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Research Paper

Exploring Food Security Through Traditional Practices: A Case Study of Kasepuhan Gelaralam

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Abstract

Kasepuhan Gelaralam is an indigenous community that sustains its livelihood through traditional rice cultivation, deeply embedded in cultural values and customary institutional systems. While modern food security approaches often prioritize technological and market-based solutions, indigenous cultural systems remain under-explored within multidimensional frameworks. This study examines observable cultural practices in Kasepuhan Gelaralam across six food security dimensions: availability, accessibility, utilization, stability, agency, and sustainability. Using a qualitative-descriptive ethnographic approach, data were collected through triangulation in in-depth interviews with community members, participant observation, and document analysis. The findings reveal that traditional cultivation, communal labor, and collective rice storage strongly support rice-based food security. However, vulnerabilities exist in non-rice commodities due to limited diversification, income constraints, and inadequate nutritional knowledge. These findings highlight the importance of integrating culturally grounded systems into contemporary food policies, though further focused research is required to generate deeper, context-sensitive insights.

Keywords: *Kasepuhan Gelaralam*; Rice Cultivation; Traditional; Food Security.

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1. Introduction

Kasepuhan Gelaralam (formerly known as *Kasepuhan Ciptagelar*) is a traditional community that has existed since 1368 AD, residing around Halimun-Salak National Park and living at elevations ranging from 800 to 1,400 meters above sea level, with its community center in Cisolok Subdistrict, Sukabumi Regency, West Java Province, Indonesia. Given the natural environment and surroundings, this community has made agricultural activities, particularly rice cultivation, its primary activity and cultural center (Kusdiwanggo, 2024). Rice cultivation, or more specifically the rice itself, has significant value and plays a vital role in their life, customs, and culture, which have been preserved intergenerationally (Dalil and Rahardjo, 2019; Kusdiwanggo, 2024). The local tradition of rice cultivation in this community is considered to have the potential to advance and secure food security, as it has its own approach and culture for achieving this through its existing cultural and traditional order (Dirgahayu, Karman and Budhirianto, 2023). As evidence of this potential, several articles note that this community has advantages in its culture of rice cultivation and its abundant food reserves, especially rice, as the output of its culture and activity (Roosyana, 2021; Pitaloka, 2025; Runjung, 2025).

Previous studies on indigenous communities in Indonesia and other countries have documented various traditional agricultural practices, customary land management systems, and cultural values that support local food production (Prakash *et al.*, 2016; Asogwa, Okoye and Oni, 2017; Nurhasan *et al.*, 2022; Kurniawan and Kurniawan, 2022; Yusriadi, 2025). Several studies have also examined food security in rural and indigenous contexts, including *Kasepuhan Gelaralam* (or *Ciptagelar*), with particular attention to agricultural production, rice availability, food consumption, and socio-economic factors (Khomsan, Riyadi and Marliyati, 2013; Karyadi, 2021; Dirgahayu, Karman and Budhirianto, 2023; Sumaludin, 2024; Ginting *et al.*, 2025). All of these studies provide valuable insights into indigenous food systems and the factors that support local food security. Nevertheless, food security in indigenous communities has more often been examined through conventional perspectives or selected dimensions, particularly those related to food production and availability. While previous studies have provided valuable insights into indigenous food systems, less attention has been given to understanding how customary institutions and culturally embedded practices relate to the broader multidimensional framework of food security (HLPE, 2020). In particular, empirical studies that explicitly examine the dimensions of agency and sustainability within indigenous food systems remain relatively limited. Consequently, this presents an opportunity to further explore how customary institutions and cultural practices contribute across multiple dimensions of food security.

Accordingly, this study explores the traditional agricultural practices and customary institutions of *Kasepuhan Gelaralam* through the six-dimensional food security framework. By relating observable cultural practices to each food security dimension, this study seeks to provide a more comprehensive understanding of how indigenous cultural systems contribute to food security. In doing so, it offers an empirical perspective that may complement existing studies on indigenous food systems and contribute to ongoing discussions on culturally grounded approaches to food security. Given that food security remains a global development challenge and continues to be a policy priority in Indonesia (Rozaki, 2021; Tauchid S. *et al.*, 2022), the findings may also provide insights for developing more context-sensitive food security strategies in indigenous communities, consistent with the aspirations of the Sustainable Development Goals (SDGs) (Banik, 2019; FSIN and GNAFC, 2025).

Food security is defined as a condition in which all people have physical, social, and economic access to sufficient, safe, and nutritious food at all times to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996). The concept of food security currently comprises six dimensions that are constantly dynamic and evolving in line with developments in the discussion (Clapp *et al.*, 2022). First, availability addresses the physical supply, requiring sufficient quantities of safe, culturally acceptable food through domestic production or trade. Second, accessibility focuses on economic, social, and physical means, ensuring that acquiring adequate food does not compromise other basic necessities, especially for vulnerable populations. Third, utilization ensures nutritional well-being through safe diet, clean water, sanitation, and healthcare to fulfill physiological needs. Fourth, stability safeguards these three pillars by mitigating cyclical disruptions and sudden shocks from climatic, economic, or conflict crises. Fifth, agency introduces the sociopolitical dimension, affirming the capacity of individuals and groups to govern their food choices, production systems, and policy participation. Sixth, sustainability,

underpins the entire framework by prioritizing regenerative ecological, social, and economic practices that protect food security for future generations (HLPE, 2020; Clapp *et al.*, 2022).

