



Examine the Elements that Impact Food Security

Muhammad Syafrudin¹(✉), Sarwono¹, Abdul Hakim¹, and Solimun²

¹ Administration Science, Brawijaya University, Malang, Indonesia
msyafrudin@student.ub.ac.id

² Mathematics and Natural Science, Brawijaya University, Malang, Indonesia

Abstract. The research aims uncover the variables impede the Indonesian government's efforts to develop effective policies to promote food security. Employs a qualitative approach, utilizing the Discourse Network Analysis (DNA) technique to analyze online articles and news related to the keywords “food estate,” “domestic food fulfillment,” and “national program.” The analysis identified seven central actors involved in the discourse on food policies in Indonesia, including Indigenous People's Institutions, Merauke, The Ministry of Infrastructure, Papuan the People, the Institute for Economics and Finance, the Ministry of Agriculture, and the Agriculture Ministry from 2014 to 2019. The analysis revealed that each actor presented their opinions on various issues, with both positive and negative aspects. The significance of this research lies in using the DNA method to evaluate actors and topics relating to food security. It provides valuable insights that aid the government in policymaking, particularly in addressing the challenges faced in ensuring food security for the growing population in Indonesia. By identifying the factors that hinder the formulation of effective food security policies, the government can take appropriate measures to improve food security and ensure the well-being of its citizens.

Keywords: Food · Security · DNA · Actor

1 Introduction

Every person has the fundamental requirement of food, and it is the government's responsibility to ensure everyone has access to it, which is a basic human right [1]. The Indonesian Constitution of 1945 guarantees food fulfillment as part of human rights, and regulated by Law No. 18 of 2012, which replaced Law No. 7 of 1996. The law emphasizes the state possesses natural resources and various sources of food.

The objective of ensuring food security is to facilitate the achievement of self-sufficiency in terms of food, which denotes the capacity to produce food domestically, reinforced by institutions dedicated to food security that can guarantee the adequate fulfillment of household-level food requirements in terms of quantity, quality, safety, and affordability, supported by a diverse range of locally-sourced food. This is expounded upon in the Law Number 18 of 2012, which stresses that the state possesses natural resources and an array of food sources.

© The Author(s) 2023

A. F. Wijaya et al. (Eds.): AICoBPA 2022, ASSEHR 764, pp. 563–581, 2023.

https://doi.org/10.2991/978-2-38476-090-9_45

Law Number 18 of 2012 states that the food administration aims to achieve several objectives. Firstly, it seeks to improve the country's ability to produce food independently. Secondly, it aims to provide varied food that meets public consumption safety, quality, and nutritional requirements. Additionally, the food administration aims to realize adequate levels of food supply, particularly for staple foods, at reasonable and affordable prices for a community's needs. It also aims to facilitate or increase access to food, particularly for individuals experiencing food insecurity and malnutrition.

The food administration's objectives include enhancing the competitiveness and value of food products in dynamic and worldwide markets. It also endeavors to educate the general public about safe, nutritious, and high-quality food that can be consumed. Additionally, it aims to enhance the well-being of farmers, fishers, fish farmers, and food industry participants while protecting and developing the nation's food resources.

The main goal of Regulation Number 18 of 2012 is to govern the management of food security. Food security refers to the state's right to establish food policies that are in line with local resources. On the other hand, food independence pertains to the ability of the state to produce food that guarantees adequate food supply. Addressing food security is a multifaceted issue that requires cooperation across various sectors such as agriculture, forestry, livestock, marine, and trade. The government has implemented several measures to achieve food security, which is also a primary focus of the Sustainable Development Goals (SDGs), particularly in eradicating hunger, ensuring food security and nutrition, and promoting sustainable agriculture under the second goal (zero hunger). In Indonesia, food security is among the nine priority agendas (Nawa Cita) that outline the vision and mission of President Joko Widodo. Food security constitutes one of the three dimensions of development, specifically leading sector development.

Realizing national food security is closely tied to agricultural development policies that support domestic food supply. This includes increasing the country's capacity for agricultural production and implementing related supporting policies. The primary objective of agricultural development is to foster agribusiness, which involves creating a cohesive relationship between upstream agricultural industries (e.g., seeds, production inputs, and machinery), primary agriculture (on-farm), downstream agriculture industries (product processing), and supporting services. As farmers and entrepreneurs are the key players in agribusiness, it is critical to establish economic incentives that motivate them to engage in this sector, as it heavily relies on income incentives. Therefore, the general strategy for achieving this goal is promoting agribusiness and encouraging a harmonious relationship between its various components [2].

