Unpacking Power Relations: Stakeholder Dynamics and the Future of Organic Farming in Bogor Regency, Indonesia

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Abstract

This paper explores how organic farming unfolds in Bogor Regency, Indonesia, by looking closely at the power dynamics that shape its meaning, practices, and governance. Rather than treating organic farming as a fixed technical system, we approach it as a contested space where farmers, state agencies, NGOs, certification bodies, and private actors bring different values, interests, and forms of authority. Using a combination of stakeholder power analysis (SPA), political ecology, and food regime theory, the research draws on in-depth interviews and focus group discussions in two villages with contrasting institutional landscapes. We find that key barriers, such as high certification costs, limited market support, and fragmented policy implementation, are not simply technical problems but reflect deeper struggles over who gets to define sustainability. In response, smallholder farmers and civil society actors are creating grassroots innovations, including peer-to-peer mentoring systems and participatory guarantee schemes, that reclaim agency from top-down structures. Still, institutional silos and the lack of meaningful coordination continue to undermine inclusive progress. Our findings call for stronger connections across institutional boundaries. We argue that building trust-based spaces of dialogue between certification agencies, advisory services, and farmer networks is essential not only to make organic farming more viable, but also to ensure that it reflects the lived realities and aspirations of those who practice it. By foregrounding local knowledge and ethical commitments, this study contributes to broader conversations on agroecological transitions and more just food systems.

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Introduction

The development of organic farming in Indonesia, particularly in Bogor Regency, faces significant challenges despite its considerable potential. Core issues include agricultural sustainability, complex power dynamics among stakeholders, and the state's role in shaping policy directions. Organic farming embodies more than technical practices; it reflects deeper socio-political, cultural, and ecological struggles. As criticism grows regarding the negative impacts of conventional farming practices on ecosystems and public health, it becomes crucial to explore alternative agricultural models such as organic farming, examining how these are developed, contested, and institutionalized locally. Although government initiatives have been introduced to support organic farming, their implementation and coordination among actors remain inadequate.

The study of power relations in organic farming systems is essential because agriculture is never merely a technical or ecological activity; it is also a field of negotiation, contestation, and regulation of competing interests, values, and knowledges. In the Global South, this complexity is heightened by the dominance of international standards and certification regimes that are often developed without sufficient attention to local realities. These external frameworks frequently determine who is recognized as a legitimate producer, what counts as organic, and how benefits from organic markets are distributed. As Edelman (2005) and Gliessman (2015) argue, the sustainability of farming systems cannot be separated from the structures of power that govern access, recognition, and authority. A power-sensitive perspective is therefore crucial for revealing how state agencies, markets, and community actors interact, often unequally, in shaping pathways toward a more just and inclusive food system.

Organic farming is strategically important for sustainable development, as it reduces dependency on chemical inputs, preserves biodiversity, and enhances soil and food quality (Gamage et al., 2023). Yet, structural barriers, particularly inequalities in access to resources, technology, and markets, often disadvantage smallholder farmers. High production costs and complicated certification processes frequently exclude these farmers from fully participating in organic markets (David & Alkausar, 2023).

In Bogor Regency, weak institutional support from local governments further intensifies these inequalities. Policies predominantly favour conventional agriculture, providing limited incentives for organic farmers. Additionally, underdeveloped local markets create structural barriers, leading to the positioning of organic products as premium commodities. This market positioning inadvertently limits access for low-income consumers and contributes to food inequality. Moreover, costly and bureaucratic formal certification processes have become mechanisms of institutional exclusion, contradicting principles of justice and sustainability in agriculture (Adil, 2023).

This study critically analyses power relations among stakeholders involved in organic farming in Bogor. Utilizing SPA, it investigates how the positions, interests, and influences of key actors, including farmers, government institutions, certification bodies, non-governmental organization (NGOs), and the private sector, shape the organic farming landscape. Additionally, the research identifies local spaces of innovation and resistance against market domination and bureaucratic practices that often fail to recognize farmers' social contexts. Employing a qualitative approach, the study aims to deepen understanding of structural barriers and identify potential avenues for transforming the organic farming system toward fairness and sustainability (Mayers, 2005).

It also explores how these actor dynamics intersect with broader global forces that influence how sustainability, legitimacy, and justice are framed and operationalised within organic agriculture. Using political ecology, food regime theory, and SPA, the analysis focuses on the extent to which formal and informal power either reinforce or challenge these ideals.

Theoretically, this study aligns with the tradition of critical agricultural sociology, viewing farming as a

contested social-political arena marked by conflicts, negotiations, and power reproduction. By integrating political ecology, food regime theory, and SPA, the research explores how local dynamics of organic farming in Bogor intersect with global food system structures. These frameworks collectively provide insights into the market co-optation of sustainability principles, inequalities within certification processes, and grassroots resistance driven by solidarity and local knowledge.

Political ecology highlights the interconnection between agricultural policies and power dynamics among global, local, and institutional actors. food regime theory contextualizes organic farming within neoliberal market dynamics, illustrating how farmers are often constrained by unfair market standards. SPA complements these perspectives by sharply delineating formal and informal relationships among stakeholders, explaining why sustainability initiatives frequently fail at the grassroots and how social innovations emerge from the bottom up.

Thus, the study contributes significantly to theoretical debates in agricultural sociology, particularly regarding food sovereignty, food justice, and alternative governance models. It argues that establishing a sustainable and inclusive food system requires recognizing inherent power dynamics and shifting away from technocratic governance toward community-driven, participatory, and context-sensitive approaches. Ultimately, the research advocates for governance strategies that empower local actors, promoting fairness and sustainability in Bogor's organic agriculture.

Theoretical Framework: Unpacking Organic Farming Dynamics through Power, Knowledge, and Resistance

This literature review maps scholarly debates on organic farming, power relations, and agri-food governance, particularly within political ecology, food regime theory, and SPA. Drawing on literature from both the Global North and South, it highlights how structural inequality, certification regimes, and market integration shape the trajectory of organic agriculture. This framing provides the basis for identifying the research gap addressed in this paper: how multi-level power relations intersect with local innovations in Indonesia's organic sector, particularly in peri-urban contexts such as Bogor Regency.

Political Ecology: Understanding Power in Organic Farming

Political ecology provides a lens to understand how organic farming systems are embedded in power relations. In Indonesia, small farmers, certification bodies, government agencies, and private sector actors often have divergent interests and operate within asymmetrical resource structures. Certification regimes governed by non-state actors often exclude local knowledge and reinforce global power imbalances (Bartley, 2011), an issue central to food justice discourse, which calls for equitable access and control over food production and distribution (Holt-Giménez & Wang, 2011). Political ecology also emphasizes that environmental and agricultural systems are arenas of continuous negotiation and contestation over resources, legitimacy, and knowledge (Robbins, 2004). In contexts like Indonesia, these dynamics underline the importance of decentralizing power and supporting food sovereignty as farmers are often caught between global market pressures and local needs.

