

RELATIONSHIP BETWEEN THE IMPLEMENTATION OF VILLAGE FUND PROGRAMMES FOR FOOD SECURITY AND COMMUNITY PERCEPTIONS OF THE ACHIEVEMENT OF VILLAGE SUSTAINABLE DEVELOPMENT GOALS (SDGs)

Iis Andriani¹ Yanuar Fitri², Ira Wahyuni³

¹Masterstudent of Magister Agribisnis Faculty of Agriculture, Universitas Jambi, Jambi, Indonesia

^{2,3}Dosen of Magister Agribisnis Faculty of Agriculture Universitas Jambi, Jambi, Indonesia
Email Corresponding: iandriani505@gmail.com

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Abstract

The Village Fund Program launched in recent years has yielded varying impacts across rural areas in Indonesia. One of the measurable indicators of its effectiveness is the contribution toward achieving the Sustainable Development Goals (SDGs) at the village level. This study aims to (1) identify and understand the village fund programme in the food security sector, (2) examine the implementation of the programme, and (3) analyse the relationship between the implementation of the village fund programme for food security and community perceptions regarding the achievement of Village SDG 2 (Zero Hunger). A purposive sampling method was used to select beneficiaries of the food security program in Gunung Labu Village (Kayu Aro Barat Sub-district), Hamparan Pugu Village (Air Hangat Barat Sub-district), and Talang Kemulun Village (Danau Kerinci Sub-district). The research employed a quantitative approach with an observational design. The results show that the food security program is one of the prioritised components of the Village Fund, annually budgeted through village planning documents and implemented through both physical infrastructure development and community empowerment initiatives. The Chi-square test ($\alpha = 0.05$) indicates a statistically significant relationship between the program's implementation and community perceptions of SDG 2 achievement ($\chi^2 = 20.241 > \chi^2$ table = 9.488). It can be concluded that the implementation of the village fund programme for food security is positively associated with community perceptions of achieving Village SDG 2. Communities that have benefited—either directly or indirectly—from the programme tend to perceive better progress toward SDG 2, while those who have not experienced the benefits tend to perceive lower levels of achievement.

Keywords: Achievement of SDGs goals 2nd Village, Implementation of village programs, Village fund program

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INTRODUCTION

Indonesia is one of the countries with the largest agricultural land area in Southeast Asia. Its extensive agricultural landscape positions Indonesia as an agrarian nation where a significant portion of the population relies on agriculture for their livelihood. The agricultural sector continues to play a central role in the national economy, especially in terms of employment generation and food security. However, this potential is challenged by persistent issues of food insecurity, poverty, and undernutrition. The Global Hunger Index (2021) ranks Indonesia third among Southeast Asian countries in terms of hunger levels, highlighting a serious national concern. This is further supported by the 2021 Indonesian Toddler Nutritional Status Survey (SSGBI), which reports a stunting prevalence of 24.4%, or approximately 5.33 million children under five years old.

To address this issue, Law No. 6 of 2014 on Villages and Presidential Regulation No. 104 of 2021 concerning the State Budget have mandated that village development must be directed towards improving the welfare and quality of life of rural communities. Specifically, at least 20% of village funds must be allocated to food security and livestock development programmes. These regulations are aligned with efforts to support the achievement of Sustainable Development Goal 2 (Zero Hunger), with four performance indicators identified: the provision of agricultural inputs, implementation of food distribution and marketing activities, innovation across all stages of food security, and the utilisation of food outputs.

Kerinci Regency, one of the largest agricultural areas in Jambi Province, is home to 285 villages and is the biggest recipient of village funds in the region. Most residents in Kerinci rely heavily on agriculture, particularly smallholder farming. However, the agricultural sector in Kerinci remains dominated by farmers with low economic capacity, weak independence, and limited access to agricultural innovation. These issues are exacerbated by high food insecurity and a significant number of households categorized as lower-middle income. Kerinci has also been identified as a focus area for stunting reduction by the government.

Several studies have evaluated the effectiveness of village fund utilisation for rural development. Research by Dewi et al. (2022) and Sari et al. (2020) has highlighted the importance of effective governance and community participation in optimizing the use of village funds for local development goals. Other studies, such as those by Setiawan & Fitriani (2021) and Rahman & Fadilah (2022), emphasized the variability in outcomes due to differences in human resource capacity and local governance practices. However, these studies often focus on macro-level policy outcomes or general economic impacts rather than community perceptions and grassroots-level effectiveness of food security initiatives.