Indonesia's food policy presents several challenges in meeting the growing population's food needs. As the agricultural sector is the primary food source, it is expected to grow in quantity, variety, and quality. To avoid dependence on other countries, the national policy is to fulfill the country's consumption needs from domestic production. However, the agricultural sector faces challenges that develop dynamically along with social, cultural, economic, and political developments, including globalization and the ongoing reform and decentralization of governance structures. To address these challenges and maintain long-term food security, the government has initiated the "food estate" policy, which involves the development of large-scale food plantations/agriculture companies [3]. This policy is part of the broader strategy to promote

agribusiness and improve the agricultural sector's performance, including providing economic incentives to farmers and entrepreneurs.

The abovementioned challenges in ensuring food security in Indonesia necessitate research examining the factors influencing food security. This research can provide valuable insights to the government in devising policies that can enhance food security in the country. The study can focus on several variables, such as the national culture, farmers' economic conditions, the quality of distribution and warehouse services, farmers' gratitude, anticipation, and food independence. These variables are defined as the ability of a nation or country to ensure the availability and accessibility of sufficient, decent quality, healthy, and safe food. The results of government can utilize the results of this research or formulate effective policies on food security in the West Nusa Tenggara region. It is imperative that the government continuously assesses the food security situation and implements appropriate measures to guarantee the well-being of its citizen.

2 Literature Review

2.1 Public Administration Science

To comprehend the central government's role in enhancing the public budget's quality, it is crucial to delve into the science of public administration, considered the grand theory. Public Administration is a theory that focuses on the structure of the state, how it carries out its functions, and the management of public organizations [4]. The theory of public administration emphasizes the role of public organization managers in providing services to the community. As a public organization, the state comprises multiple organizations that have the power to create laws and regulations and carry out public service duties [5]. Based on the theory of public organization, each government structure is a distinct political actor from the state system, which has strong political power but is an integral part of the public administration system. Thus, local governments are also responsible for resource allocation as part of their management function [5].

The scope of public administration encompasses all the issues and challenges faced by society and addressed by the government. As stated by Chandler and Plano [6], the content of this field is complex and constantly evolving based on societal developments and dynamics. Public administration is concerned with the actions taken by the government to serve the community. According to Nicholas [7], the scope of public administration can be divided into three main areas: public organization, public management, and implementation of public policy.

According to Perry [8], public administration encompasses various subjects, including administrative systems, state institution relations, policy formulation and implementation, budget and tax administration, human resource management, public services, and government ethics. Additionally, Shafritz et al. [9] argues that public administration covers all aspects of governance. This study covers various topics related to the public sector, including the relationships between government institutions, management and performance, accountability, human resource management, social justice, financial management, accounting, and government ethics.

2.2 Nation Culture

The influence of culture on consumer behavior is a vital aspect of society. It encompasses various values, beliefs, customs, and traditions acquired from multiple sources such as family, religion, nationality, race, and geography. For example, farmers' cultural background can affect their preferences towards fertilizers that align with their norms and values. Additionally, land is a critical factor in agricultural production, and not all land can support the same crops due to varying soil types, fertility, and structure across regions. Therefore, farmers must adapt their crop choices to local environmental conditions to maximize production. Furthermore, a region's culture and traditions impact farming practices and techniques. The combining of environmental factors and cultural influences creates unique agricultural systems that vary across different areas.

Culture is a complex concept encompassing various aspects of society and human behavior. It includes beliefs, customs, traditions, language, art, music, and many other factors that shape our identities and ways of life. The different components of culture can influence various aspects of human behavior, including consumption patterns, social relations, and production practices. Therefore, understanding the cultural context is essential for any study or analysis that involves human behavior, including consumer behavior or production systems.

One way to operationalize culture in research is to use specific indicators or variables that capture some dimensions. For instance, race or ethnicity, religion, social networks, or production purposes are some indicators that can be used to measure the influence of culture on various aspects of life. However, it is important to note that these indicators may not cap only capture part of the city of culture and its dynamics. Culture is a dynamic and evolving concept influenced by various historical, political, economic, and environmental factors. Therefore, any analysis that involves culture should consider its multiple dimensions and contexts.

2.3 Farmer's Economic Condition

The economic condition of a farming family is a crucial factor in determining their livelihood and quality of life. It refers to the family's financial status or position regarding income, livelihood, and ability to meet their basic needs. The economic condition of farming families can vary widely. It is influenced by land ownership, income from agriculture and other sources, and access to credit and other financial resources.