Food Regime Theory: Market Co-optation and the Erosion of Organic Values

Food regime theory (Friedmann & McMichael, 1989) situates organic farming within broader global power struggles. Initially a grassroots alternative to industrial agriculture, organic farming has become increasingly market-driven, diluting its principles of social justice and food sovereignty (Guthman, 2004). In Indonesia, the adoption of international certification standards often overlooks local social structures, making organic farming exclusive and less accessible for smallholders. The conventionalisation of organic farming favours larger producers who can meet stringent standards, raising concerns about the erosion of food sovereignty (Patel, 2009). Food regime scholars note that market absorption of radical practices risks depoliticizing

transformative movements (McMichael, 2009).

Stakeholder Dynamics and Institutional Roles

SPA illuminates the web of relationships among government agencies, certification bodies, NGOs, market actors, and farmers. In this study, private sector refers to actors across the value chain, including organic input suppliers, aggregators, traders, health food retailers, digital platforms, and SMEs in both formal and informal markets. Their motivations vary: some prioritize profit and market expansion, while others emphasize sustainability, fairness, and ethical consumerism. Civil society groups, including NGOs and farmer collectives, mediate between farmers, policy, and markets, upholding agroecology and food sovereignty despite varied approaches. Despite holding limited formal authority, NGOs and farmer organizations often advocate for alternative certification models like Participatory Guarantee Systems (PGS), which emphasize trust, community values, and local knowledge (Glaros et al., 2022).

Knowledge, Epistemic Justice, and Resistance

Building on political ecology and food regime theory, this study draws on the concept of epistemic injustice to examine how systems of knowledge production marginalize farmers' experiential and indigenous knowledge (Egelyng et al., 2010). Market-driven certification often privileges technical standards aligned with trade requirements, undervaluing local ecological knowledge (Guthman, 2004). SPA helps reveal how actors with formal authority, such as certification bodies and state agencies, reinforce knowledge hierarchies, limiting farmers' influence over sustainability standards. In response, NGOs and farmer organizations promote alternative models like PGS, which embed social trust and shared values into certification processes (Glaros et al., 2022). Resistance to dominant certification regimes often emerges as locally driven innovations, which Robbins (2004) describes as negotiated practices within constrained systems, while McMichael (2009) views these as reclaiming organic farming's original ethos of justice and autonomy.

Towards an Integrative Analytical Framework

This study integrates political ecology, food regime theory, and SPA to capture dynamics from global structures to local practices. Political ecology illuminates environmental governance and agrarian conflict; food regime theory situates these within global market transformations; SPA maps the positions, interests, and strategies of actors. This combination enables a multi-scalar analysis of how power operates materially, institutionally, and symbolically. While existing research offers valuable insights into organic governance, few studies link multi-level power relations with local innovation in peri-urban Indonesia. This study addresses the research gap on how multi-level power intersects with local innovation in Indonesia's organic farming, particularly in peri-urban Bogor, offering a grounded perspective on transformative food system change.

Methodology

Research Location and Timeframe

This study was conducted over five months, from May to September 2023, in Bogor Regency, West Java, Indonesia (see Figure 1). Bogor was chosen for its strategic geographical location linking agricultural production areas to urban consumption centres, such as Jakarta and Depok. Historically, Bogor has played a significant role in the development of agricultural science and policy, with institutions like the IPB University contributing significantly to agricultural innovations. Additionally, Bogor hosts various civil society organizations (NGOs) that support sustainable agriculture initiatives, making it a rich site for studying power dynamics in organic farming systems.

This research was conducted in two main villages that serve as centres for organic farming development in Bogor Regency: Tugu Selatan Village in Cisarua Subdistrict and Ciaruteun Ilir Village in Cibungbulang Subdistrict. These sites were purposively selected due to their active involvement in community-based organic farming

initiatives and participation in multi-stakeholder collaborations.

The fieldwork was preceded by preparatory desk research and carried out over a five-month period. It was followed by analysis and reporting activities. Table 1 outlines the full time-line of research activities, indicating the sequencing of preliminary work, field data collection, and subsequent analysis.

Table 1. Timeline of Research Activities

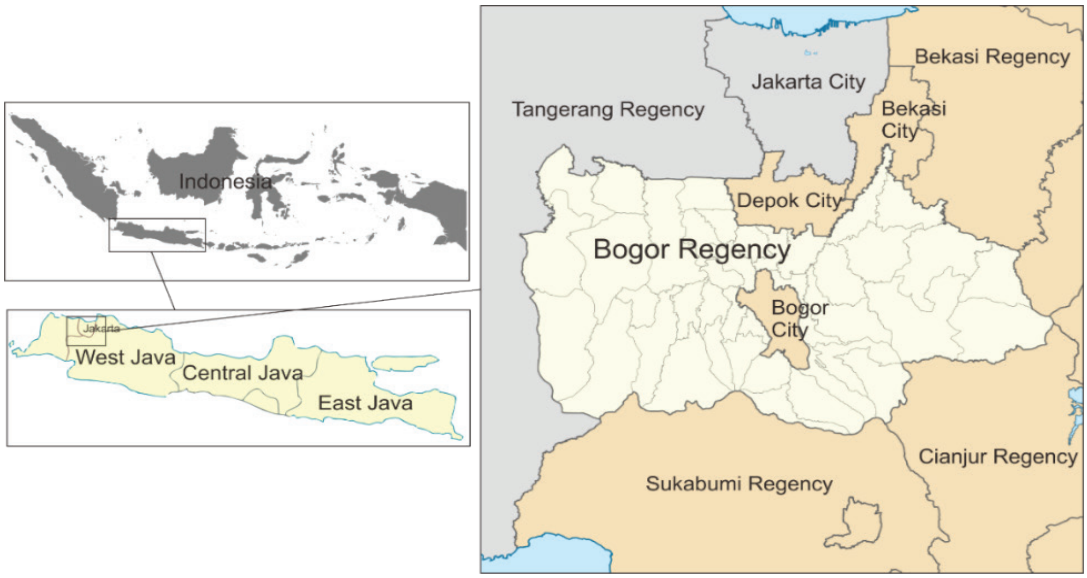
Period	Activity	Notes
Jan–Mar 2023	Preliminary observation and document review	Desk-based preparatory work
May–Sept 2023	Fieldwork: In-depth interviews, observations, and FGDs	Core field data collection
Oct–Nov 2023	Data analysis and triangulation	Post-fieldwork phase
Dec 2023	Preparation of findings and manuscript writing	Final reporting stage

In both villages, key informants include farmers, cooperative leaders, local government officials, extension workers, and NGO representatives. Data collection was carried out through in-depth interviews, field observations, and stakeholder mapping exercises, including focus group discussions (FGDs) which later informed visual diagrams of stakeholder dynamics.

Research Design

This study uses a qualitative approach with an exploratory and interpretive case study design, aiming to understand the power dynamics in the development of organic farming in Bogor, Indonesia. This approach was chosen because it allows for an in-depth understanding of the perspectives of key actors in the organic farming system, as well as the interactions and conflicts of interest that occur among them. Through this approach, the researcher can explore how social, political, and economic factors interact to shape the power structure within local organic farming.