The novelty of this study lies in its effort to examine not only the technical implementation of village fund programmes related to food security, but also how these programmes are perceived by the rural community and how this perception relates to the achievement of the SDGs at the village level. This approach offers two distinct contributions: first, it emphasizes the importance of understanding local community perceptions in assessing program outcomes—a perspective often underexplored in prior research. Second, it provides a village-level analysis of programme effectiveness in Kerinci, a regency that has received less scholarly attention despite its strategic role in Jambi’s agricultural economy.

This research is expected to have both internal and external implications. Internally, it can support local government and village leaders in improving the planning, targeting, and monitoring of food security programs. Externally, it contributes to national policy discussions on the optimisation of village funds, particularly in high-priority regions with persistent food insecurity and stunting prevalence. The results can also offer a replicable model for similar agricultural regions in Indonesia and other developing countries with decentralised village funding systems. Ultimately, this research highlights that achieving the goals of food security and zero hunger is not only a matter of fund allocation, but also of inclusive governance, local engagement, and context-sensitive program design.

RESEACRH METHODS

The research locations were selected purposively, namely Gunung Labu Village in Kayu Aro Barat Subdistrict, Hamparan Pugu Village in Air Hangat Barat Subdistrict, and Talang Kemulun Village in Danau Kerinci Subdistrict in Kerinci District. With the consideration that Kerinci Regency is the largest food producer in Jambi Province and also has the largest number of villages in Jambi Province, namely 285 villages, Kerinci Regency has the largest village DNA allocation in Jambi Province. Data collection techniques were carried out by conducting direct observations and interviews with the guide list of questions that have been prepared. Interviews were conducted with respondents who were determined as samples related to this study.

Samples were selected from three of the 285 villages in the regency, based on their extensive food crop cultivation areas. The distribution of samples is as follows:

Table 1. Total Population and Sample

No	Sub-district / Village	Program Beneficiaries	Sample Size (10%)
1	Kayu Aro Barat / Gunung Labu	340	34
2	Air Hangat Barat/ Hamaparan Pugu	234	23
3	Danau Kerinci/ Talang Kemulun	330	33
	Amount	904	90

Source: Sugiyono

The research objectives will be answered descriptively and quantitatively, and to analyse the third objective of the study, namely testing the relationship between the two variables, a 3 x 3 contingency table with the Pearson Chi-Square formula, which is as follows:

$$X_c^2 = \sum \frac{(Fo - Fe)^2}{Fe}$$

Where :

χ^2 = Chi Square value

c = degree of freedom (df/dk)

Fo = Frequency of observed result

Fe = Frequency of expected value

Decision-making rules :

If, X^2 count $< X^2$ table ($\alpha > = 0,05$) accept H_0 ,

If, X^2 count $X^2 >$ table ($\alpha < = 0,05$) reject H_0

To determine the implementation of the village fund programme in the field of food security in each village, there are four indicators, namely:

1. Provision of production input;
2. Implementation of food distribution and marketing activities at the village level;
3. Innovation across all stages of efforts to achieve food security in the village; and,
4. Utilitation of food product

From the indicator comes the interval score (10-30) with a total score: 120

1. Good (Skor 23-30) : (89-120);
2. Medium (Skor 15-22) : (57-88);
3. Less (Skor : 6-14) : (24-56)

Determine how the relationship between the implementation of the village fund programme in the field of food security and community perceptions of the achievement of the 2nd Village SDGs goals, there are three indicators, namely

Food Security in Good Villages - Good Village SDGs Achievement (Score: 70-100):

Medium Food Security in Villages - Medium SDGs Achievement (Score: 41-70)

Food Security in Villages Poor - SDGs Achievement in Villages Poor (Score: 10-40)

RESULTS AND DISCUSSION

The Village Fund Program is a government-initiated scheme designed and regulated to support rural development through allocations from the national budget (APBN). In 2021 and 2022, the programme prioritized the achievement of the Village Sustainable Development Goals (SDGs), including food security initiatives. The Village Fund can be utilised for various rural development activities, such as physical infrastructure and community empowerment. According to Regulation of the Minister of Villages No. 13 of 2020, food security is one of the priority areas eligible for funding. The following are the food security-related Village Fund programmes that were budgeted for in the study area:

Table 2. Village Fund Programmes for Food Security that are budgeted in 2021 and 2022

No	Desa	Kegiatan 2021	Anggaran (Rp)	Kegiatan 2022	Anggaran (Rp)
1	Gunung Labu	Farm Road Improvement	121.426.000	Farm Road Improvement	127.660.000
		Procurement of Granola Potato Seedlings	36.010.000	Chili Cultivation Training and Provision of Chili Seeds	32.000.000
		Procurement of Chili Seed Assistance	20.000.000	Appropriate Technology Training (TTG)	15.000.000

				Village-Owned Enterprises (BUMDES) Capital Participation	
				Village Owned Enterprises Capital Participation	22.000.000
2	Hamparan Pugu	Compost Making Training	42.000.000	Farm Road Improvement	111.397.700
		Culinary Arts Training	21.000.000	Procurement of Paddy Seed Assistance	38.573.299
		Creation of Sustainable Food Housing Areas and Provision of Family Food Seeds	60.465.000	Village-Owned Enterprises Capital Participation	40.000.000
3	Talang Kemulun	Procurement of Assistance for Tilapia Seeds and Feed	45.294.000	Training on Cultivating Paddy Fields using the Legowo row Planting System	27.500.000
		Culinary Arts Training	25.000.000	Irrigation Network Normalization	73.762.400
		Procurement of Fertilizer Assistance for Rice Paddy Fields	75.500.800	Village-Owned Enterprise Capital Procurement	40.000.000
Totally			446.695.800		527.893.399

Source: Village APB and Village and Community Empowerment Office, Kab. Kerinci

Table 2 show is Gunung Labu Village carries out several food security initiatives aligned with the central government's recommended programmes as outlined in Minister of Villages Regulation No. 13 of 2020. These initiatives reflect a bottom-up implementation of national policy directives tailored to local needs and capacities.

a. Procurement of Granola Potato Seedlings

The seedlings were distributed to four potato farmer groups, each receiving 500 kg. These were cultivated collectively using a mutual cooperation system (gotong royong), from land preparation to maintenance and harvesting. The production costs were sourced from members' self-help contributions. Upon harvest, only large-sized potatoes were sold to recoup some costs, while the smaller ones were retained as seed stock for future cycles. This practice supports sustainability and local seed sovereignty, an approach consistent with findings that farmer-led seed multiplication contributes to

long-term input security and reduced dependence on external suppliers (McGuire & Sperling, 2016; Pautasso et al., 2013).

b. Distribution of Chilli Seed Aid

The chilli seed distribution programme targeted all chilli farmers in the village (23 farmers), with each receiving 1,000 seedlings. Unlike the potato initiative, chilli cultivation was conducted individually, with farmers bearing all planting and maintenance costs. The village government solely facilitated seed distribution, yet this input support was considered effective in alleviating initial financial constraints. Research indicates that even limited input subsidies can significantly enhance farmer participation and crop diversification when implemented with strong local oversight (Holden & Lunduka, 2012).

c. Training on chilli cultivation

This training, conducted in fiscal year 2022, was attended by 45 participants—comprising representatives from 11 farmer groups and one from the village government. The training aimed to enhance farmers' adaptive capacity to manage chilli cultivation under variable weather conditions. Post-training evaluations reported increased farmer knowledge, which was reflected in annual monitoring data submitted by village facilitators to the Ministry of Villages. The training also resulted in the distribution of 500 chilli seeds per participant as a post-training stimulus. Extension and training interventions have consistently been shown to improve farmer knowledge and practice, particularly when combined with practical incentives such as input provision (Anderson & Feder, 2007; Davis et al., 2012).