These six dimensions of food security serve as an analytical framework for examining the traditional and cultural systems in *Kasepuhan Gelaralam*. Applying this framework illuminates how food security principles are embedded within the community's customary norms and daily practices. Accordingly, this study aims to identify the customary practices of *Kasepuhan Gelaralam* and evaluate how they are linked to food security at the community level, thereby offering contextual insights for strengthening indigenous food resilience.

This study offers a novel contribution by systematically linking observable cultural practices and customary institutional systems in *Kasepuhan Gelaralam* into the six dimensions of food security. Unlike previous studies that predominantly focus on production outcomes or socio-economic metrics (Khom-san, Riyadi and Marliyati, 2013; Karyadi, 2021; Dirgahayu, Karman and Budhirianto, 2023; Sumaludin, 2024; Ginting *et al.*, 2025), this research integrates cultural, institutional, and behavioral elements into a unified analytical lens. Additionally, the findings may offer useful reference points for policymakers to design sustainable development programs that are attuned to local traditions and community contexts.

2. Methods

This study employed a qualitative-descriptive design with an ethnographic approach to explore traditional and customary practices within *Kasepuhan Gelaralam*. A qualitative approach was selected because the focus of this research is on understanding observable cultural practices, social interactions, and customary institutional systems that cannot be adequately captured through quantitative measurements (Furidha, 2023). To prioritize the community's perspective within a limited timeframe, this study employed a focused ethnography during a one-week fieldwork in *Kasepuhan Gelaralam*. Data were gathered through participant observation and semi-structured, in-depth interviews with five key informants. Each session lasted approximately 60 to 90 minutes and was conducted in local Sundanese to honor cultural nuances. To ensure data accuracy and reflect local realities, all interviews were audio-recorded with consent, transcribed verbatim, and triangulated with daily field notes and observational journals (Gordon, 2021; Garrote, 2025). Prior to data collection and research permission, informed consent and permission to conduct the research were obtained from *Abah*, the customary leader of *Kasepuhan Gelaralam*. The author also complied with the community's customary protocols and cultural norms before commencing the fieldwork, ensuring that the research was conducted in a culturally appropriate and ethically respectful manner.



Figure 1. Author with *Abah* after asking for his permission and consent to do the Research in *Kasepuhan Gelaralam*
Source: Author's photograph (2025)

Primarily, data were collected through in-depth interviews, participant observation, and documentation. Several informants were selected purposively based on their knowledge of traditional agricultural systems and food-related practices, including the *Rorokan Pamakayaan* (customary leaders responsible for agriculture and rice cultivation), the *Jambatan* (the official liaison of *Kasepuhan Gelaralam*), and three community members selected through purposive sampling based on their diverse life experiences. The first informant had experience working outside *Kasepuhan Gelaralam*, the second had never lived or worked outside the community, and the third was a woman whose primary role was managing household responsibilities within *Kasepuhan Gelaralam*. Documentation was also utilized to

support field observations and strengthen the reliability of the collected data. Moreover, to ensure the credibility and validity of the findings, data triangulation was applied by comparing information obtained from multiple sources and methods (Santos et al., 2020; Donkoh and Mensah, 2023).

On the other hand, the secondary data in this research were obtained from *Kasepuhan* officials in the form of annual rice production (harvest) records collected during the *Ponggokan*, the *Kasepuhan*'s annual census conducted over a three-day period. During this event, all villages within the *Kasepuhan* territory submit their annual harvest reports, which are then compiled into the official production records. Because this annual census is limited to three days, any reports submitted afterward are not included in the official records. Moreover, the data of total annual rice production is recorded using the traditional unit of *pocong* (bundles of unhusked rice or paddy). Unlike standardized units of weight, the size of a *pocong* is determined by the circumference formed using the space between the thumb and index finger when tying bundles of harvested rice. Because this hand span varies across individuals, the size of a *pocong* is not always the same. This measurement practice reflects the traditional nature of the *Kasepuhan*'s agricultural system, where harvest records are based on locally embedded conventions rather than standardized measurement systems.

These data, both primary and secondary, were then analyzed using the thematic analysis technique, which can help identify, analyze, and interpret several patterns of meaning within the dataset (Ahmed et al., 2025). This research used the concepts of six phases of thematic analysis, beginning with data familiarisation to develop a comprehensive understanding of the dataset, followed by initial coding to systematically identify meaningful features of the data. These codes were then organized into themes through theme identification. The themes were then reviewed to ensure coherence and accuracy, and defined and labeled to clarify their meaning and scope. Finally, the findings were presented in a systematic and coherent report (Braun and Clarke, 2020).

The use of a qualitative ethnographic approach allows researchers to capture contextual meanings, cultural values, and social norms that influence food security practices within indigenous communities. This method also facilitates the identification of implicit relationships between cultural systems and the six dimensions of food security, which may not be observable through structured survey-based approaches (Deen et al., 2025). However, this study acknowledges certain limitations, such as the context-specific nature of qualitative findings, which may hinder their generalisability to other communities with distinct cultural backgrounds. This research distinguishes itself from previous studies by incorporating ethnographic observations into a multidimensional analytical framework based on the six dimensions of food security. Unlike earlier studies that often focused on specific aspects such as food production or socio-economic conditions, this study systematically maps observable cultural practices and customary systems into a comprehensive food security framework.