Figure 1. Maps of research location in Bogor Regency (West Java)



This study employs a qualitative approach guided by three analytical frameworks, SPA, political ecology, and food regime theory, as elaborated in the theoretical section. During the data analysis phase, SPA is used to map the positions and power relations among actors within the organic farming system; political ecology offers insights into agrarian conflicts and access to resources at the local level; and food regime theory provides a lens to situate these local dynamics within broader global food structures. The integration of these frameworks enables a multi-scalar analysis that links global structures with local practices, in line with the

study's objectives.

Data Collection Methods

For data collection, this study relies on three main techniques. In-depth interviews were conducted with 31 informants from various key actor backgrounds, including organic farmers, certification bodies, government officials, NGOs, and market actors. These interviews followed a semi-structured format designed to explore power relations, barriers to market access, and forms of resistance and social innovation. Questions were formulated, for example, to examine farmers' experiences in accessing certification, government officials' roles in policy facilitation, or NGOs' strategies in advocating alternative governance models.

Next, FGDs were used to gather collective perspectives from farmer groups and other community actors. FGDs aimed to verify the findings from interviews and capture social dynamics that cannot be achieved through individual interviews. For instance, participants were asked to reflect on the role of cooperatives in reducing certification costs or to discuss collective strategies for strengthening community solidarity.

Additionally, participatory observation was carried out at organic farming sites, local markets, and training events to capture daily practices employed by farmers and other actors. This observation provided insight into how policies and programs were implemented on the ground and the challenges farmers faced in sustaining organic farming systems. This study acknowledges the absence of disaggregated gender data in both the selection of informants and the structuring of field instruments. While gender likely shapes experiences within the organic farming system, the research did not explicitly capture these dimensions, which remains a limitation of the current study and an agenda for future research.

Informant Selection

Informants were selected using a combination of purposive sampling and snowball sampling techniques. Purposive sampling was used to identify key actors based on their strategic roles in the organic farming system in Bogor. The main informants included 15 organic farmers (both independent and group members), 6 NGO staff, 4 government officials from local government agencies, 3 certification body representatives, and 3 private sector players in organic product distribution and marketing.

The research informants were purposively selected based on their relevance to the organic farming system in Bogor Regency, taking into account their positions, roles, and experiences in promoting sustainable agricultural transformation. The informants represent various categories of stakeholders who are directly or indirectly involved in organic farming practices. Specifically, this study engaged six main categories of informants: (1) organic farmers, both certified and uncertified; (2) local government officials responsible for agricultural and food policy; (3) certification bodies that conduct audits and assessments; (4) representatives of NGOs actively involved in farmer assistance; (5) private sector actors engaged in the distribution and marketing of organic products; and (6) academics from higher education institutions who serve as knowledge producers, policy consultants, and research partners in organic farming development programs.

The inclusion of academics was not initially planned as a primary category in the research design, but their presence emerged organically in the field as part of the local organic farming network. Although not directly involved in production or distribution, their insights enriched the understanding of the epistemic dimensions of the organic farming system and helped bridge the gap between local practices and broader policy discourses. Snowball sampling was then used to reach additional actors based on referrals from initial informants, particularly to capture voices from marginalized groups that are often not formally represented. This informant composition reflects a diversity of social positions and access to resources, which is crucial in analysing the power relations among actors.

Data Analysis Techniques

All interviews and FGDs were fully transcribed and then coded using a thematic approach. The coding process followed several stages: (1) organizing transcripts and field notes; (2) identifying recurring themes and categories that reflected stakeholder roles, power dynamics, and governance processes; and (3) triangulating these themes across interviews, FGDs, and observations to ensure consistency. The thematic codes were then synthesized using three analytical frameworks: SPA, political ecology, and food regime theory. These frameworks provided the structure for interpreting how power relations, institutional arrangements, and global–local interactions shape organic farming practices in Bogor Regency. The application of these thematic codes was then interpreted using the three analytical frameworks elaborated in the theoretical framework section, ensuring consistency between theoretical framing and empirical analysis.

To ensure methodological consistency, it is important to emphasize that this research is qualitative in orientation. The scoring of stakeholder capacity and motivation (on a scale of 1–5) was applied only as a semi-qualitative tool to facilitate structured comparison among actors. These scores were not derived from quantitative surveys but were collectively generated during FGDs and triangulated with interview data and relevant policy documents. In this way, the use of numerical values serves as an analytical aid to visualize relative positions and relationships, while the interpretation and meaning remain grounded in qualitative analysis.

Power and Capacity Scoring Method

The assessment of power and capacity in Tables 5 and 6 was carried out using a qualitative-informed scoring approach, based on the Stakeholder Power Analysis (SPA) framework. Two core dimensions were used to evaluate each actor: (1) motivation and capacity to engage meaningfully in the organic farming system, and (2) actual and potential power to influence policy direction, market practices, and inter-actor dynamics.

For Table 6, a 1-to-5 scale was employed to assess motivation and capacity. These scores were derived through thematic interpretation of qualitative data gathered from in-depth interviews and FGDs. Actors consistently described by multiple informants as having strong decision-making authority, resource control, or influence over public narratives received higher scores. Meanwhile, actors who were highly engaged on the ground but had limited access to formal decision-making spaces were scored lower. The scoring process was interpretive in nature, not statistical, and was co-produced during FGDs through deliberation among participants. These preliminary judgments were then validated through triangulation with interview data, field observations, and policy document reviews.

In contrast, Table 5 uses a relative ranking system rather than open-ended scoring. Each actor was assigned a value from 1 to 11, representing their relative position in terms of actual and potential power across the stakeholder landscape. Higher numbers indicate greater dominance or influence, while lower numbers signify marginal roles. For instance, an actor with a score of 11 is perceived to hold the most dominant role in shaping certification and market access, whereas a score of 1 reflects minimal capacity to influence the system.
This scoring method aims to reflect how actors are perceived and how they operate within the organic farming landscape. It does not seek statistical generalization but rather offers a structured interpretation of field-based insights. The approach draws conceptually from the SPA framework developed by Brock, Gaventa, and Cornwall (2001) and is informed by its practical adaptations in development studies by DFID, GIZ, and IIED.

This qualitative-informed scoring approach follows a tradition of participatory power mapping that has been widely used in applied stakeholder analysis, especially in contexts where statistical generalization is not feasible or not epistemologically appropriate (Mayers, 2005; Brock et al., 2001).

Visual Data Construction and Limitations

The visualizations presented in Figure 2 and Figure 3 were designed to heuristically and thematically illustrate the configuration of actors in the organic farming system within the research area. These representations were constructed based on synthesized findings from in-depth interviews, FGDs, and participant observations conducted during fieldwork. Figures 2 and 3 therefore represent social proximity and relational closeness, not geographical distance.