Hampanan Pugu Village carried out the distribution of paddy rice seed assistance, where assistance was given to 188 paddy rice farmers with an amount of 30 kg of seeds per person. This rice paddy seed assistance is distributed to farmers by first identifying the number of farmers and the types of seeds that are suitable and commonly used by farmers in rice fields that are used as cultivation locations. Thus, this activity was carried out optimally in accordance with the needs of the community. Desa Talang kemulun make activities :

a. Distribution of tilapia fingerlings and feed assistance

The assistance was given to all people who cultivate tilapia, namely 31 people, with each receiving 500 tilapia seeds. In addition to fish seeds, feed assistance for tilapia seeds was also provided. The fish seedlings were cultivated individually, some using ponds made of excavated soil and some using ponds made of tarpaulin, fibre or concrete made round and not angled.

b. Distribution of Paddy Rice Fertiliser to 223 paddy rice farmers;

The output of this activity is that farmers find it very helpful to obtain fertiliser, because the scarcity of subsidised fertiliser is very often encountered by farmers during the planting season, because subsidised fertiliser is sometimes available not in accordance with the planting schedule. In addition to the village government's provision of fertiliser assistance to wet-rice farmers, the village government coordinates with local agricultural extension workers, so when fertiliser assistance is distributed, farmers also receive counselling on effective and efficient wet-rice cultivation.

c. Normalisasi jaringan irigasi;

This activity was carried out in a Village Cash Work Intensive (PKTD) manner by utilising community labour in mutual cooperation, namely workers' wages of 50% of the total budget, because the activity uses a lot of human labour compared to the materials that must be provided. The output of this activity, apart from the smooth

irrigation channels throughout the community's rice fields, is that the community gets paid to work in development activities that use village funds. This activity is called village community empowerment, which is a priority for the development system in the village.

In general, the provision of food production inputs in the village is perceived positively by the community. This is reflected in the results of a perception survey, in which 40% of respondents rated the support as good, 37.8% considered it moderate, and only 22.2% expressed dissatisfaction. These figures indicate that while the majority of beneficiaries appreciated the assistance provided—such as seeds, fertilisers, and agricultural training—there remains room for improvement in ensuring that all farmers can access and benefit from the programmes equally and effectively.

Building upon these production support efforts, the village also implemented a series of food distribution and marketing activities to enhance food availability and support local agribusinesses. These activities were rolled out gradually during the fiscal years 2021 and 2022, funded through the Village Fund (Dana Desa) with a total allocation of IDR 462,483,700. The scope of these initiatives included not only the distribution of food commodities but also strategies to improve local food marketing channels and address gaps in supply chain infrastructure. The specific components and outcomes of these activities are outlined in the following section.

Table 4. Food Security Activities from Food Distribution and Marketing Indicators in the Village

No	Village	Activity	Budget(IDR/year)
1	Gunung Labu	Farm Road Improvement	249.086.000
		Capital Injection to Village-Owned Enterprise (BUMDes)	22.000.000
2	Hampanan Pugu	Farm Road Improvement	111.397.700
		Capital Injection to BUMDes	40.000.000
3	Talang Kemulun	Capital Injection to BUMDes	40.000.000
	Amount		462.483.700

Source: Processed Research Data

From Table 4 show is Gunung Labu Village, carried out the following activities:

a. Improvement of Farm Roads

In 2021, farm road improvement was carried out in Dusun 1 with a budget of IDR 121,426,000, covering a volume of 47 m². In 2022, the activity was implemented in Dusun 3 with a budget of IDR 127,660,000, covering a volume of 50 m² in the form of concrete pavement construction (rabat beton).

b. Capital Injection to BUMDes

Gunung Labu Village has established a Village-Owned Enterprise (BUMDes) that operates in the procurement and distribution of agricultural tools and agrochemicals. The BUMDes offers products at prices below prevailing market rates, while adhering to the mandate of not undermining or displacing individual business activities within the community. Established in 2019, this enterprise was initially funded through the Village Fund sourced from the national budget (APBN), with a capital injection of IDR 60,000,000. Since its inception, the BUMDes has contributed to generating local revenue (Pendapatan Asli Desa/PAD), with profit-sharing mechanisms implemented in line with technical guidelines and regulatory

frameworks. In 2022, it received an additional IDR 22,000,000 through the village's food security programme. However, the enterprise's development has faced several challenges, including operational fluctuations linked to leadership changes. During these transitions, business activities were temporarily suspended. The experience of BUMDes Gunung Labu reflects broader patterns observed across rural Indonesia, where the effectiveness of BUMDes in stimulating local economic growth is closely tied to governance quality, managerial capacity, and stakeholder participation (Riyadi et al., 2021; Arifin et al., 2023). While BUMDes have been widely promoted as instruments for rural economic transformation, their long-term viability often depends on consistent institutional support and adaptive management strategies in the face of organisational change.

