area of Solok Regency, Indonesia. *E3S Web of Conferences*, 444(1), 02016-02021. doi: 10.1051/e3sconf/202344402016
- Schut, M., Klerkx, L., Sartas, M., Lamers, D., Campbell, M. M., Ogbonna, I., Kaushik, P., Atta-Krah, K., & Leeuwis, C. (2016). Innovation Platforms: Experiences with Their Institutional Embedding in Agricultural Research for Development. *Experimental Agriculture*, 52(4), 537–561. doi: 10.1017/S001447971500023X
- Sheingate, A. D. (2021). The Rise of the Agricultural Welfare State: Institutions and Interest Group Power in the United States, France, and Japan. *The Rise of the Agricultural Welfare State*. Princeton University Press
- Shirley, M. M. (2005). Institutions and Development. *Handbook of new institutional economics*. Retrieved from https://link.springer.com/chapter/10.1007/0-387-25092-1_25
- Sidibé, A., Totin, E., Thompson-Hall, M., Traoré, O. T., Sibiry Traoré, P. C., & Olabisi, L. S. (2018). Multi-Scale Governance in Agriculture Systems: Interplay Between National and Local Institutions Around the Production Dimension of Food Security in Mali. *NJAS: Wageningen Journal of Life Sciences*, 84(1), 94–102. doi: 10.1016/j.njas.2017.09.001
- Sihombing, F. N., Supriana, T., & Ayu, S. F. (2020). Identifying the Factors Contributing to the Volume of Coffee Export from North Sumatra to the

- United States, Malaysia and Japan. *Caraka Tani: Journal of Sustainable Agriculture*, 36(1), 83-97. doi: 10.20961/carakatani.v36i1.43357
- Slangen, L. H. G. (2001). *Sustainable agriculture: getting the institutions right*. Sustainable Agriculture in Central and Eastern European Countries (CEESA). Discussion Paper
- Sudaryanto, T., Purba, H. J., Rachmawati, R. R., Erwidodo, Dermoredjo, S. K., Yusuf, E. S., Nuryantono, N., Pasaribu, S. H., Amalia, S., & Amin, M. (2021). Three Decades of Agricultural and Rural Transformation in Indonesia. *IOP Conference Series: Earth and Environmental Science*, 892(1), 012056-012063. doi: 10.1088/1755-1315/892/1/012056
- Swedberg, R. (2020). *Exploratory Research*. Cambridge University Press
- Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic Analysis. *The SAGE Handbook of Qualitative Research in Psychology*, 2(25), 17-37. doi: 10.4135/9781526405555.n2
- Totin, E., Segnon, A. C., Schut, M., Affognon, H., Zougmore, R. B., Rosenstock, T., & Thornton, P. K. (2018). Institutional Perspectives of Climate-Smart Agriculture: A Systematic Literature Review. *Sustainability*, 10(6), 1990-1998. doi: 10.3390/su10061990
- Vahoniya, D. R., Vahoniya, N. D., & Halpati, J. R. (2022). Farmer Producer Organisation (FPO): A Conceptual Study about Farmer Producer Company (FPC). *Asian Journal of Agricultural Extension, Economics & Sociology*, 1(1) 1185-1197. doi: 10.9734/ajaees/2022/v40i101676
- Velten, S., Leventon, J., Jager, N., & Newig, J. (2015). What Is Sustainable Agriculture? A Systematic Review. *Sustainability*, 7(6), 7833-7865. doi: 10.3390/su7067833
- Vermeulen, S. J., Dinesh, D., Howden, S. M., Cramer, L., & Thornton, P. K. (2018). Transformation in Practice: A Review of Empirical Cases of Transformational Adaptation in Agriculture Under Climate Change. *Frontiers in Sustainable Food Systems*, 2(1), 1-17. doi: 10.3389/fsufs.2018.00065