The visualizations integrate two main dimensions. First, the size of the circles reflects informants' perceptions of each actor's relative influence or contribution to the sustainability of organic farming practices. Actors with greater influence, whether in policy, technical support, or market access, are depicted with larger circles. Second, the spatial positioning or proximity between each actor's circle and the "organic farmers" circle indicates relational closeness, both in terms of working relationships (interaction intensity, program support) and affective ties (trust and solidarity).

It is important to note that these visualizations do not aim to classify stakeholder relationships into categories such as dominance, conflict, or subordination. The diagrams are not quantitative or relational network analyses; rather, they are interpretive tools intended to support a contextual understanding of the power landscape. The construction of these visualizations involved several interpretive stages: first, thematic data from interviews and FGDs were coded to extract information related to perceptions of roles and inter-actor relationships; second, the coding results were consolidated through team discussions to avoid individual bias; third, initial drafts of the visualizations were internally tested against field narratives to ensure coherence.

The limitations of this visual approach are also acknowledged. Visualizations necessarily simplify complex realities, meaning that nuances of power and relationships can be lost if taken in isolation. They are therefore best read in conjunction with the accompanying qualitative narratives, which provide the depth and detail needed to avoid over-interpretation or oversimplification. The use of different colours in the diagrams is solely to distinguish institutions visually and does not carry interpretive meaning. Despite these limitations, the visualizations remain a valuable heuristic device, helping to highlight general patterns of power distribution and relational dynamics in an accessible way.

By incorporating these visualizations as part of the analysis, this study seeks to enrich readers' understanding of power dynamics in organic farming systems not only through textual narrative but also through a spatial and symbolic perspective that is more intuitive and grounded.

Researcher Positionality and Reflexivity

As researchers affiliated with a national research institution and with prior experience in sustainable agriculture programs, we occupied a position that straddled both insider and outsider roles during this study. On the one hand, our institutional background and professional networks facilitated access to policy spaces and key stakeholders, particularly among government agencies, NGOs, and certification bodies. On the other hand, these same connections risked introducing bias, especially in situations where familiarity might lead informants to respond in ways that align with perceived expectations.

To address this dual positionality, we adopted a reflexive approach throughout the research process. We maintained detailed field notes, triangulated accounts across informants, and paid close attention to moments when our perceived roles influenced the dynamics of data collection. For instance, during several FGDs, we noted tendencies among participants to provide favourable or "expected" answers. These were followed up with individual interviews to explore underlying perspectives more deeply. Such reflexivity was essential not only for maintaining analytical integrity, but also for acknowledging that knowledge production is inevitably shaped by social proximity, power relations, and the researchers' own subjectivities.

Data Validity

To ensure the validity and reliability of the research findings, this study uses methodological and data source triangulation. Triangulation is done by comparing results from interviews, FGDs, and observations, as well as confirming findings with key informants to increase the credibility of the research. An audit trail is also applied to ensure transparency and traceability throughout the research process, from data collection to analysis. These steps aim to produce findings that are accountable and provide an accurate representation of the power dynamics in the development of organic farming in Bogor Regency.

Findings and Discussion

Stakeholder Roles and Perspectives in Organic Farming

Government agencies, certification bodies, NGOs, the private sector, and academic institutions are embedded in an unequal socio-political configuration. This section applies SPA, political ecology, and food justice to examine their roles.

Limited collaboration among these actors reflects not just competing interests, but also deeper systemic disjunctions. According to Luhmann's systems theory, institutional domains such as government, civil society, academia, and markets operate with distinct communicative logics, making coordination inherently difficult.

Farmers, though central to production, remain structurally vulnerable. Many began organic practices around 2015, motivated by health and community concerns. Despite applying agroecological principles, they face high certification costs and bureaucratic hurdles. A farmer from Cibungbulang stated, "We are actually very confident about organic farming, but the certification costs are extremely high. Not to mention the unstable market prices..."

Government agencies, despite their sustainability mandate, focus mostly on training and fertilizer distribution. Structural issues such as certification support, market access, and coherent long-term policy remain unaddressed. Weak inter-agency coordination further limits their integrative capacity. These stakeholder perspectives are summarized below.

Table 2. Stakeholders' Perspectives on Key Issues in the Development of Organic Farming in Bogor Regency.

Stakeholder	Lack of Government Support	Underdeveloped Organic Market	High Certification Costs	Production Challenges (Climate, Labor, Pests)
Organic Farmers	Used to working without government support; 'Green Revolution' dominates	Limited access to digital marketing; potential to develop with training	Financially burdensome; financial planning is needed for the sustainability of certification	Climate shifts; addressed by adjusting crops and labor capacity
Market Actors (middlemen, investors, buyers)	Government should pay more attention to organic agriculture	Market has potential, can be expanded with consumer education	Costs could be passed on to consumers, but may raise prices	Need to improve farmers' individual and group capacity
Farmer Organizations	Act as independent support structures for farmers	Markets can grow in both modern and traditional sectors	Can be minimized via collective financing	Continuous knowledge-sharing and coordination needed
Extension Officers	Bridge the gap between low state support and farmer interest	Consistently help farmers produce high-quality goods	Let farmers choose between organic and conventional paths	Provide innovations for climate adaptation and mitigation

Stakeholder	Lack of Government Support	Underdeveloped Organic Market	High Certification Costs	Production Challenges (Climate, Labor, Pests)
Academics	Government can't work alone; requires multi-stakeholder support	Prices impact consumer choices; need for social justice principle	Organic farming must promote social justice so all can access healthy food	Promote adaptive, holistic scientific approach
Local Government	Prioritises administratively feasible conventional programs	Clusters for production mapped, but not marketing potential	Assistance limited to program participants	Climate issues recognised, but not yet integrated into organic efforts
Certification Bodies	Government subsidies exist, but limited	Growing certifications reflect market growth	Initial fees supported, but long-term support lacking	Expect collaborative solutions among stakeholders
Development Partners (NGOs)	Serious state support only emerging in last five years	Consumer education on health and environment could increase demand	Burden on farmers who must manage both production and finance	Long-standing assistance with evolving knowledge provided

Civil society organizations such as the Indonesian Organic Alliance and Bina Sarana Bakti act as brokers, linking farmers to technical support, markets, and alternative certification such as PGS. From a Food Justice lens (Holt-Giménez & Wang, 2011), these groups decentralize control over food production and support local sovereignty amid market pressures.

The private sector plays a dual role. Distributors and retailers drive markets but often weaken farmers' bargaining power. SPA reveals diverse motivations. Some actors prioritize profits, while others emphasize sustainability and ethical consumerism. These differences shape how each subgroup interacts with farmers, certifiers, and policymakers.

Analysis of perspectives in Table 2 shows that disparities in information, resources, and legitimacy shape stakeholder views. Academics emphasize justice and equity, while extension agents focus on climate-related technical issues. From a political ecology perspective, these are manifestations of deeper structural power differentials.

To clarify these dynamics, stakeholders are categorized by institutional type and functional role.

Table 3 highlights how civil society and academic actors often bridge gaps between state and market institutions. Comparative cases deepen this analysis. While Tugu Selatan relies on formal certification and NGO facilitation, Ciaruteun Ilir follows grassroots experimentation and local collaboration. These configurations reflect varying actor relationships, innovation pathways, and external support.