In many societies, there are significant differences in economic status, education level, social status, and power, which give rise to social with the ability to create laws and regulations stratification. Farmers, in particular, may occupy a unique social position due to their reliance on the land for their livelihood. Thus, the economic condition of farming families is a crucial element of their social status and work in society.

When examining the economic situation of farming families, it is crucial to consider many factors that impact their financial status, such as their access to resources, including land, credit, education, and economic opportunities and markets. By grasping these factors, policymakers and other stakeholders can devise effective strategies to enhance the financial stability of farming families and facilitate sustainable agriculture. The financial

status of farmers is a multifaceted notion that can be assessed using various indicators, including but not limited to land tenure, income, and secondary income.

Land tenure pertains to the legal and social regulations governing land use and ownership and is crucial in determining a farmer's economic condition. Access to land is a fundamental resource for agricultural production, and thus, it plays a significant role in the economic status of farmers. Farmers who own their land outright are generally considered to be in a more favorable financial position than those who lease land or work as sharecroppers.

Income is another important indicator of a farmer's economic condition. It refers to a farmer's money from selling crops or other agricultural products. Income is influenced by various factors, including the type of crops grown, the quality of the land, and market conditions. Farmers with higher incomes are generally considered to be in a better economic position than those with lower incomes.

In addition to income, farmers may also generate secondary income from non-agricultural activities such as off-farm employment, small business ventures, or remittances from family members who work in other industries. Secondary income is an important indicator of a farmer's overall economic well-being because it provides a buffer against the risks and uncertainties of agricultural production.

These indicators can provide a comprehensive picture of a farmer's economic condition, allowing researchers and policymakers to identify areas where interventions may be needed to support sustainable agricultural development and poverty reduction.

2.4 Distribution Service Quality

The success of a product, be it in the form of goods or services, depends on its ability to reach potential buyers across various locations. Distribution, therefore, plays a crucial role in marketing the product. It encompasses the company's activities that make the product easily accessible to the target customers, ensuring its availability in the right place at the right time. Effective distribution is essential for a product to sell well in the market. Distribution is a key marketing activity that aims to streamline the delivery of goods and services from producers to consumers, ensuring they are easily accessible and available when needed. The primary objective of distribution is to facilitate the movement of the product through the supply chain and to make it conveniently accessible to the end users. This way, consumers can easily obtain the product, and producers can ensure it reaches the intended market [10].

The context of logistics is associated with efficiently organizing, moving, and storing materials and people. The primary objective of logistics is to provide a system that delivers the right product to the right location at the right time, while optimizing performance measures such as minimizing total operational costs and meeting established standards. This is done according to the client's ability and with a focus on maintaining the quality of service [11].

Logistics involves various groups of stakeholders, which can be classified into five categories:

- Consumers need goods for production or consumption and decide what, where, and from whom to purchase the goods.

- Logistics Actors (PL) include producers and intermediaries who provide goods to consumers through distribution channels.
- Logistics Service Providers deliver goods from manufacturers, suppliers, or distributors to consumers, distributors, or producers. They also offer storage services.
- Logistics Support institutions include associations, consultants, and educational and research institutions that help improve logistics efficiency and resolve problems.
- The government regulates logistics activities by creating laws and policies, building infrastructure, and coordinating logistics activities.

2.5 Warehouse Service Quality

Wyckoff [12] defines service quality as the expected level of excellence and the ability to meet customer needs through effective control over these factors. In other words, there are two main factors that influence the quality of service: the customer's expected level of service and the customer's perceived level of service. In service delivery, there are five gaps that can affect service quality. These gaps are:

- The Discrepancy between Consumer Expectations and Management Perceptions.
- The Discrepancy between Management's Perception of Customers and Service Quality Standards.
- The Discrepancy between Service Quality Standards and Service Delivery.
- The Discrepancy between Service Delivery and External Communication.
- The Discrepancy between Expected Service and Perceived Service.

2.6 Farmer's Gratitude

According to Emmons et al. [13], gratitude is an emotion that can develop into an attitude, good moral character, habit, or personality trait, ultimately affecting a person's response to situations and motivating positive actions such as warm appreciation, goodwill, and transpersonal behavior. Unlike negative emotions such as anxiety, jealousy, and anger, gratitude promotes positive behavior. Three indicators operationalize this construct: a sense of appreciation, positive feelings, and an expression of gratitude.

2.7 Farmer's Anticipation

The anticipatory attitude of farmers encompasses their inherent capacity as the primary actors in managing agricultural resources, which includes their ability to set appropriate farming business goals and achieve them effectively. The power of farmers in this regard can be measured by their knowledge, attitudes, and skills. These factors play a crucial role in determining the success of agricultural businesses and the sustainability of the farming industry. Thus, a deeper understanding of the interplay between the farmers' anticipatory attitudes and their capacity to set and achieve goals can contribute significantly to developing and advancing agricultural practices.