Hampanan Pugu Village implemented the following activities:

a. Improvement of Farm Roads

The activity was carried out in 2022 with a total budget of IDR 111,397,700 and a road construction volume of 45 m². The project involved concrete pavement construction (rabat beton), implemented in Dusun Sake Permai to provide access to the community's rice fields. As a result of this project, local farmers now have access to a proper road for distribution activities, such as transporting seeds, fertilizers, and harvested crops using two-wheeled vehicles, which previously could only be accessed on foot.

b. Capital Injection to BUMDes

Hampanan Pugu Village has operated a Village-Owned Enterprise (BUMDes) since 2017, initially focused on renting out party equipment such as tents, sound systems, stages, and others. However, the BUMDes became inactive and non-operational for some time. In 2021, the BUMDes management was reorganized, retaining the same type of business. In 2022, through the food security program, the BUMDes received an additional capital injection of IDR 40,000,000 to expand into a new business line involving the sale of liquid organic fertilizer (compost).

Talang Kemulun Village implemented the following activity:

The only activity under the food distribution and marketing sector was a capital injection to the Village-Owned Enterprise (BUMDes) amounting to IDR 40,000,000. The BUMDes in Talang Kemulun Village operates a business unit focused on collecting rice and corn harvests, which are then processed and redistributed to broader market areas. The BUMDes was established in 2018 with an initial capital of IDR 80,000,000 sourced from the Village Fund. According to interviews with the village government, the BUMDes has begun to generate locally generated revenue (PAD), although still relatively modest. Nevertheless, it has already contributed to reducing unemployment in the village. Overall, across the three villages, the implementation of Village Fund programs in the food security sector – based on the indicator of Food Distribution and Marketing Efficiency – was assessed as moderate by 40% of respondents. Meanwhile, 35.7% rated it as good, and 23.3% rated it as poor.

Innovative practices to support food security were also identified across all stages of programme implementation in the target villages. In this context, several noteworthy initiatives were undertaken in three villages, namely:

Table 5. Food Security Activities from Food Distribution and Marketing Indicators in the Village

No	Village	Activity	Budget(IDR/year)
1	Gunung Labu	Appropriate Technology Training (TTG)	15.000.000
2	Hampanan Pugu	Development of Sustainable Home Food Area and Distribution of Household Food Seeds	60.465.000
		Training on Compost Fertilizer Production	42.000.000
3	Talang Kemulun	Training on Rice Cultivation Using the "Jajar Legowo" Planting System	27.500.000
	Amount		144.965.000

Source: Processed Research Data

Food security activities for innovation indicators of all stages of efforts to realise food security in the village are activities to increase human resources in the development of new innovations or the ability to create and accept technology in the development of agricultural activities, with details of activities as follows:

1. Gunung Labu Village, Gunung Labu Village, conducted training activities on TTG for processing food crops. Participants were educated to use TTG tools to make chips of taro, potatoes, sweet potatoes and others. The activity aims to improve the skills of productive mothers in developing household businesses that have been implemented, with the manufacturing system still using manual graters and packaging methods that are still not optimal. The training conducted by the village government lasted for two days. The first day delivered material on the introduction and advantages of using TTG, and the second day was a hands-on activity of introducing TTG tools and how to use them.
2. Hampanan Pugu Village implemented the following activities:
 - a. Development of Sustainable Home Food Areas and Distribution of Household Food Seeds; This activity was carried out through the *dasa wisma* program, utilizing vacant land and home yards as plots for cultivating family food crops and medicinal plants (TOGA).
 - b. Training on Compost Fertilizer Production; The training involved 28 participants, consisting of 8 representatives from each of the three neighborhood units (RT), along with one representative from each neighborhood head. The outcome of the training was that all participants gained the ability to produce compost fertilizer from household organic waste.
3. Talang Kemulun Village conducted a training program on paddy rice cultivation using the *Jejer Legowo* planting system. A total of 35 participants, consisting of farmer representatives from each neighbourhood unit (RT), took part in the training. Based on interview findings, the training aimed to reduce pest infestations and improve agricultural productivity. However, one of the main challenges encountered was the reluctance of some farmers to adopt the new planting system. They perceived that shifting from traditional methods to a new system may not necessarily lead to successful or optimal implementation.