3. Results and Discussions

3.1 Results

The results section of this article will comprise and provide an overview of the author's findings on agricultural practices and culture in *Kasepuhan Gelaralam* and their relationship to several dimensions of the concept of food security. The following is a discussion of the six dimensions of food security in this study:

3.1.1 Availability

Availability, in the context of food security, refers to how communities meet their food needs in accordance with the norms or rules they adhere to, either through local production or from outside the community. Several aspects of this dimension of availability relate to the rules and customs in *Kasepuhan Gelaralam*. First, rice cultivation follows an annual cycle, meaning rice is planted and harvested only once a year. This is based on their belief that the Earth (which they consider to be a representation of Mother) can only "give birth" once a year. Even though the community has only a once-a-year rice cultivation and production cycle, rice in *Kasepuhan Gelaralam* is claimed to meet their needs and even be in consistent surplus. The following is a statement from a *Kasepuhan* official regarding this matter:

"I have never heard of any shortages. Historically, there has never been a case of Gelaralam experiencing a rice shortage." -Rorokan Pamakayaan

"Even though it is only done once a year, I have never heard of anyone lacking rice. In fact, every year the rice produced usually exceeds demand." -Jambatan

The statements from informants above support the claim that community rice production consistently meets, and even exceeds, the community's needs, despite being carried out only once a year. The following are the total figures for rice production in *Kasepuhan Gelaralam*:

Table 1. Rice Production in Kasepuhan Gelaralam

Description	2020	2021	2022	2023	2024	2025	2026
Paddy Planted (in Pocong)	19,065	14,023	22,295	13,969	11,523	14,483	12,965
Total Paddy Yield (in Pocong)	776,534	1,033,204	823,634	1,161,585	558,069	1,066,727	947,555

Source: Kasepuhan Gelaralam, managed by Author (2026)

The figures in Table 1 use the unit of measurement pocong, a bundle of paddy that, according to several informants, generally weighs 5 kilograms. Data on rice production in *Kasepuhan Gelaralam* indicate that higher seed volumes do not consistently correspond to higher harvest yields. For instance, despite planting a larger quantity of seeds in 2022 than in 2021, the total harvest was lower. According to interviews with *Rorokan Pamakayaan* and *Jambatan*, this discrepancy stems from multiple factors, including environmental conditions affecting crop productivity and reporting lags during *pongokan* (the annual production census).



Figure 2. A "Pocong" of Paddy

Source: Author's photograph (2025)

The rice yields, which are still in the form of paddy bundles as shown in Figure 2 above, must undergo a traditional milling process before they can become rice and be used as food. Based on information, the traditional rice milling process, which involves traditional pounding by several *Kasepuhan* residents, has a recovery rate of 60-65%. This means they obtain only around 60-65% of the total weight of the paddy pounded, which ultimately becomes rice that can be used as food. Furthermore, customary norms (*adat*) strictly prohibit the commercial sale of planted and harvested paddy and/or rice within *Kasepuhan Gelaralam*. Grounded in the sacred worldview that rice is the "source of life", which means commercializing it is culturally equated to selling their own existence, an offense believed to incur severe bad metaphysical consequences. Based on this belief and view, all the paddy and/or rice planted and produced within the community is retained exclusively for internal consumption and social reserve, remaining entirely insulated from market exchange.

Beyond staple rice, the availability of non-rice foods is sustained through household-level production and market integration. Secondary cropping, such as vegetables or other commodities on agricultural land, is permitted as long as it does not disrupt the mandatory annual rice cycle. While these crops primarily fulfill subsistence needs, households frequently trade surplus produce within and outside *Kasepuhan Gelaralam*. Similarly, small-scale livestock rearing and occasional hunting contribute to local food availability both directly (as domestic food supply) and economically (as traded commodities that generate household income). Consequently, while rice availability is institutionalized through customary reserves, non-rice food availability relies on local economic exchange, informal trade, and market mechanisms.

3.1.2 Accessibility

The accessibility dimension discusses how *Kasepuhan Gelaralam* ensures access to food in Kasepuhan. First, every resident of *Kasepuhan Gelaralam* generally has the right to manage land for rice cultivation, which is given to each family. This right also comes with the obligation to manage the land during the planting and harvest seasons. As rice cultivation is an annual activity, it is an obligation for the entire community so that everyone can produce rice for their own needs. Based on this rice yield, a public contribution scheme in this community aims to ensure access to the rice produced each year. The three schemes are a) *Pare tatali*, which is a mandatory contribution of 10% of the total rice production of each family in *Kasepuhan Gelaralam*. It is used for operational purposes, and the needs of the community government; b) *Pare Girik*, which is used for the general needs and interests of the community at the village/neighbourhood level. The amount given by the second scheme is equal to the amount of rice planted during the planting season; and c) *Pare Jekat*, which is a form of concern and gratitude for the rice production. This third scheme is generally intended to strengthen kinship within the community and to foster reciprocal relationships through the sharing of harvests.

These three schemes strengthen and ensure access to food, especially rice, for all *Kasepuhan* residents. *Pare Tatali*, used for public purposes, serves as the primary source of expenditure or as a source of food “served” at community public events or ceremonies. In these activities, residents can actively participate and receive payment (or wages) in the form of “rice” from this *Pare Tatali*. The same scheme also applies to *Pare Girik*, which is generally used for public interest at the village/community level under *Kasepuhan Gelaralam*. Both schemes are publicly owned, but their management and use differ. Both schemes ensure that Kasepuhan residents do not use privately owned resources for public purposes, as they have already given a portion of their rice yield each year. In addition, these two schemes also enable *Kasepuhan* residents to earn additional “income” by actively participating in public *Kasepuhan* activities or events. On the other hand, this practice also strengthens a sense of togetherness and cooperation within *Kasepuhan Gelaralam*.