Farmers play a crucial role in managing their agricultural businesses, requiring them to possess the skills and knowledge to identify potential opportunities, overcome challenges, and maintain the sustainability of their resources. An anticipatory attitude towards farming also involves farmers' independence, representing their freedom to choose

and direct their agricultural activities in a mutually profitable, responsible, and accepting manner. This independence encompasses various aspects such as decision-making, capital, partnerships, and farming dynamics.

2.8 Farmer's Welfare

The overarching goal of agricultural development is to promote farmers' welfare, the sector's primary actors. As such, they should be rewarded commensurately for their toil in agriculture, as noted by Mosher [14]. According to Mosher [14], farmers' welfare is multifaceted and encompasses various aspects of household well-being, contingent on their income level. If a farmer's income is sufficient to meet household expenditures, it will result in a higher standard of living for the family.

According to Rambe et al. [15], welfare is a state of social, material, and spiritual well-being characterized by a sense of safety, decency, inner and outer peace, and the fulfillment of the physical, spiritual, and social needs of individuals and society while upholding human rights and obligations as stipulated in Pancasila and the 1995 Constitution. The level of welfare can be measured using eight indicators, namely population, health and nutrition, education, employment, consumption level and pattern, housing and environment, poverty, and other social factors. These indicators were reported by the Central Statistics Agency in 2019.

- The government's approach to population issues goes beyond population control and prioritizes improving human resources through social development programs in all sectors, aiming to enhance the population's welfare.
- A community's health and nutrition status can be assessed by evaluating factors such as birth attendant availability, access to health facilities, and the type of treatment provided, which can give an overview of progress toward improvement.
- The level of education of a nation's people is crucial to its progress, and the government expects education improvements to impact the population's welfare positively.
- Employment levels indicate community welfare, as demonstrated by labor force participation rates (TPAK) and open unemployment rates (TPT), and higher incomes shift expenditure patterns from food to non-food items.
- Good housing and sufficient facilities contribute to residents' comfort and well-being.
- Poverty is linked to limitations in the ownership and control of physical and non-physical resources.
- Access to information and entertainment, such as through television, radio, newspapers, and the Internet, can reflect the well-being of a population.

2.9 Food Independence

"Food independence" and "food self-sufficiency" are terms often used interchangeably, but they have different meanings. "Food independence" refers to a country's ability to ensure the availability and acquisition of sufficient, decent quality, and safe food for its population. Meanwhile, "food self-sufficiency" refers to a country's ability to produce enough food to meet the needs of its people without relying on imports.

As explained by Barham and Sylvander [16], food independence is achieved by optimizing the use and diversity of local resources to guarantee food availability and acquisition. Both micro and macro indicators can measure the achievement of food self-sufficiency. The direct affordability of food by households and communities is a micro indicator. In contrast, the continuity of food availability, distribution, and consumption with balanced nutritional quality at the regional and national levels is a macro indicator.

In summary, while “food independence” and “food self-sufficiency” are related concepts, they refer to different aspects of a country’s food security. “Food independence” refers to the ability to ensure the availability and acquisition of sufficient food. In contrast, “food self-sufficiency” refers to producing enough food domestically to meet the population’s needs without relying on imports.

Managing biological resources is crucial for a country’s food security, and it requires the active participation of the nation itself. Since the era of President Soekarno, the concept of food self-sufficiency has been promoted, with farmers fighting for their rights to control their rice fields. This struggle has continued today, with food independence or self-sufficiency becoming a key issue in Indonesia’s legislative and executive institutions. The government has taken various steps to ensure the country can stand independently and not rely on foreign aid or food imports. Law No. 18 of 2012 affirms the importance of food independence, defining it as the ability of the state and nation to produce a diverse range of food within the country. Indonesia’s abundance of biological resources is a valuable asset, but it must be managed effectively to ensure food security for all Indonesians.

Food independence has been a persistent emphasis on Indonesia’s national agenda. Food security and self-sufficiency have long been a source of worry in Indonesia and worldwide, as emphasized by Ghose [17]. Population expansion and the need to maintain a sufficient food supply have fueled this issue. Indonesia understands the significance of tackling this issue and has made food security and self-sufficiency a significant societal aim [18]. Unfortunately, the question of how to attain food independence still needs to be answered. Implementing community empowerment initiatives that use local resources is one viable option. However, motivating communities to manage and utilize their resources may be difficult and complex.