Table 3. Institutional Typology of Key Stakeholders in Organic Farming in Bogor Regency.

No	Institution	Category	Key Roles and Responsibilities in Organic Agriculture	Ideological Stance on Certification and Markets	Research or Mentoring Involvement
1	Me Fresh	Organic Farming & Community Education Hub (Private Sector)	Invests in organic product development, supports supply chains, provides market access and training, and promotes sustainable farming via community collaboration.	Supports formal certification as a market value-add but remains open to PGS for its flexibility and accessibility. Rejects the dominance of rigid certification regimes, instead prioritizing trust-based systems, collective responsibility, and community values. Critical of formal certification being costly and exclusionary to smallholders and prefers holistic approaches rooted in social and environmental justice.	Actively involved in research and capacity building by developing organic input alternatives, conducting field trials, and collaborating with universities to co-develop sustainable farming systems. They also train farmers on organic practices and certification standards, provide business mentoring, and facilitate market access through partnerships with NGOs, local governments, and digital platforms.
2	Saga Farm	Organic Sustainable Farming & Agro-Education Enterprise (Private Sector)			
3	Bina Sarana Bakti Foundation (Agatho)	Organic Farming & EcoEducation Foundation (Private Sector)			
4	PT Kapol Antar Nusa	Organic Agribusiness Company (Private Sector)			
5	Inofice	Organic Certification Body	Ensuring compliance with standards, guiding farmers through certification, and building consumer trust, which helps expand market access and promote sustainable practices.	Inofice views certification as essential for market credibility, particularly in horticultural products, but adopts a pragmatic stance, emphasizing that certification must align with business planning and market readiness. While acknowledging its necessity, they criticize the rigidity of formal schemes and advocate for more educational, community-based approaches that integrate sustainability values and collective awareness.	Inofice has been actively involved in farmer mentoring since 2015 through the '1000 Organic Villages' program, collaborating with various government bodies and NGOs. Their activities include training on certification, land inspection, marketing, and administrative preparation. However, the mentoring is program-dependent and not continuous, with long-term success relying heavily on sustained support.

No	Institution	Category	Key Roles and Responsibilities in Organic Agriculture	Ideological Stance on Certification and Markets	Research or Mentoring Involvement
6	IPB University	Academics	Conducting research, providing education and training, developing innovative organic farming techniques, supporting policy development to advance sustainable agriculture, and assisting in marketing organic products to retail outlets to enhance market reach and consumer access.	Sees PGS as an innovative and fair alternative; emphasizes policy support for smallholders; critiques top-down approaches in national certification systems.	Leads research, training, and policy advocacy; develops organic farming innovations and supports market linkages between farmers and consumers.
7	Agribusiness and Technology Park (ATP), IPB University	Innovation & Training Hub		Recognizes the importance of standardization for market access but is aware of the exclusionary effects of high costs. Supports institutional innovations like PGS as a middle-ground solution.	Involved in farmer training or extension
8	Indonesian Organic Alliance (AOI)	Organic Farming Advocacy & Capacity-Building (Civil Society Organizations)	Promoting awareness, providing farmer training and capacity building, supporting market access, and advocating for organic-friendly policies at the national and local levels.	AOI supports certification as a tool for consumer trust and market access but promotes an inclusive, participatory, and community-based approach. They encourage farmers' freedom to choose certification models, including PGS, and emphasize that organic farming must be rooted in values, not only market demands. AOI rejects global market-driven uniform standards, advocates for decentralized systems, and pushes for regulatory frameworks that uphold farmer rights and support smallholder inclusion.	AOI is actively involved in farmer training, education, and the development of participatory organic farming systems. While its academic research activities are still emerging, AOI has initiated collaborations with research centers and proposed a national roadmap for organic agriculture R&D. It plays a bridging role between farmers, markets, government, and academia through its value-driven and community-based approach.
9	Bogor Regency Development Planning Office	Local Government	Providing training and technical assistance to farmers, offering subsidies or incentives for organic certification, promoting organic markets, and integrating organic practices into local agricultural policies and development plans.	Supports certification and is open to alternative systems like PGS but constrained by lack of legal framework and strong reliance on central regulations. Holds a technocratic and productivity-oriented view, with limited integration of local approaches.	Facilitates applied research and farmer surveys through partnerships with universities or NGOs; supports community-based pilot projects and farmer training as part of government programs.
10	Bogor Regency Agriculture Office	Local Government			
11	Bogor Regency Food Crops, Horticulture, and Plantations Office	Local Government			
12	Bogor Regency Livestock Office	Local Government			

No	Institution	Category	Key Roles and Responsibilities in Organic Agriculture	Ideological Stance on Certification and Markets	Research or Mentoring Involvement
13	Farmer	Independent Organic Farmers	The farmers play an active role in knowledge transfer and community learning through farmer groups, with support from academic institutions and buyers. They engage in collaborative knowledge exchange, market linkage development, and peer-led dissemination of organic practices, functioning both as a practitioner and a local champion in promoting sustainable agriculture.	The farmer supports formal certification as a strategic tool for quality assurance and market access, demonstrated by obtaining Inofice certification in 2018. However, he also values local practices and traditional norms, maintaining a strong orientation toward participatory systems and direct relationships with consumers. His marketing through local outlets and digital platforms reflects a hybrid approach that embraces formal certification while remaining grounded in community-based sustainability values.	Actively engaged in the Ministry of Agriculture's '1000 Organic Villages' program and supported by institutions such as Mercy USA, IPB, and Polbangtan Bogor. Participates in training, technical assistance, and community-based agricultural development. Also involved in pilot projects and knowledge transfer initiatives with academics and private sector actors to strengthen local organic practices.

Note: Some stakeholder entries are grouped under shared categories due to similar institutional typologies and roles in organic farming. Detailed descriptions are provided for representative cases to avoid redundancy.

Table 4. Comparative Profile of Organic Farming Governance in Tugu Selatan and Ciaruteun Ilir.

Aspect	Tugu Selatan	Ciaruteun Ilir
Subdistrict	Cisarua	Cibungbulang
Initiating Actors	NGO-led initiatives (e.g., AOI, Agatho)	Farmer-led initiatives (Kelompok Tani Jaya)
Certification Approach	Formal third-party certification (Indonesian Organic Standard, SNI)	Participatory Guarantee System (PGS)
Government Involvement	Active local government support through facilitation and program integration	Limited support; more reliant on civil society partnerships
Market Strategy	Regional distribution via certified organic network	Local marketing through community-based distribution and direct selling
Institutional Support	Strong institutional embedding, regular training and NGO accompaniment	More autonomous, flexible adaptation without structured institutional backing
Farmer Organization Type	Formal cooperative and NGO-supported farmer group	Informal but cohesive community group
Innovation Focus	Compliance with standards and market access	Agroecological innovation and social learning

Table 4 shows how institutional arrangements influence governance models. Power in Bogor's organic sector is shaped not only by formal mandates but also by access to networks, discourse, and legitimacy. Non-governmental organizations and farmers, despite limited formal power, mobilize relational strategies rooted in trust and solidarity to challenge the dominance of state and market institutions.