An overview of the implementation of village funds in the field of food security in an effort to improve human resources, as well as the success of the village government in conducting approaches and socialisation related to the use of village funds that can be implemented to improve community food security. From the innovation indicator, 41.1% of the value is good and medium value with a presentation of 37.8% and less value as much as 21.1%.

An analysis was conducted to explore the relationship between the implementation of the Village Fund Programme for food security and community perceptions regarding the achievement of the Sustainable Development Goals (SDGs) in one of the target villages. Particular attention was given to the aspect of providing production inputs – such as seeds, fertilisers, and agricultural training – and how these were perceived by the community in relation to the village’s progress toward sustainable development. The findings indicate that there is a perceived alignment between the availability of essential agricultural inputs and the broader goals of poverty reduction, food security, and improved livelihoods as outlined in the SDGs. This suggests that effective implementation of production support through the Village Fund has the potential to contribute meaningfully to local sustainable development efforts.

Table 6. Relationship between the Provision of Production Needs and Community Perceptions of Achieving SDGs in the Village

Provision of Production Inputs	Achieving SDGs			Amount
	Good	Moderate	Less	
Good	21	7	8	36
Moderate	10	17	7	34
Less	7	6	7	20
Amount	38	30	22	90

Source: Results of Questionnaire Data Processing

Table 6 illustrates the relationship between the provision of production inputs and community perceptions regarding the achievement of the second Village SDG in the study area. The data indicate a consistent tendency: when the provision of production inputs is rated as good, the perceived achievement of the second Village SDG – related to food security and poverty reduction – is also high. Conversely, when input provision is inadequate, community perceptions of progress tend to be lower. Based on the Chi-Square test, the calculated value (X^2 count) was 10.371, while the critical value from the Chi-Square table (X^2 table) was 9.488. Since X^2 count $>$ $X^2\alpha$ at the 95% confidence level with a 5% significance threshold ($df = 4$), the null hypothesis (H_0) is rejected. This statistically confirms that the level of input provision has a significant influence on community perceptions of the achievement of the second Village SDG.

These findings are consistent with broader empirical studies that show access to quality agricultural inputs plays a vital role in increasing food production, improving household welfare, and supporting rural communities in achieving SDG targets (Adjognon et al., 2017; Frelat et al., 2016). Moreover, community perceptions are shaped not only by outcomes but also by the transparency, inclusiveness, and perceived fairness in the implementation of rural development programmes (de Janvry et al., 2015). As such, the perceived impact of Village Fund interventions in food security is crucial for sustaining public support and local engagement in SDG-oriented policies.

The relationship between the implementation of food distribution and marketing activities and community perceptions regarding the achievement of the village's Sustainable Development Goals (SDGs) also reveals important insights. Effective implementation of these activities—such as the timely distribution of food aid and support for local agricultural markets—can enhance food availability, reduce vulnerability, and strengthen the economic resilience of rural households. When such programmes are perceived as well-managed and inclusive, they tend to foster more positive community assessments of the village's progress toward achieving the SDGs, particularly those related to food security, poverty reduction, and inclusive economic growth. Conversely, when implementation is perceived as uneven or lacking transparency, community confidence in the contribution of such programmes to sustainable development goals may decline.

Table 7. The Relationship between Implementation Aspects of Food Distribution and Marketing Activities and Community Perceptions of Achieving the Village's Sustainable Development Goals (SDGs).

Distribution&Marketing	Achieving SDGs			Amount
	Good	Moderator	Less	
Good	21	6	6	33
Moderator	12	17	7	36
Less	8	7	6	21
Amount	41	30	19	90

Source: Results of Questionnaire Data Processing

Table 7 shows how the implementation of food distribution and marketing activities relates to community perceptions of the achievement of the 2nd Village SDGs in the research area, namely, there is a tendency that if the implementation of food distribution and marketing activities is good, then the achievement of the 2nd Village SDGs will also be good and vice versa; if food distribution and marketing activities are still lacking, the level of acceleration of the achievement of the 2nd Village SDGs goals is also lacking. Based on statistical tests (Chi-Square Test), the value of X^2 count is 13.343 and X^2 table is 9.488; X^2 count $>$ $X^2\alpha = 95\%$ with a critical limit of $5\% = df = 4$. Reject H_0 , meaning that the level of implementation of food distribution and marketing activities causes differences in community perceptions of achieving the 2nd Village SDGs goals. Some of the factors that cause the trend of differences in community perceptions of the achievement of the 2nd Village SDGs include the high and low ability of the community to distribute and market food both in the village and in the wider market.