2.10 Food Security

The World Health Organization (WHO) proposes three pillars of food security: food availability, food accessibility, and food consumption (utility). Food availability refers to people’s capacity to obtain enough food to meet their fundamental requirements. Nevertheless, food accessibility is linked to how a person gets food. On the other hand, food utility is the capacity to use high-quality food ingredients [19].

Food security has been widely discussed and defined by many organizations and organizations. According to the World Health Organization (WHO), three pillars of food security must be considered: food availability, food accessibility, and food consumption. The presence of adequate quantities of food to suit the requirements of persons is referred to as food availability. Food accessibility, on the other hand, is concerned with how people receive food. Lastly, food usage refers to the capacity to utilize and consume nutritious food [19].

The World Food Summit in 1996 expanded the definition of food security, providing a more comprehensive understanding. According to this definition, food security is achieved when all individuals have access to sufficient, safe, and nutritious food that meets their dietary needs and preferences for a healthy and active life, both physically, socially, and economically. This definition emphasizes the critical role that access to quality food plays in achieving food security [20].

3 Research Method

This study utilizes a qualitative approach that employs the Discourse Network Analysis (DNA) method. The method involves analyzing content found in cyberspace, such as online articles and news, through a technique developed by Leifeld and Haunss [21]. The DNA research method analyzes certain actors or figures against a policy based on validated sources. Specifically, DNA combines discourse analysis and social network analysis to identify a discourse in various documents and create a network. The method combines qualitative-based content analysis, namely discourse analysis, with social network analysis to determine actors' ideas in a fundamental and systematic approach. This approach makes it possible to identify discourse structures in various textual documents, such as newspaper articles, print media, or transcripts of debates in parliament [21, 22].

The DNA analysis has mainly been utilized for research studies on government policies and conflicts related to a country. For instance, Philip Leifeld's survey on the Reconceptualization of Major Policy Changes in advocacy coalitions, conducted using the DNA method, analyzed German pension politics to identify the internal weaknesses of the main policy reconceptualization. In this case, DNA analysis combined qualitative content analysis with social network analysis to measure the level of policy trust in the subsystem during the advocacy coalition process.

However, despite its predominant usage for government and country policy studies, the description above indicates that there is an opportunity for researchers to utilize and explore discourses on network analysis in other topics related to government policy, such as food policy implementation. Therefore, DNA analysis is a valuable research tool that can help researchers better understand complex policy issues and identify discourse structures. This makes it useful for researchers in political science and related fields [21, 22].

The author intends to use DNA analysis to study food policy implementation. This technique has various advantages, including the ability to identify the players participating in the conversation, examine the interconnections between actors and concepts, analyze the linkages between actors, and assess the conceptual sentiment of the discourse. Using DNA analysis in this context, the author may investigate and obtain insights into the complex network of people and elements involved in food policy implementation.

To begin the DNA analysis, the author initially collected data using relevant terms such as "food estate," "domestic food fulfillment," and "national program." The author then scanned electronic media outlets for news stories containing these keywords. The obtained data were then analyzed with the Discourse Network Analyzer tool and displayed with the Visone application to generate picture graphics. Lastly, the author did

a descriptive analysis of the produced picture graphics to interpret the DNA analysis results. Using these processes, the author obtained significant insights into the conversation around food policy implementation.

4 Result and Discussion

The DNA analysis of the thirty-two news articles related to food policy implementation in Indonesia revealed the involvement of seven key actors. These actors include Indigenous Peoples Institutions, the Regent of Merauke, the Ministry of Infrastructure, the Papuan people, the Institute for Development of Economics and Finance, the Ministry of Agriculture, and the Minister of Agriculture for the period of 2014–2019. The Discourse Network Analyzer software was utilized to perform the analysis, which provided insights into the relationships between these actors and their connections to various concepts within the discourse. The findings of this analysis were then presented through visually-appealing graphics generated using the Visone application (see Fig. 1). Following the investigation, a descriptive study was conducted to gain a deeper understanding of the implications of the results.

In addition to the actors involved in the program, the DNA results also show that, in general, the actors discuss six key issues. The main issues addressed by the actors are as follows.

The following themes can be identified in the discussion of the Food Estate Program: (1) public concerns surrounding the program; (2) the designated target areas for the program; (3) the funding and permits required for the program’s implementation; (4) the potential positive impact of the program; (5) the adaptability of the Food Estate Program to different contexts; and (6) the specific commodities cultivated in each area where the program is implemented. The roles and issues each actor discusses are summarized in the following Table 1.