These findings lay the foundation for the next section, which explores how formal and informal authority interact to shape organic governance outcomes.

Power Dynamics and Governance Models

Power dynamics in Bogor Regency's organic farming system reflect significant asymmetry structured by both formal authority and informal influence. Government agencies and certification bodies possess institutional

power through their roles in policy-making and certification. However, these systems are often bureaucratic and poorly adapted to local contexts, marginalizing smallholder farmers. In contrast, farmer groups and NGOs, while lacking formal authority, hold high social legitimacy and strong local ties, enabling them to facilitate grassroots innovation and negotiation.

Stakeholder power analysis reveals that influence cannot be fully understood through institutional titles alone. Informal power, grounded in trust, solidarity, and shared values, often balances formal dominance. This is particularly visible in community-based governance, where authority is dispersed and shaped by negotiation. To visualize this, Figures 2 and 3 map the relative influence and relational proximity of stakeholders in Tugu Selatan and Ciaruteun Ilir. Actor roles are represented by circle size, while proximity to farmers reflects trust and interaction.

Figure 2. Scale of roles and proximity of organic farming actors to relevant stakeholders in Tugu Selatan Village.

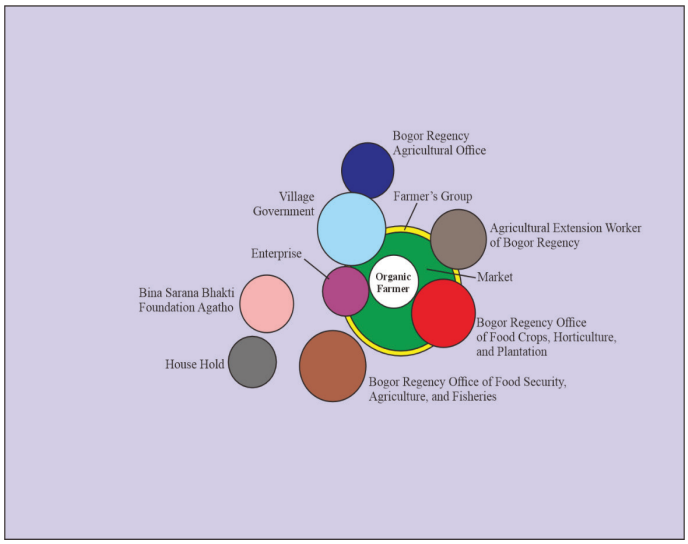
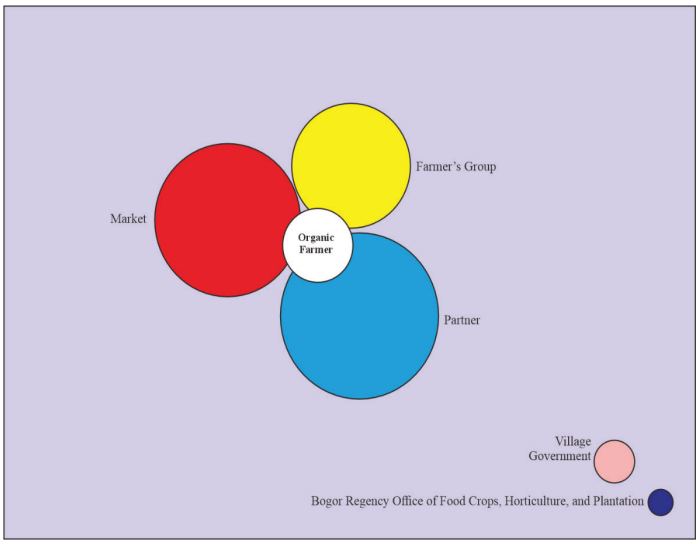


Figure 3. Scale of roles and proximity of organic farming actors to relevant stakeholders in Ciaruteun Ilir Village.



These visualizations show distinct patterns. In Tugu Selatan, local government engagement supports close farmer–government relations. In Ciaruteun Ilir, NGOs such as Mitra serve as key brokers in the absence of active state involvement. These contrasts underscore the spatial variability of power and the importance of intermediary actors.

Table 5 summarizes actor rankings derived from qualitative-informed scoring during FGDs, representing perceptions of actual and potential power across stakeholders.

Table 5. Actual and Potential Power Scores of Stakeholders in the Organic Farming System (SPA Matrix)

No	Stakeholder	Interests	Characteristics	Power Value	Potential Value
1	Farmers	Sustainable efforts and improving tools and production	Militants and independent, facing various problems	1	11
2	Market/Middleman/ Investor/Buyer/Trader	Obtaining quality products continuously and at stable prices	Unable to directly influence production capacities of farmers	3	1
3	Academics	Reputation as an exceptional sub-system of society	Indirect influence through workforce education	9	3
4	Farmer Organizations	Welfare of members and sustainable organizations	Militants and independent, facing various problems	8	6
5	Extension Workers	Increasing duties and institutional reputation	Acts as a bridge between farmers and stakeholders	2	2

No	Stakeholder	Interests	Characteristics	Power Value	Potential Value
6	Village Government	Welfare and health of the community, conservation, and environmental improvement	Social, cultural, and political legitimacy	10	9
7	Regional Government	Welfare and health of the community, conservation, and environmental improvement	Social, cultural, and political legitimacy; Has budget, policy maker	7	8
8	Central Government	Welfare and health of the community, conservation, and environmental improvement	Social, cultural, and political legitimacy; Has budget, policy maker	6	7
9	Certification Bodies	Business sustainability and institutional reputation	Degree of compliance with international standards	11	10
10	Development Partners (NGOs)	Self-actualization, financial sustainability, and institutional reputation	Works independently, as a class that is ready for change	4	5
11	Consumers	Obtaining good products at optimal prices	Needs even higher reliance on organic products	5	4

Certification bodies score highest in actual power (11) due to their formal authority, but this is shaped by national policy and global markets. Smallholder farmers, despite holding the highest potential power (11), have the lowest actual power (1), highlighting their structural marginalization. As one farmer from Saga Farm stated, "We're like chicks foraging alone. The government rarely steps in, especially to help with certification. It's just too expensive!"

Non-governmental organizations and farmer groups hold moderate formal power but demonstrate high transformative potential. They organize collective efforts and promote alternatives like PGS. AOI, for instance, has supported PGS and facilitated farmer–government dialogues. An AOI member shared, "PGS isn't just a system; it is a way of life that reflects our values. The government should support this."

Political ecology explains how the dominance of certification bodies centralizes epistemic and institutional authority while excluding local knowledge. The inability of farmers to shape certification standards constitutes epistemic injustice (Egelyng et al., 2010). PGS, grounded in community trust and local values, offers a challenge to these top-down hierarchies.

Swing actors like extension workers and village officials hold mid-level formal authority and strong grassroots legitimacy. They could bridge grassroots initiatives and policy systems, but their roles remain underutilized. A Bogor Agriculture Office representative noted, "PGS is good, but there is no legal basis yet. We are still waiting for regulations from the centre."