The relationship between innovation across all stages of food security efforts and community perceptions regarding the achievement of Sustainable Development Goals (SDGs) in villages demonstrates a significant linkage. Innovations implemented at various stages—ranging from input provision, cultivation methods, to distribution and marketing—have influenced how communities perceive the village's overall development progress. As reflected in Table 8, when innovations are perceived as relevant, accessible, and beneficial, community members tend to associate them with tangible improvements in food security and broader SDG achievements, such as increased productivity, reduced food shortages, and enhanced local economic participation. This underscores the importance of not only implementing technical innovations but also ensuring community engagement and responsiveness to local needs in the process of achieving sustainable rural development.

Table 8. Relationship between Innovation Aspects of All Stages of Efforts to Realise Food Security and Community Perceptions of Achieving Sustainable Development Goals (SDGs) in Villages

Inovation	Achieving SDGs			Amount
	Good	Moderator	Less	
Good	22	8	7	37
Moderator	10	15	9	34
Less	6	7	6	19
Amount	38	30	22	90

Source: Results of Questionnaire Data Processing

Table 8 shows how the relationship of innovation from all stages of efforts to realise food security to community perceptions of the achievement of the 2nd Village SDGs in the research area, namely there is a tendency that the level of innovation capability towards achieving the 2nd Village SDGs is good, then the achievement of the 2nd Village SDGs will also be good and vice versa. Based on statistical tests (Chi-Square Test), the value of X^2 count is 9.93 and X^2 table is 9.488, X^2 count $>$ $X^2\alpha = 95\%$ with a critical limit of 5% =df= 4 Reject H_0 , meaning that the level of innovation capability of all stages in realising food security causes differences in the level of public perception of the achievement of the 2nd Village SDGs goals. Some of the factors that cause the trend of differences in community perceptions of the level of achievement of the 2nd Village SDGs include village government human resources, village institutions, and the ability of the community to develop innovations both from the cultivation stage to the ability to manage post-harvest.

The relationship between food product utilisation and community perceptions of achieving Sustainable Development Goals (SDGs) in villages highlights the importance of how agricultural outputs are managed and consumed. As shown in Table 9, communities that effectively utilise food products—whether for household consumption, local market sales, or seed preservation—tend to report more positive perceptions of SDG achievement. This includes improvements in food availability, income stability, and nutritional outcomes. Proper utilisation ensures that food production efforts are not only productive but also sustainable and impactful at the household level. These perceptions suggest that the success of food security programmes is not solely dependent on production, but also on how the resulting outputs are used to support long-term community welfare and development.

Table 9. Relationship between Food Product Utilisation and Community Perceptions of Achieving Sustainable Development Goals (SDGs) in Villages

Food Product Utilitation	Achieving SDGs			Amount
	Good	Moderator	Less	
Good	20	6	6	32
Moderator	10	17	9	36
Less	7	6	9	22
Amount	37	29	24	90

Source : Results of Questionnaire Data Processing

Table 9 shows the relationship between the utilisation of food products and the community's perception of the achievement of the second Village Sustainable Development Goal (SDG), which focuses on ending hunger and improving food security. The data reveal a tendency: when the community demonstrates a good or moderate ability to manage and utilise food products—such as processing harvests, preserving seeds, or distributing for household and local market consumption—the perceived achievement of the second Village SDG is also rated as good or moderate. Conversely, when food utilisation practices are weak or inefficient, the perceived progress toward SDG attainment is also low. Based on statistical analysis using the Chi-Square test, the calculated value (X^2 count) was 16.138, which exceeds the critical value (X^2 table) of 9.488 at a 95% confidence level ($df = 4$), thereby rejecting the null hypothesis (H_0). This indicates a statistically significant relationship between the level of food product utilisation and community perceptions of SDG progress.

The variation in perception can be attributed to several contextual factors, including disparities in community capacity to manage agricultural outputs and the role of local governance in facilitating collaborative rural development initiatives. Studies have shown that the effective utilisation of food products at the household and community level plays a critical role in improving food security, reducing post-harvest losses, and supporting sustainable livelihoods (Lal, 2020; Fanzo et al., 2021). Moreover, integrated rural planning that includes inter-village cooperation and resource sharing has been recognised as a key enabler in accelerating the achievement of SDG targets in rural contexts.