The DNA analysis results shed light on the interplay between actors and issues in implementing food policies (food estate) in Indonesia. Indigenous institutions contend



Fig. 1. DNA output on food estate.

Table 1. The roles and issues each actor discusses.

No.	Actor	Issues	Key issues	Sentiment
1.	Institutions for Indigenous Peoples	Local knowledge is eroding and will face a direct assault from political and economic processes, progressively leading to liberalization in all areas.	Concerns regarding the Food Estate Program in the General Public	Negative
		The ambitious food estate project has attracted a large number of investors from both domestic food corporations and multinational conglomerates.	Food Estate's Beneficial Impact	Positive
		Indigenous people in Merauke Regency will be concerned about the significant land removal that investors will carry out as part of the food estate scheme.	Concerns regarding the Food Estate Program in the General Public	Negative
		Minority Traditional Papuan groups will be disadvantaged if land management is modernized and wide chances for migrants to reach Merauke are created.	The general public has raised concerns concerning the Food Estate Program.	Negative
		The early 1980s implementation of the People's Nucleus Plantation Program (PIR) in Papua had a significant societal impact, and the government could learn from it.	The general public has raised concerns concerning the Food Estate Program.	Negative

(continued)

Table 1. (continued)

No.	Actor	Issues	Key issues	Sentiment
2.	Merauke's Regent	Merauke is the primary focus of food estate development.	Area of Interest for Food Estate	Positive
		Except for state-owned and regional firms, any corporation can be granted a license to administer a maximum of 10,000 hectares of land.	Funding and licenses for the Food Estate	Negative
3.	Ministry of Infrastructure	President Joko Widodo delegated to the Ministry of Public Works and Public Housing (PUPR) the job of carrying out the food estate development program at a location projected to become a new food barn outside Jakarta. Java Island.	Area of Interest for Food Estate	Positive
		Food estate is an integrated food development concept that includes agriculture, plantations, and animal husbandry.	Area of Interest for Food Estate	Positive
		The government has budgeted IDR 1.9 trillion in the state budget for the next two years.	Funding and licenses for the Food Estate	Positive
4.	The Papuans	Capitalist interests frequently subjugate and undermine culture.	Concerns in the community concerning the Food Estate Program	Negative

(continued)

Table 1. (continued)

No.	Actor	Issues	Key issues	Sentiment
		The concept of this food estate raises concerns that financiers may control as much agricultural land as possible. Some argue that this initiative could even be seen as a form of land grabbing by private parties, which the government has sanctioned.	Concerns in the Community About the Food Estate Program	Positive
		Farmers' lives would suffer due to corporate displacement, forcing them to work on their land.	Concerns in the Community About the Food Estate Program	Negative
		Developing the food estate idea comes with risks, as foreign private firms may dominate agriculture from upstream to downstream.	Concerns in the community concerning the Food Estate Program	Negative
		The expansion of food estates runs counter to the government's efforts to promote the people's economy, particularly the peasantry's.	Concerns in the community concerning the Food Estate Program	Negative
5.	Institute for Development of Economics and Finance	The government's food estate initiative may be a future answer for supplying domestic food.	The positive impact of a Food Estate	Positive
		The agriculture industry, particularly food estates, has demonstrated its ability to thrive.	Adaptivity of the Food Estate Program	Positive

(continued)

Table 1. (continued)

No.	Actor	Issues	Key issues	Sentiment
		This strongly incentivizes the community to examine and expand this industry to the downstream product or industrialization stage.	The positive impact of a Food Estate	Positive
		Good in increasing productivity to become more self-sufficient and sustaining some people's excitement for agricultural development, rather than being washed away midway due to the quick fix of food imports.	The positive impact of a Food Estate	Positive
		Rice was produced in the area's food barns during the Old Order era, but it was adapted to the context of the surrounding area's primary diet.	The positive impact of a Food Estate	Positive
6.	Ministry of Agriculture	The Ministry of SOEs and the Ministry of Agriculture will develop plant processing technologies to generate superior goods.	The positive impact of a Food Estate	Positive
		As much as 28,300 hectares of accessible land have good irrigation conditions, while another 57,200 ha require irrigation network renovation.	Community Concerns about the Food Estate Program	Negative

(continued)

Table 1. (continued)