This configuration reflects broader agrarian trends, as revealed through participatory power mapping, in which formal authority is often held by institutions distant from production, while relational power stays rooted in local communities. Equitable governance must integrate these spheres. As Cadieux and Slocum (2015) argue, food justice requires not only access to resources but also a redistribution of decision-making power to historically marginalized actors.

Understanding how stakeholders translate their positions into strategic actions is critical for assessing systemic change. The next section explores these strategies, focusing on policy responses, grassroots adaptations, and the interaction between local agency and broader institutional frameworks.

Government Response and Strategic Adaptations

Faced with structural constraints and limited institutional support, stakeholders in Bogor Regency's organic farming system have developed various strategies to expand influence, contest dominant structures, and promote systemic transformation. These strategies are not merely technical but also political, seeking to reshape power dynamics and uphold the values of sustainability and justice.

Government agencies often rely on technocratic interventions such as training, fertiliser distribution, and production clustering. However, these programs fail to address deeper structural issues including certification access, market security, and policy coherence. A representative from the Agriculture Office stated, "PGS is good, but there is no legal basis yet. We are still waiting for regulations from the centre."

At the grassroots level, farmers build collective strength through cooperatives and community certification models like PGS. These systems serve not only as quality assurance mechanisms but also as platforms for shared learning and trust-building. As one facilitator explained, "In PGS, we not only check if organic fertilizer is used, but we also remind and learn together. There is a sense of trust that we do not find in formal certification."

To reduce dependency and enhance resilience, farmers also engage in crop diversification. They grow vegetables, rice, and herbs for both market and household consumption. One farmer from Leuwiliang noted, "We plant a variety because, besides selling, some are for our own consumption. So if market prices drop, we still eat healthily."

Farmer cooperatives improve market access through alliances with local markets, consumer communities, and digital platforms. These partnerships allow them to bypass large traders and promote branding centred on sustainability, fairness, and health.

Non-governmental organizations and development partners take a long-term mentoring approach that integrates technical training with political education. They help farmers understand their rights and build coalitions with academics and local authorities. One NGO representative described their advocacy work: "We push for the village to adopt a local regulation (Perdes) supporting organic farming so there is a legal umbrella that protects farmers from conflicting district-level policies."

Progressive village governments and agricultural extension workers serve as intermediaries by integrating organic farming into local planning processes such as Musrenbangdes. Despite limited budgets, they connect farming practices to food security and public health agendas.

Table 6. Stakeholders' Relationship to Key Issues and to Other Stakeholders in Organic Agriculture in Bogor Regency

No	Stakeholder	Impact of Key Issues on stakeholder	Capacity Score (1-5)	Motivation Score (1-5)	Confirm or Conflict with Other Stakeholders
1	Farmers	Exclusion from premium markets due to costly certification and insufficient institutional support.	5	2	-
2	Market Actors (middlemen, investors, buyers, traders)	Difficulty ensuring consistent supply and standards due to lack of infrastructure and institutional bridging.	3	1	-
3	Academics	Limited ability to influence public discourse and support policy change despite expertise.	5	2	-

4	Farmer Organizations	Strained capacity to assist members in accessing certification, markets, and government programs.	5	3	-
5	Extension Workers	Burdened with added responsibility to mediate gaps between farmers and higher-level institutions.	5	5	-
6	Village Government	Limited budgetary authority hampers ability to provide incentives or technical assistance.	5	2	-
7	Local Government	Resource and mandate gaps in providing sustained support to local organic transitions.	2	3	-
8	National Government	Policy inertia and low prioritization of organic farming at the national level.	5	2	-
9	Certification Bodies	Excessive reliance on international standards marginalizes local producers and creates entry	5	4	-
10	Development Partners (NGOs)	Funding limitations and fragmented programs sustained grassroots engagement.	5	5	-
11	Consumer Communities	Unstable supply and high prices reduce consumer confidence in organic products.	5	1	-

From a SPA perspective, Table 6 reveals disparities in capacity and motivation among actors. Farmers, cooperatives, and NGOs rely on informal power rooted in trust and legitimacy, while state institutions retain regulatory authority but have limited influence over values, norms, and affective dimensions of governance. This contrast reflects the political ecology framing, where farmers' strategies represent political demands for recognition, equity, and local autonomy. Rather than simply reacting to constraints, these actors actively shape norms and institutional arrangements. Their innovations are political interventions grounded in ethical commitments.

Such actions also align with Food Justice literature, which emphasizes the redistribution of both resources and decision-making power (Cadieux & Slocum, 2015). In Bogor, negotiation spaces emerge where formal and informal actors co-design governance systems. However, sustaining these spaces requires legal recognition for PGS and integration of grassroots initiatives into official food policies.

Through a combination of social innovation, political advocacy, and technical adaptation, stakeholders in Bogor are advancing transformative change. These efforts highlight that building a just food system depends on institutional experimentation, coalition-building, and bridging formal-informal divides.

The next section examines structural barriers that persist and the strategic relationship management approaches used by stakeholders to navigate them.

Structural Barriers and Relationship Management Strategies

The development of organic farming in Bogor Regency reflects not only a response to ecological and market failures, but also a form of social innovation rooted in solidarity, trust, and participation. Community-based initiatives such as Participatory Guarantee Systems (PGS) have addressed gaps left by formal certification mechanisms by offering localized quality assurance that emphasizes shared learning and collective value negotiation. As one facilitator noted, "In PGS, we not only check if organic fertilizer is used, but we also remind and learn together. There is a sense of trust that we do not find in formal certification."

However, sustaining these practices requires navigating structural barriers, including high certification costs, rigid international standards, limited state recognition of PGS, market dominance by large distributors, and fragmented agricultural policies. To respond, stakeholders in Bogor employ four relationship management strategies, synthesized through Stakeholder Power Analysis (SPA): collaboration, mitigating and enduring

pressure, capacity building, and monitoring or ignoring. These strategies are summarized in Table 7.

Table 7. Four Stakeholder Relationship Management Strategies in Organic Farming in Bogor Regency

No	Strategy	Stakeholder Type	Relation Characteristics	Applied Action
1	Collaboration	Stakeholders with high power and high motivation	Strategic alliances, strong commitment, mutual benefit	Long-term engagement, joint programs, co-management
2	Mitigate and Endure Pressure	Stakeholders with high power but low motivation	Domination tendencies, rigid standards, limited support	Negotiate minimum compliance, create alternative spaces, reduce dependency
3	Capacity Building and Engagement	Stakeholders with low power but high motivation	Supportive but institutionally weak, close to grassroots	Training, empowerment, participatory advocacy
4	Monitor or Ignore	Stakeholders with low power and low motivation	Minimal influence and limited engagement	Monitor passively, avoid unnecessary investment

To visualize the distribution of actors within these strategic categories, Table 8 maps stakeholders based on their relative power and potential. Stakeholders in the first quadrant (high power, high potential) such as NGOs, cooperatives, regional governments, and consumer communities, are key partners for long-term collaboration. The second quadrant (high power, low potential) includes village governments, requiring negotiation and selective engagement. In the third quadrant (low power, high potential), actors like academics and farmer organizations benefit most from capacity-building efforts. The fourth quadrant (low power, low potential) features certification bodies that resist grassroots innovation and are better approached with minimal investment or monitoring. While certification bodies are ranked highest in Table 5 for actual power due to their authority in granting formal legitimacy, they are categorized in Table 8 as low-potential actors. This reflects their limited openness to collaborative engagement and reluctance to accommodate grassroots innovations such as PGS. Thus, despite their formal dominance, their potential to contribute to inclusive governance remains constrained.