The third scheme, *Pare Jekat*, differs in both size and technical management. This scheme is intended as a form of mutual care and generosity among *Kasepuhan* residents during the annual rice cultivation and production. Usually, a family in *Kasepuhan* gives at least one bundle of rice (*pocong*) to its closest relatives, such as parents and other relatives, as well as the community. This *Pare Jekat* scheme is a traditional practice that ensures everyone has access to food, including those who may no longer be productive in agriculture. The people of *Kasepuhan* believe that the more they give, the more likely they are to receive *Pare Jekat* in the future. Therefore, this third scheme serves as the primary benchmark for traditional practices and customs in *Kasepuhan Gelaralam* regarding the accessibility dimension of food security, especially for rice. To access foodstuffs other than rice, *Kasepuhan* residents generally use two methods. First, *Kasepuhan* residents will cultivate other food commodities when they are not in the rice planting or harvesting season. The output of these activities is usually used to meet their own food needs, except for rice, and some residents also sell their food commodities to meet their other needs. Second, *Kasepuhan* residents meet their food needs outside rice by simply purchasing other food commodities, either from fellow *Kasepuhan* residents or from outside the community.

In line with the HLPE framework, the accessibility dimension also encompasses economic access, as the physical and social access to staple rice is guaranteed through customary rights and redistribution schemes; economic access—specifically household purchasing power—primarily governs the acquisition of non-rice commodities. Households use financial resources from selling surplus secondary crops, livestock, or non-farm labor to purchase supplementary foods from local markets or outside the *Kasepuhan*. Thus, economic access complements customary mechanisms, enabling households to meet broader dietary preferences beyond the rice staple.

3.1.3 Utilization

In the food security framework, utilization extends beyond food intake to encompass how households achieve nutritional well-being through an adequate diet, proper food preparation, clean water, sanitation, and health care to meet all physiological needs. In *Kasepuhan Gelaralam*, this dimension operates through a dual system: a highly regulated staple diet complemented by flexible practices for dietary diversification and household health. Rice serves as the primary energy source to fulfill basic caloric needs. Due to its sacred cultural status, every stage of rice management—including

planting, harvesting, traditional milling, and consumption—is governed by strict customary norms (*adat*). Conversely, non-rice foods are exempt from strict customary prohibitions, allowing households the flexibility to cultivate secondary crops like vegetables, rear livestock, or engage in occasional hunting during agricultural downtime. These supplementary foods provide essential micronutrients and proteins necessary for balanced nutrition. This practice is illustrated below:

"I utilize the rice fields to grow other food commodities when it is not the rice planting or harvesting season in Kasepuhan. I use some of the produce to meet my own needs and sell the rest to meet my other needs." -Kasepuhan Member III

"I have some livestock, like chickens, which I can either sell or eat myself. Sometimes I also go hunting with the group, and I might get paid a wage or receive a share of what we got on the hunt, which I can consume myself or sell if needed." - Kasepuhan Member II

Additionally, non-staple food processing in Kasepuhan Gelaralam relies on traditional methods and basic household tools rather than modern industrial technology. Beyond dietary intake, achieving physiological well-being in the community is further supported by environmental and institutional factors, such as reliance on clean mountain spring water, traditional sanitation practices, and local health resources. By combining staple rice consumption with self-produced secondary crops, small-scale livestock, and market purchases, Kasepuhan members utilize available food and environmental resources to sustain their daily nutritional and physiological requirements.

3.1.4 Stability

The dimension of stability is defined as *Kasepuhan Gelaralam's* ability to ensure food security even in the face of threats or challenges. In this article, threats or challenges to food security in *Kasepuhan Gelaralam* are defined as situations in which *Kasepuhan* is unable to cultivate rice for some reason, and how *Kasepuhan* ensures that food security (or rice) remains guaranteed for all of its members. Based on traditional practices and customs in the dimension of availability, local production in Table 1, and officials' claims that *Kasepuhan Gelaralam* has never experienced a shortage of rice, the norm of prohibiting the sale of rice enables this community to maintain rice reserves as an instrument to maintain food stability. *Kasepuhan Gelaralam* has a building called *Leuit* (rice barn) that serves as a storage facility for unthreshed paddy, a community food reserve. In terms of status, the *Leuit* is also an essential part of the community because if the centre of government moves to another village, the *Leuit si Jimat* (Main *Leuit*) is the first building to be moved to the new location, followed by the house of the *Abah* as the leader of the community, the houses of the *Kasepuhan* officials, and then the houses of the other *Kasepuhan* residents.



Figure 3. A *Leuit* in Kasepuhan Gelaralam
Source: Author's photograph (2025)

There are two types of *Leuit* in *Kasepuhan*: *Leuit Rurukan*, which means a public rice barn owned by *Kasepuhan* and containing paddy (in the form of pocong) that is publicly-owned by *Kasepuhan*, and *Leuit* belonging to *Kasepuhan* residents, which contains rice belonging to each family in *Kasepuhan*. The position of *Leuit* in the community is not only limited to a place of storage, but also a form of welfare in the community. The following is an explanation of this:

"Leuit is an important part of our community. It is a sign of how prosperous we are. The more Leuit there are, the more rice they store. The more there are, the more prosperous we are." -Jambatan

The description above from *Jambatan* explains that *Leuit* is one of the benchmarks of prosperity in *Kasepuhan*: the more *Leuit* there are, the more prosperous they become. The following is census data from *Kasepuhan* regarding the number of *Leuit* that exist and are owned by *Kasepuhan Gelaralam*:

Table 2. Total *Leuit* in *Kasepuhan Gelaralam*

Description	2020	2021	2022	2023	2024	2025	2026
<i>Kasepuhan's Leuit</i>	205	212	205	205	216	228	229
Private <i>Leuit</i>	8,766	8,716	9,991	9,688	8,872	10,160	9,253
Total <i>Leuit</i>	8,971	8,928	10,196	9,893	9,088	10,388	9,482

Source: *Kasepuhan Gelaralam*, managed by Author (2026)

Based on the data in Table 2 above, the number of *leuit* in *Kasepuhan Gelaralam* fluctuates from year to year. However, interview results indicate challenges in reporting census data on the number of *leuit* in *Kasepuhan*. In 2024, the number of *leuit* decreased by almost 800 buildings. Based on interviews, it was mentioned that this was impossible because the number was large and there had never been any news about *leuit* 'disappearing' in *Kasepuhan*. Although the data is approximate and fluctuates, Table 2 provides a rough estimate of the food reserves owned by *Kasepuhan Gelaralam* as a community, as a single *leuit* can store 700 to 4,000 pocong of rice, depending on the size of the rice barn.

The rice reserves in *Kasepuhan Gelaralam* are sourced from local production, which is claimed to consistently meet, and at times exceed, the community's needs. Furthermore, a customary norm prohibiting the sale of rice ensures that yields remain within the community. These practices have been maintained continuously for over 600 years, resulting in a significant volume of rice accumulated over that period. Therefore, *Kasepuhan* officials claim the community can meet its food needs for years to come, even if agricultural production is halted. These food reserves demonstrate the stability dimension of food security in *Kasepuhan Gelaralam*.

3.1.5 Agency

In *Kasepuhan Gelaralam*, agency manifests at both individual and institutional levels. At the individual level, residents possess full autonomy over non-staple food selection and processing. Unlike rice, which is strictly regulated by customary rules, non-rice food preferences are unregulated, allowing households to determine their own consumption patterns. As explained by a customary official:

"There are no specific rules regarding which foods are permitted and which are prohibited in Kasepuhan. Everything is free and up to each individual. What is clear is that there are clear rules regarding rice farming and rice, while everything else is up to each individual." -Jambatan

The description above illustrates the individual autonomy enjoyed by community members. Beyond their mandatory rice cultivation duties, residents are free to cultivate secondary crops on idle fields, raise livestock, or pursue non-agricultural and off-farm employment. Furthermore, many of *Kasepuhan* members participate in local labor exchanges, assisting neighbors with rice-field tasks or paddy processing. Compensation for such labor is mutually negotiated upfront, ranging from cash and food commodities to physical goods or reciprocal labor commitments for future farming cycles.

"It is very common to help out and work at Kasepuhan because farming cannot be done alone. It all comes back to each individual, whether they want to be paid in money, goods, commodities, or with help in return in the future." -Jambatan

External labor migration is similarly conditioned upon customary agricultural duties. While residents may seek employment outside *Kasepuhan Gelaralam*, their mobility remains tied to the rice cultivation cycle, particularly for married members who bear full customary obligations. Unmarried residents, however, enjoy greater flexibility, as described by a community member:

"I work outside Kasepuhan to gain skills, experience, and of course, money. When planting season arrives, I don't always return home unless it is necessary in Kasepuhan. I am not yet obliged to farm rice because I am not yet married."

-Kasepuhan Member I

The statement above highlights how unmarried residents retain the flexibility to engage in external employment before assuming full customary farming duties. At the individual level, this dimension of agency shows how *Kasepuhan Gelaralam* respects members' rights to determine their livelihood strategies and dietary preferences, whether through local farming or off-farm work to meet household food security needs.

At the institutional level, agency is strongly manifested through the community's strategic interactions with formal state institutions. Rather than functioning as a passive recipient of national food security programs, *Kasepuhan Gelaralam* asserts its customary authority to govern its food system independently. The community also retains complete control over its agricultural calendar—operating strictly on traditional ecological wisdom—and exclusively cultivates local heirloom seeds rather than adopting high-yielding commercial varieties. Furthermore, the community strictly rejects chemical fertilizers and synthetic inputs, as their application is considered a direct violation of their sacred (*adat*) principles. This institutional agency operates through a dual-governance dynamic where customary authority and formal administrative governance coexist. Customary leaders, specifically the Abah alongside his institutional representatives (*Jambatan*), act as primary negotiators with external state actors. While acknowledging formal village jurisdiction for civil administration, *Kasepuhan Gelaralam* maintains absolute sovereignty over land stewardship, food reserves (*leuit*), and agricultural rules within its territory. When formal state policies intersect with indigenous land use or agricultural practices, the Abah and *Jambatan* actively negotiate terms to protect customary autonomy, ensuring that state development plans do not undermine the community's self-regulated food system.

3.1.6 Sustainability

The sustainability dimension of food security in *Kasepuhan Gelaralam* examines how existing traditional and customary practices maintain a balance among social, economic, and environmental aspects and ensure sustainability without sacrificing future generations. First, food security practices in *Kasepuhan Gelaralam* address the three aspects of sustainability: social, economic, and environmental. Sustainability in the social aspect is maintained through the accessibility dimension, which ensures that every *Kasepuhan* resident has the same rights to the rice available and produced in *Kasepuhan*. *Kasepuhan* residents believe that every rice that is set aside for mandatory contributions (*Pare Tatali*, *Jekat*, and *Girik*) is a reserve that will also benefit them. This social system and norm are maintained and strengthened by the existence of an informal legal system in the community known as "*Kabendon*", which is non-physical and mystical. This system plays a vital role in ensuring harmony between the community's values and customs and their daily activities.