No.	Actor	Issues	Key issues	Sentiment
		The government's focus is on building food plantations in four regions, namely Central Kalimantan, South Sumatra, North Sumatra, and East Nusa Tenggara.	Commodity Food Estate in each implemented area	Positive
		Rice and other supporting crops like vegetables and fruits, ganja coconut plantation plants, and ducks are the primary commodities farmed in Kapuas Regency and Pulang Pisau Regency.	Commodity Food Estate in each implemented area	Positive
		The acreage used for land intensification efforts spans 20,000 acres, with rice serving as the primary crop.	Commodity Food Estate in each implemented area	Positive
		Food estate operations are done out in Humbang Hasundutan Regency in North Sumatra. In an area of 215 hectares, onions, potatoes, and other vegetables such as cabbage/ cabbage, red pepper, maize, and peanuts are planted.	Commodity Food Estate in each implemented area	Positive
		NTT food estate operations have been carried out over 10,000 hectares in Central Sumba Regency. The land area is divided into 5,620 hectares for rice cultivation and 4,380 ha for corn plants.	Concerns in the community concerning the Food Estate Program	Positive

(continued)

Table 1. (continued)

No.	Actor	Issues	Key issues	Sentiment
7.	Minister of Agriculture 2014–2019	It is common knowledge that the acreage of rice fields is decreasing. Several fertile paddy fields have changed use.	Concerns in the community concerning the Food Estate Program	Negative
		The rest of the land is this food estate area. President Soeharto launched the “One Million Hectare Rice Field Program” 30 years ago. The program was canceled owing to difficulties in constructing its water infrastructure. Four hundred thousand acres were converted along the way, mostly into oil palm plantations.	Concerns in the community concerning the Food Estate Program	Negative
		To convert it into a food estate, the land had to be cleared and the irrigation network reconstructed with a more appropriate water management system.	Area of Interest for Food Estate	Positive

that the project has positive and negative impacts on the community. On the positive side, the project is seen as a promising opportunity to attract national and international investments in the food industry, which could benefit society if executed in a context-sensitive and adaptive manner. However, indigenous institutions also highlight the project’s negative consequences, particularly in eroding local wisdom and causing anxiety among the indigenous communities due to massive land openings. In addition, the transition to a modern land management system under the food estate project could further marginalize minority communities. Therefore, the indigenous institutions recommend that the government review the PIR program in Papua in the early 1980s to empower local communities and minimize the project’s negative impacts on their welfare. The ultimate goal of the food estate project should be to serve the community’s best interests while reducing negative effects.

The community’s opinions, particularly those of the Papuan people, are also critical to the success of food estate policies. The Papuan people have expressed concern that

pursuing capital interests through these projects could undermine local cultural heritage and wisdom, leading to land grabbing and turning farmers into laborers on their land. Additionally, these developments may contradict the government's efforts to promote the economy, particularly that of the peasantry. Therefore, it is crucial to consider the community's perspective when implementing food estate policies to avoid negative social and economic consequences.

The Regent of Merauke also highlighted the positive and negative impacts of implementing food estate policies. On the one hand, he has identified the potential for expanding the project's target area, which could lead to the further development of the food estate initiative. On the other hand, the Regent has raised concerns about the legality of permits related to companies contributing to the project, which could undermine the initiative's overall success. Thus, it is essential to address visa issues and ensure legal compliance to minimize negative impacts on the community and the environment.

The Ministry of Infrastructure has emphasized that the food estate development policy has the potential to establish a new food center outside Java Island, which would provide significant benefits to a wider population. From the Ministry of Agriculture's perspective, the food estate policy has positive and negative aspects. On the positive side, the food estate program is expected to lead to the development of advanced planting and processing technologies, which could enhance product quality and increase commodity productivity. Moreover, expanding food estates in multiple regions of Indonesia would enable cultivating a more diverse range of commodities suited to the local environment.

On the other hand, the Ministry of Agriculture has pointed out certain drawbacks associated with implementing food estate projects. These include the potential disturbance of previously well-irrigated land, which may not require rehabilitation. Moreover, the program has caused a reduction in the area of productive land, leading to changes in its function and a lack of mature systems that have disrupted the land's ecosystem. Researchers must focus on developing mature land systems that do not interfere with pre-existing ecosystems.

Nevertheless, the Institute for Development of Economics and Finance has highlighted the potential of the government's food estate program to solve the domestic food supply problem. It presents an opportunity to develop the sector further, leading to downstream products and industrialization. This program can be an instant solution to Indonesia's food imports problem and strengthen its production, promoting self-sufficiency and encouraging the development of agriculture in the country.