Table 8. Position of Stakeholders in the Four Relationship Management Strategy Matrix.

	High Potential	**Low Potential**
	1 Collaboration • Farmers • Market / Middleman / Investor / Buyer / Trader • Extension Workers • NGOs • Consumer Communities • Regional Government • Central Government	2 Mitigate and Endure Pressure Village Government
High Power		
Low Power	3 Capacity Building and Engagement • Academics • Farmer Organizations	4 Monitor or Ignore Certification Bodies

These strategies are not mutually exclusive and may operate concurrently depending on the issue or setting. From a political ecology perspective, such relationship management is not merely tactical but also political.

It reflects ongoing struggles to reclaim agency, redefine standards, and construct inclusive governance spaces within an uneven food system. By aligning action with power dynamics, grassroots actors can navigate institutional constraints and strengthen pathways toward more just and sustainable agri-food futures.

The following section explores the opportunities that have emerged from these practices, particularly in strengthening local organic markets and promoting a more inclusive and sustainable food system in Bogor Regency.

Opportunities for Developing Local Organic Market

Organic farming in Bogor Regency evolves amid tensions shaped by differing interests, resource disparities, and unequal power in defining standards and legitimacy. Formal certification systems pose a major barrier. Their high costs, technical rigidity, and bureaucratic complexity often exclude smallholders. As one farmer from Leuwisadeng explained, "If everyone has to follow official certification, small farmers like us could be pushed out. But we've been farming without chemicals for years."

Market dynamics exacerbate inequality. Although demand for organic produce grows, farmers often depend on dominant traders who control pricing and terms. Regulatory bodies hold authority but often lack awareness of farmers' lived conditions, reflecting a disconnect between policy and practice. Local governments also show ambivalence. While planning documents promote "healthy farming," budget support and concrete initiatives remain limited.

Despite these constraints, local negotiation spaces offer promising avenues. Extension officers and village governments act as key connectors, enabling dialogue between farmers and decision-makers. Some extension workers support PGS and farmer cooperatives independently. Non-governmental organizations and cooperatives build alliances across sectors, linking farmers with academics, media, and urban consumers. Rather than direct confrontation, these actors develop alternatives in production, distribution, and quality assurance.

From a political ecology perspective, these are political struggles over space, knowledge, and authority. The term "organic" itself becomes contested, shaped by divergent values and actors. Negotiation arenas are thus essential for forming inclusive, context-sensitive agreements. However, they require ongoing collective action, policy experimentation, and engagement between formal and informal actors.

Bogor's organic farming future depends on how well these negotiation spaces are expanded. Addressing the challenges is not merely technical, but political. Stakeholders must collaborate to turn tensions into innovation, strengthen farmer autonomy, and embed local knowledge into a fair and sustainable food system. These dynamics form the foundation for the concluding synthesis.

Conclusion and Policy Recommendations

Conclusion

Organic farming in Bogor Regency is shaped by a dynamic interplay of structural constraints, institutional authority, and grassroots agency. Certification regimes and market forces centralize control, but farmers, cooperatives, and NGOs respond through relational power, local knowledge, and community-driven innovation. Through the lenses of political ecology, food regime theory, and SPA, this study reveals that organic farming is not a neutral process but a negotiated space where sustainability, legitimacy, and justice are constantly contested and redefined.

Certification bodies, often aligned with global standards, dominate the institutional definition of "organic," sidelining the experiential knowledge of small farmers. Neoliberal market mechanisms further commodify organic

farming, shifting it from a socially embedded practice into a market-oriented activity. However, smallholders are not passive recipients of these trends. They respond with creative resistance by adopting PGS, forming cooperatives, and using digital networks to reach consumers. These efforts reflect political claims for food sovereignty and justice.

From the perspective of food justice, such grassroots strategies represent a broader demand for fairness in how food is produced, marketed, and governed. Theoretically, this study contributes to debates in political ecology and critical agrarian studies by showing how local organic farming systems are entangled with overlapping power structures and embedded in global food regimes. The integration of SPA, political ecology, and food regime theory highlights how institutional exclusion and epistemic injustice are not accidental, but systemic features of the prevailing agri-food paradigm.

Empirically, the findings demonstrate that smallholder farmers are active agents of change. Their collective strategies challenge dominant governance structures and reassert the value of local agency. These bottom-up innovations highlight the importance of governance frameworks that are pluralistic, reflective, and grounded in socio-cultural context. Moving toward a more inclusive and sustainable food system requires shifting from technocratic definitions of sustainability to approaches rooted in justice, equity, and democratic participation.

Policy Recommendations

To support organic farming in Bogor Regency and address systemic inequalities, several directions are proposed. Governments need to implement policies that reduce barriers to certification, such as by providing subsidies and support for navigating bureaucratic procedures. Collaborative forums involving farmers, certifiers, and local authorities can help revise standards to be more contextually relevant.

Grassroots distribution systems including cooperatives and digital platforms should receive infrastructure, funding, and legal recognition. These systems have demonstrated their capacity to reduce dependency on exploitative intermediaries while promoting fair pricing and consumer education.

Community-based institutions like PGS must be legally acknowledged and institutionally supported. These platforms not only ensure quality but also serve as spaces for democratic learning, trust-building, and local governance.

To address fragmentation, coordination platforms involving farmers, NGOs, academics, and consumer groups should be institutionalized to ensure inclusive policy dialogue. These platforms can help bridge formal and informal domains of authority and facilitate more responsive food system governance.

A socially just and ecologically grounded approach to organic agriculture requires the state to evolve from a top-down regulator into a facilitator of grassroots innovation and community-led transformation.

Research Contributions and Future Directions

This study contributes to bridging structural analysis and community praxis by showing how local food systems can resist global exclusionary forces through innovation and solidarity. Future research should examine how models like PGS can be scaled, how digital infrastructures support food justice, and how youth engagement can be fostered.

Although this study did not explicitly focus on gender, it is important to recognize that gender likely influences access to land, training, and certification processes. Most informants were men or institutional representatives whose perspectives were not differentiated by gender. Consequently, the roles, experiences, and challenges of women in organic farming remain under-represented.

Future research should more deliberately examine gender dynamics, including women's roles in production, their access to decision-making, and how they interact with certification systems and markets. Such inquiry is essential for building more inclusive, equitable, and transformative food governance models.

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