Furthermore, sustainability in the economic sense can be seen in the dimension of agency, where *Kasepuhan Gelaralam* ensures that everyone has the complete right to engage in economic activities, such as working or other efforts, to meet their needs and preferences. In addition, the prohibition on selling rice also protects residents from material dependence and the threat of food insecurity, as food (especially rice) can run out when it is sold. These combinations ensure the sustainability of the economic aspects of food security in this community. Finally, the environmental aspect of sustainability in their traditional and customary practices is reflected in several agricultural practices that support environmental sustainability. First, their belief that the earth is a representation of their "Mother" creates a cautious pattern of interaction between the community and the surrounding environment that does not excessively exploit the environment. Hurting or damaging the environment is the same as breaking their own "Mother", so they avoid it. Moreover, based on the same belief in the earth, rice cultivation practices in this community also avoid harmful or excessively damaging chemicals, as they do not want to harm their "Mother".

Secondly, the sustainability of these practices without sacrificing future generations is illustrated by their preservation of nature and maintenance of traditional practices and customs. This community has existed since 1368 until the time this article and research were done and written in 2025. Since then, the community has carried out *Kasepuhan* practices and has proven them sustainable to this day. They believe that current practices and customs are derived from previous generations and are identical to those of

the first generation. Therefore, they also believe they have the mission to pass on what they have received from earlier generations to future generations of *Kasepuhan Gelaralam*. This belief is also passed down to the next generation, helping sustain the community's culture and traditional practices, including rice cultivation and community-based food security, which have endured for more than 600 years.

3.2 Analysis and Discussion

This chapter examines food security in *Kasepuhan Gelaralam* based on findings. The community meets its rice needs through local production, as shown in Table 1. Despite fluctuating rice production measured in bundles of paddy (pocong), the community's rice production, claimed by *Rorokan Pamakayaan*, are consistently sufficient. This claims reflects the effectiveness of traditional agricultural management and cultural regulation systems. The annual cultivation cycle, rooted in cultural beliefs about harmony with nature, controls production patterns and maintains long-term resource sustainability. The following table presents variables and data for an estimated overview of rice production in the community:

Table 3. Estimation of Rice Production in Kasepuhan Gelaralam

Description	2020	2021	2022	2023	2024	2025	2026
Total Paddy Yield (in kg)	3,882,670	5,166,020	4,118,170	5,807,925	2,790,345	5,333,635	4,737,775
Total Rice Yield (in kg)	2,426,669	3,228,763	2,573,856	3,629,953	1,743,966	3,333,522	2,961,109
Population	26,329	25,552	24,525	25,373	26,402	26,738	29,792
Annual Consumption per person (in kg)	78.26	81.59	81.12	81.02	79.09	78.52	78.52
Annual Consumption (in kg)	2,060,508	2,084,737	1,989,468	2,055,619	2,088,187	2,099,468	2,339,268
Surplus Yield (in kg)	366,161	1,144,026	584,388	1,574,334	(344,221)	1,234,054	621,841
Surplus (Month)	2.13	6.58	3.52	9.19	(1.98)	7.05	3.19

Source: (Statistics Agency of Indonesia, 2024; 2026)

The data in Table 3 above is an estimation of food production in *Kasepuhan Gelaralam*, presented using the unit “*pocong*” of paddy in Table 1. The “Total Yield Weight” data is an estimate of the total rice harvest data in *Kasepuhan* multiplied by the average pocong bundle weight of 5 kilograms, as they used to weigh. The “Total Rice Yield” number is obtained by multiplying the total yield weight by the estimated 62.5% recovery rate, as the average range between 60 and 65%, from the traditional rice milling process in *Kasepuhan Gelaralam*. Moreover, The total population data is the community's census-based total population, conducted by *Kasepuhan Gelaralam* during the *Ponggokan*. Finally, annual per capita rice consumption data were sourced from Statistics Agency of Indonesia (BPS) national averages as an analytical proxy. Due to the unavailability of official 2026 BPS figures at the time of analysis, the 2025 consumption rate (78.52 kg per person/year) was carried forward for the 2026 projection. Given *Kasepuhan Gelaralam*'s heavy reliance on rice, real local consumption may differ from these national proxy values. Therefore, the numbers presented in Table 3 should be interpreted as indicative rather than definitive values. These data are intended to provide an approximate illustration of the community's rice production and consumption in order to contextualize the discussion on rice availability, rather than to represent precise measurements of household consumption.

Focusing on the 2024 data, a notable anomaly occurred: rice production dropped to nearly half of 2023 levels, projecting an estimated deficit of 344,221 kg (or a deficit of 1.98 months of consumption). According to the *Jambatan*, this shortfall stems from administrative exclusion of delayed harvest reports following the three-day *pongokan* census, which also explains the implausible decline of roughly 800 *leuit* (rice barns) in Table 2. Consequently, this deficit reflects incomplete reporting rather than an actual harvest failure. However, even if a deficit had occurred, rice surpluses from previous years would likely have helped maintain the community's rice availability, further showing their stability in food availability, especially for rice. This estimate of rice production and the findings in this research are consistent with previous studies on indigenous agricultural systems, which suggest that traditional ecological knowledge and culturally regulated farming cycles contribute to sustainable food availability (Yusriadi, 2025).