Table 10 illustrates the relationship between the implementation of the Village Fund Programme for food security and the community's perception of the achievement of Sustainable Development Goals (SDGs) in the village context. The data indicate a trend in which villages that optimally utilise the Village Fund for food security initiatives—such as infrastructure development, agricultural empowerment, and support for local food systems—tend to have communities that perceive the progress toward SDG achievement, particularly SDG 2 (Zero Hunger), as more substantial. Conversely, where the allocation and realisation of Village Funds are not directed effectively toward food-related priorities, community perceptions of SDG progress are often more negative or indifferent. This pattern suggests that the quality and relevance of programme implementation significantly influence how communities evaluate developmental outcomes. The Village Fund, when aligned with local food security needs, can enhance food accessibility, promote inclusive economic development, and reduce rural vulnerability—thereby reinforcing the foundational goals of the SDGs at the grassroots level.

Tabel 10. The Relationship between the Implementation of the Village Fund Programme for Food Security and Community Perceptions of the Achievement of Sustainable Development Goals (SDGs) in Villages

DD	Achieving SDGs			Amount
	Good	Moderator	Less	
Good	19	6	7	32
Moderator	10	17	12	39
Less	6	6	7	19
Amount	35	29	26	90

Source : Results of Questionnaire Data Processing

Table 10 presents the relationship between the implementation of Village Fund programmes aimed at enhancing food security and community perceptions regarding the achievement of the second Village Sustainable Development Goal (SDG), which targets the elimination of hunger in rural areas, particularly in Kerinci Regency. The data suggest that effective implementation of these programmes—conducted in alignment with technical guidelines and statutory regulations—correlates with more positive community perceptions of progress toward SDG 2. In contrast, suboptimal implementation is perceived to result in lower achievement of the goal.

Statistical analysis using the Chi-Square test yields a calculated value ($X^2 = 20.241$), which exceeds the critical Chi-Square value ($X^2 = 9.488$) at a 95% confidence level with 4 degrees of freedom. Consequently, the null hypothesis is rejected, indicating a statistically significant relationship between the implementation of food security-related Village Fund programmes and the community's perception of SDG 2 achievement (Bappenas, 2020; Wicaksono & Ramadhan, 2022). This significant association reflects the importance of several implementation components, including: (1) timely provision of agricultural production inputs, (2) local food distribution and marketing strategies, (3) innovation in food security interventions, and (4) the effective utilisation of food products. Communities that benefit from such integrated interventions tend to perceive higher progress in achieving SDG 2, whereas those in areas with inadequate programme delivery report lower satisfaction and progress (Gunawan et al., 2023; Darmawan et al., 2022).

Variations in programme outcomes are largely attributed to differences in the capacity of village governments, particularly in managing Village Funds in accordance with technical standards. Additional challenges include insufficient dissemination of programme objectives to community members, limited engagement of stakeholders in village planning processes, and a frequent mismatch between development activities and local needs. These implementation gaps weaken community participation and reduce the perceived benefits of Village Fund programmes (Fitriani et al., 2021; Nuryanti & Suryani, 2020; Syahza et al., 2023). Ultimately, this study underscores that the successful attainment of food security objectives under the Village SDGs framework is contingent upon transparent governance, participatory planning, and community-oriented implementation of Village Fund allocations (World Bank, 2021; Syukri et al., 2021).

CONCLUSION

The village fund programme in the field of food security is one of the priority programmes of village funds, budgeted in village planning documents every year with various types of activities according to the results of village deliberations and the needs of village communities as beneficiaries. The implementation of the village fund programme in the field of food security is carried out in the form of physical development and empowerment activities, in accordance with the determination of priorities for the use of village funds in each village. The success of the implementation of the village fund programme in the field of food security has been felt by the community, but the level of success is different in each village depending on the accuracy of the needs with the types of activities implemented and the professionalism of the village government in carrying out activities in the village. The implementation of the village fund programme in the field of food security is related to community perceptions of the achievement of the 2nd Village SDGs. This can be seen from the

achievement of the indicators of the implementation of the village fund programme on the achievement score of fulfilling community needs regarding the achievement of the 2nd Village SDGs.

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