5 Conclusions and Suggestions

The results and discussion show that seven actors have provided their views on the implementation of food estate policies in Indonesia. These actors are the Indigenous Peoples' Institutions, Merauke Regent, the Ministry of Infrastructure, the Papuan people, the Institute for Development of Economics and Finance, the Ministry of Agriculture, and the Minister of Agriculture for the period 2014–2019. The views expressed by these actors reveal a balance between positive and negative issues related to the policy implementation. The positive issues center around the potential benefits of the food estate policy projects for the community's welfare, while the negative issues mainly concern matters related to the erosion of local culture, wisdom, and land ownership by capitalists.

It is crucial for stakeholders involved in the implementation of food estate policies in Indonesia to pay attention to various aspects such as community welfare, fund allocation, and the use of community-owned land. This is necessary to ensure that the implementation of the projects aligns with the welfare of the community. Additionally, stakeholders must ensure that the implementation of the projects does not compromise the existing customs and culture of the community. By doing so, the performance of food estate policies in Indonesian regions can be improved.

References

1. Hariyadi, P.: Penguatan Industri Penghasil Nilai Tambah Berbasis Potensi Lokal Peranan Teknologi Pangan untuk Kemandirian Pangan. *PANGAN*, Vol. 19 No. 4 Desember 2010: 295–301, 19(4), 295–301 (2010).
2. Suryana, A.: Menelusuri ketahanan pangan, kebijakan pangan, dan swasembada beras. *Pengembangan Inovasi Pertanian*, 1(1), 1-16 (2008).
3. Arif, S., Isdijoso, W., Fatah, A. R., Tamyis, A. R.: *Tinjauan Strategis Ketahanan Pangan dan Gizi di Indonesia*. SMERU Research Institute, Jakarta (2020).
4. Akindele, S. T., Olaopa, O. R., Obiyan, A. S.: The theory of public administration and its relevance to Nigerian administrative ecology. *Journal of Social Sciences*, 6(4), 247-256 (2002).
5. Gianakis, G. A., McCue, C. P.: Budget theory for public Administration... and public administrators. *Budget theory in the public sector*, 158–171 (2002).
6. Chandler, R. C., Plano, J. C.: *The Public Administration Dictionary*. ABC-CLIO, Santa Barbara, CA (1988).
7. Nicholas, H.: *Public administration and public affairs*. Prentic-Hall, Engewood Cliffs. NJ (1995).
8. Perry, C.: Processes of a case study methodology for postgraduate research in marketing. *European journal of marketing*, 32(9/10), 785-802 (1998).
9. Shafritz, J. M., Russell, E. W., Borick, C. P.: *Public administration*. (1997).
10. Heryanto, H., Hidayati, T., Wahyuni, S.: Pengaruh Experiential Marketing dan Kualitas Pelayanan terhadap Kepuasan Konsumen dan Word of Mouth. *Syntax Literate; Jurnal Ilmiah Indonesia*, 6(1), 227–239 (2021).
11. Chandra, A., Rahardjo, S. T.: Analisis kinerja distribusi logistik pada pasokan barang dari pusat distribusi ke gerai indomaret di kota semarang. *Fakultas Ekonomika dan Bisnis*, (2013).
12. Wyckoff, D. D.: New tools for achieving service quality. *Cornell Hotel and Restaurant Administration Quarterly*, 25(3), 78-91 (1984).
13. Emmons, R. A., McCullough, M. E., Tsang, J. A.: *The assessment of gratitude* (2003).
14. Mosher, A. T.: The interplay between interests of US farmers and concerns of Third World countries (1987).
15. Rambe, A., Hartoyo, H., Karsin, E. S.: Analisis alokasi pengeluaran dan tingkat kesejahteraan keluarga (studi di Kecamatan Medan Kota, Sumatera Utara). *Jurnal Ilmu Keluarga & Konsumen*, 1(1), 16-28 (2008).
16. Barham, E., Sylvander, B.: Labels of origin for food: local development, global recognition. *Cabi* (2011).
17. Ghose, B.: Food security and food self-sufficiency in China: from past to 2050. *Food and Energy Security*, 3(2), 86-95 (2014).
18. Warr, P.: *Work, happiness, and unhappiness*. Psychology Press (2011).
19. Judge, W. Q., Fainshmidt, S., Brown III, L.: Which model of capitalism best delivers both wealth and equality? *Journal of International Business Studies*, 45(4), 363-386 (2014).

20. Safa'at, R.: Rekonstruksi politik hukum pangan: dari ketahanan pangan ke kedaulatan pangan. Universitas Brawijaya Press, Malang (2013).
21. Leifeld, P., Haunss, S.: Political discourse networks and the conflict over software patents in Europe. *European Journal of Political Research*, 51(3), 382-409 (2012).
22. Breindl, Y.: Discourse networks on state-mandated access blocking in Germany and France. *info* (2013).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