On the other hand, the availability of non-rice commodities—such as vegetables, fruits, tubers, legumes, and animal-source foods relies on a combination of local cultivation and market purchases within and outside *Kasepuhan Gelaralam*. Unlike rice, these commodities are unregulated by customary laws (*adat*), making their availability dependent on household initiative, seasonality, and market access (Khomsan, Riyadi and Marliyati, 2013). While the lack of collective governance means no formal safety

net exists for non-rice foods, this institutional flexibility grants households the autonomy to diversify diets and adapt their livelihoods. Many residents cultivate secondary crops for domestic consumption or trade, though this dimension was not explored extensively as the present study focuses on customary rice institutionalization. Given that non-rice food management operates primarily at the household level, its full contribution to local food security remains an important avenue and gap for future research.

Regarding the accessibility dimension, food security in *Kasepuhan Gelaralam* is sustained not only by production capacity but also by customary institutions that promote equitable resource distribution. Land utilization rights are inextricably bound to the obligation to cultivate. Equitable and stable access to staple rice is guaranteed through collective labor systems and traditional redistribution mechanisms—namely *Pare Tatali*, *Girik*, and *Jekat* which safeguard vulnerable and potentially food-insecure community members. These findings illustrate that physical and social access to staple food is shaped by cultural arrangements rather than market mechanisms alone (Clapp *et al.*, 2022; Yusriadi, 2025). However, access to non-rice commodities remains susceptible to income variations and limited production diversity (Khomsan, Riyadi and Marliyati, 2013). This finding also extends previous research by showing that while communal systems effectively secure access to staple foods, challenges persist in ensuring balanced access to diverse nutritional sources.

The dimension of utilization in the concept of food security is evident through the position and value of rice for this community. Rice, central to the culture and traditional order of *Kasepuhan Gelaralam*, serves as their primary food source. The findings indicate that food utilization practices are closely associated with traditional dietary habits and knowledge systems. The reliance on rice as the primary staple reflects long-standing cultural preferences, while the limited diversification of non-rice food consumption suggests potential gaps in nutritional balance. This finding aligns with previous studies indicating that cultural food preferences significantly influence patterns of food utilization and nutritional outcomes in indigenous communities (Khomsan, Riyadi and Marliyati, 2013; Nurhasan *et al.*, 2022). Within the food security framework, utilization centers on food preparation practices, dietary diversity, and nutritional knowledge. This study demonstrates how cultural continuity functions as a double-edged sword, simultaneously safeguarding staple food security while giving rise to nutritional vulnerabilities. While traditional practices guarantee reliable staple consumption, constrained nutritional awareness and relatively limited access to diverse food sources can compromise overall dietary quality. Consequently, interventions that aim to improve food utilization must adopt culturally sensitive strategies that foster dietary diversification without undermining deeply rooted customary practices.

In terms of stability in the concept of food security, *Kasepuhan Gelaralam* has promising potential in ensuring the community's food needs, especially rice. As mentioned earlier, this community has existed since 1368 and continues to follow the same practices and cycles every year. This also means the community has practiced rice cultivation and used the same mechanisms for distributing and storing rice yields since then. Referring to the estimates in Table 3 above, which align with the claims that they can produce enough rice to meet their needs, creates stability through abundant rice reserves (Runjung, 2025). These findings are consistent with earlier studies demonstrating that traditional storage systems play a critical role in maintaining food stability in indigenous agricultural societies resources (Prakash *et al.*, 2016; Asogwa, Okoye and Oni, 2017; Yusriadi, 2025). In the context of food security theory, stable local production and surplus reserves are recognized as key indicators supporting the availability dimension, as shown in Table 3 above (Clapp *et al.*, 2022). Within the multidimensional food security framework, stability refers to the ability of food systems to withstand shocks and maintain consistent availability over time. This study extends previous findings by showing that stability depends not only on physical storage capacity but also on cultural discipline and adherence to customary regulations. The presence of strong cultural norms governing harvesting and storage practices ensures that food reserves are preserved and not prematurely depleted. Therefore, food stability in indigenous communities should be understood as the outcome of both technological practices and institutionalized cultural systems.

In terms of the agency dimension of food security, it demonstrates that agency in *Kasepuhan Gelaralam* aligns with the expanded HLPE framework (2020), which defines agency as the capacity of individuals and communities to decide what food they eat, how it is produced, and to actively participate in shaping food system policies. At the micro-level, the absence of customary prohibitions on non-rice foods provides households with dietary agency, allowing them to adapt their livelihoods and food sources through local trade and off-farm employment. This observation supports previous studies emphasizing the role of governance and institutional participation in strengthening food agency within local food

systems as it was reflecting the ability of individuals and communities to influence decisions affecting their food environment (Yusriadi, 2025; Clapp et al., 2022). In *Kasepuhan Gelaralam*, the strongest manifestation of agency lies in its collective negotiation with external governance, specifically the state or in the context of Indonesia, the regional government. While formal governance relies on administrative regulations and top-down agricultural policies, indigenous agency is sustained through cultural legitimacy and structural autonomy (Domingo et al., 2021; Yusriadi, 2025). By maintaining control over its planting schedules, prohibiting the commercialisation of rice, and asserting customary land stewardship vis-à-vis state authorities, *Kasepuhan Gelaralam* does not merely consume food; it actively dictates its policy processes. This observation supports previous studies emphasizing the role of governance and institutional participation in strengthening food agency within local food systems (Clapp et al., 2022; Yusriadi, 2025). This institutional dynamic extends existing literature by showing that indigenous food sovereignty relies on two-way agency: internal self-determination over traditional resources and external policy defense against state encroachment. Consequently, strengthening food agency in indigenous contexts requires recognizing customary institutions as legitimate policy-making entities rather than mere passive targets of national food security programs.

Finally, the dimension of sustainability also shows that they maintain a balance between the three existing aspects, namely social through an inclusive food access scheme (*Pare Tatali, Girik, and Jekat*), economic through the right to work and fulfilling personal needs preference and the prohibition on selling rice to avoid the potential of food insecurity if they sell their food reserve, and environmental, which is reflected in the pattern of interaction between the community and their “Mother” and traditional rice cultivation practices. These traditional practices are consistent with studies suggesting that avoiding chemical use and excessive exploitation helps prevent land degradation (Rachman et al., 2022). Moreover, planting rice annually with a 4 to 6-month break allows the soil to recover nutrients, while using rice fields for other commodities during non-planting seasons aligns with established research on soil nutrient recovery and enrichment compared to monoculture systems (Martínez-Eixarch et al., 2018; Yang et al., 2024). Prior studies corroborate the long-term food security benefits of traditional rice cultivation in *Kasepuhan Gelaralam* (Dalil and Rahardjo, 2019; Kusdiwanggo, 2024). The six-century persistence of these customary institutions underscores the resilience of culturally embedded food practices. This study contributes to existing knowledge by showing that sustainability can be achieved through customary regulation and collective environmental stewardship rather than relying solely on modern technological inputs. Ultimately, integrating indigenous ecological knowledge into contemporary food security policies can potentially provide effective strategies for achieving long-term sustainability.

Limitations

Despite the insights generated from this study, several limitations should be acknowledged. First, as a single-case ethnographic inquiry, the findings are specific to *Kasepuhan Gelaralam* and are not directly generalizable to other indigenous communities. Second, the qualitative focus excludes quantitative measures—such as household food consumption, intake, and expenditure—that could quantitatively complement the food security analysis. Third, the analysis focuses primarily on food security as reflected in culturally embedded practices and customary institutions. Consequently, aspects that are largely managed outside the customary system, such as non-rice food management, market dynamics, and broader economic or environmental influences, were not examined in detail, although they may also shape food security outcomes. Finally, this study applies the six-dimensional food security framework to provide a broad understanding of how indigenous cultural practices relate to different dimensions of food security. While this offers a comprehensive analytical perspective, it also limits the depth with which each dimension can be examined. Future research could explore individual food security dimensions, specific customary practices, or the role of non-rice food systems in greater detail to further enrich understanding of culturally grounded food security.

Recommendation

Based on findings and limitations, several recommendations may be considered to support culturally grounded approaches to food security. First, policymakers and development practitioners could recognize customary institutions as potential partners in food security governance, particularly in contexts where culturally embedded practices help sustain local food systems. Rather than introducing entirely new governance arrangements, future interventions may benefit from building upon existing customary

practices where they remain relevant and effective. Second, although the customary system in *Kasepuhan Gelaralam* primarily supports rice availability, efforts to strengthen food security could also encourage greater diversification of non-rice food commodities to improve dietary diversity and reduce potential nutritional vulnerabilities. Such initiatives might include supporting household food production, promoting diverse crop cultivation, and strengthening local food utilization practices, while respecting the community's cultural values and local context. Finally, greater collaboration between customary institutions and formal governance bodies may provide opportunities to develop more context-sensitive food security strategies. Incorporating indigenous knowledge and locally embedded governance practices into policy discussions could contribute to strengthening food agency and the long-term sustainability of community food systems. Further research is needed to examine how these collaborative approaches may operate across different indigenous contexts.

Conclusion

Food security remains an important issue, particularly for indigenous communities whose livelihoods depend on traditional agricultural and cultural systems. This study examined how observable cultural practices and customary systems within the *Kasepuhan Gelaralam* contribute to the fulfillment of the six dimensions of food security: availability, accessibility, utilization, stability, agency, and sustainability. Using a qualitative-descriptive method with a focused-ethnographic approach, data were collected through interviews, observation, and documentation to understand the relationship between traditional practices and food security outcomes. The results demonstrate that traditional rice cultivation, communal labor systems, customary storage practices, and collective mechanisms play a significant role in maintaining food availability and stability within the community. The existence of strong cultural norms and institutionalized customary rules ensures long-term rice reserves and strengthens the resilience of local food systems. However, the findings also reveal that food commodities other than rice remain relatively vulnerable due to limited production diversity, income variability, and limited knowledge of nutritional diversification.

Overall, this study highlights that food security in indigenous communities is not only influenced by production capacity but also by cultural values, social institutions, and traditional ecological knowledge. The integration of cultural systems into the six-dimensional food security framework provides and extends a more comprehensive understanding of how indigenous communities can sustain food security over time. Therefore, policies and development programs aimed at improving food security should recognize and incorporate these kinds of indigenous cultural systems as key components in achieving sustainable, community-based food security.

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Declaration of Generative AI

During the preparation of this work, the author used *Google Translate* and *Grammarly* to assist with language translation, readability, and academic phrasing. Following the use of these tools, the author reviewed and edited the manuscript as needed and takes full responsibility for the final content of the published article.

Author Contributions

The author is the sole contributor to this article and was responsible for the conceptualization, study design, literature review, data collection and analysis, formal investigation, drafting the initial manuscript, and reviewing and editing the final version.

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Conflict of Interest

The author declares no financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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