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PERFORMANCE ANALYSIS OF THE AGRICULTURAL DEVELOPMENT SYSTEM IN GORONTALO PROVINCE: ECONOMIC STRUCTURE, GROWTH, AND SUBSECTORAL CONTRIBUTIONS

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Abstract

Agriculture, forestry, and fisheries remain central to Gorontalo Province's economy, while uneven subsectoral performance underscores the need for integrated development planning. This study examines the sector's economic structure, growth dynamics, and contributions to regional and national output during 2021–2025. A descriptive quantitative approach was applied to annual secondary data from Statistics Indonesia, using gross regional domestic product at current and constant prices. Sectoral composition, year-on-year real growth, and Gorontalo's share of corresponding national gross domestic product were assessed across seven subsectors. Results show that the sector's contribution to regional output declined from 37.47% to 35.93%, while real growth recovered from −1.63% in 2021 to 3.08% in 2025, remaining below overall regional growth. Food crops retained the largest structural share, although their relative contribution weakened, whereas fisheries gained importance. Gorontalo's contribution to national agricultural output remained relatively stable, ranging from 0.76% to 0.79%. These findings indicate persistent structural concentration and uneven growth across interconnected subsectors, highlighting the importance of coordinated resource management. The study recommends an Integrated Farming System approach that connects food crops, horticulture, plantations, livestock, agricultural services and hunting, forestry, and fisheries to strengthen value addition, resource efficiency, and long-term sustainability.

Keywords: *Agricultural Development System; Economic Structure; Agricultural Growth; Subsectoral Contributions; Integrated Farming System*

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1. Introduction

Agricultural development occupies a strategic position in the process of economic development, as the production of food and primary commodities generates flows of value added, income, and demand for other economic activities. The performance of the agricultural development system is reflected in the sector's ability to utilize production resources, enhance productivity, and sustain its economic contribution amid ongoing structural changes in the economy. Dorinet et al. (2021) demonstrated that agricultural labor productivity is associated with shifts in economic activity toward other sectors. Karayalcin and Pintea (2022) emphasized that productivity improvements and barriers to intersectoral mobility influence the outcomes of economic transformation. The findings of Daymard (2025) also highlight the relevance of agricultural productivity to the evolution of a country's production structure, particularly through linkages among economic sectors.

Changes in economic structure constitute an essential dimension of agricultural development assessment, as they reveal the relative position of the primary sector amid the expansion of manufacturing and service activities. Shifts in the proportion of value added may occur simultaneously with increases in agricultural production, indicating that a declining sectoral share requires careful interpretation. Li et al. (2024) demonstrated that capital investment and agricultural productivity are associated with labor mobility and the development of the secondary sector. Zhou et al. (2026) explained that agricultural institutional reforms can influence industrial diversification at the regional level. Therefore, assessments of economic structure need to consider changes in the composition of production, intersectoral linkages, and agriculture's capacity to stimulate regional economic activity on a sustained basis.

Economic growth in the agricultural sector reflects changes in the real value added generated over a given period. This indicator provides information on production dynamics after the effects of price changes have been separated through the use of constant prices. Meanwhile, sectoral contribution represents the extent of agriculture's role in generating total economic value added during the same period. The distinction between growth and contribution becomes particularly important when a sector continues to dominate gross regional domestic product (GRDP) while its growth rate lags behind that of other economic activities. Halim et al. (2025) found that structural transformation across regions in Indonesia has occurred at varying levels of intensity. Yuliani and Nasrudin (2024) further demonstrated that shifts in the economic activities of agricultural households are influenced by socioeconomic conditions and access to non-agricultural employment opportunities.

Evaluating agricultural development performance also requires an understanding of the position of leading sectors within the regional economy. Regions with different resource characteristics may exhibit variations in their economic base sectors, levels of production specialization, and rates of economic growth. Assessments based on GRDP contributions, growth rates, and sectoral shift analysis help explain the relationship between regional production capacity and changes in economic structure. Maulana and Maulana (2023) demonstrated that identifying leading sectors and changes in regional economic conditions can strengthen agricultural development planning. Faqih (2021)

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showed that identifying leading commodities and shifts in their production provides a foundation for mapping agricultural potential. Such approaches enrich the interpretation of sectoral performance across regions with differing characteristics.

Aggregate agricultural performance is determined by various subsectors, each with distinct production characteristics, input requirements, and growth patterns. Food crops, horticulture, plantations, livestock, agricultural services, forestry, and fisheries may contribute differently to regional value added. Ramli and Hiola (2019) highlighted the importance of identifying economic base commodities within the food crop and plantation subsectors to understand regional economic potential. Khusniati and Wuri (2025) demonstrated that comparative advantages in the plantation subsector may be accompanied by differences in growth rates and interregional competitiveness. Examining subsectoral contributions and growth rates can help identify concentrations of value added and the sources of changes in agricultural performance. Accordingly, aggregate assessments need to be complemented by a detailed examination of their constituent subsectors.

At the national level, agricultural development in Indonesia is characterized by considerable diversity in economic structures across provinces, meaning that developments within the same sector may generate different regional impacts. Some regions maintain a substantial agricultural share, while others experience increasing contributions from manufacturing and service activities. Abduh (2025), in a study of sectoral linkages across 34 provinces, demonstrated that agriculture-based regions possess economic multiplier potential, although their intersectoral production linkages remain limited. Andriansyah et al. (2023) associated regional growth with structural changes accompanied by improvements in sectoral productivity. Comparisons across sectors and subsectors are therefore necessary to provide a more accurate understanding of changes in agriculture's position within GRDP, particularly during periods of accelerating regional economic growth.

In Gorontalo Province, the dominance of agriculture, forestry, and fisheries remains clearly evident in the composition of regional GRDP. Badan Pusat Statistik Provinsi Gorontalo (2026) reported that these economic activities generated value added of Rp21.713,34 billion in 2025, accounting for approximately 36,82% of total GRDP at current prices. During the same period, the regional economy grew by 5,71%, while agriculture, forestry, and fisheries recorded growth of 4,14%. This disparity in growth rates underscores the importance of examining the capacity of the region's largest economic sector to keep pace with overall regional economic development. Sendow et al. (2024) previously identified differences in sectoral competitiveness between Gorontalo and North Sulawesi. The dominance of agricultural value added must therefore be examined in conjunction with its growth dynamics.

A more specific challenge is evident in the uneven performance of agricultural subsectors in Gorontalo. Data from BPS Provinsi Gorontalo (2026) indicate that the food crop subsector grew by 7,03% in 2025, while horticulture recorded growth of only 0,21%, livestock 0,75%, and fisheries 0,82%, whereas the plantation subsector contracted by 2,14%. In the same year, food crops contributed Rp10.918,16 billion in value added, substantially exceeding the contributions of several other subsectors. Hippy

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and Aisyah (2023) identified differences in the economic potential and competitiveness of regional agricultural commodities, while Ramadhani and Cono (2025) demonstrated the dynamics of the economic base in Pohuwato Regency. These patterns reveal disparities between dominant subsectors and those experiencing constrained growth, suggesting that aggregate analysis may obscure the underlying sources of changes in agricultural performance. Such diversity underscores the need for an integrated assessment of economic structure, growth, and subsectoral contributions.

2. Literature Review

The performance of the agricultural development system refers to the extent to which agricultural development initiatives successfully transform resources, policies, technologies, and institutional support into measurable outcomes in agricultural production and the welfare of farm operators. Its assessment encompasses output growth, land and labor productivity, input-use efficiency, and the system's capacity to meet food requirements. Siregar and Budiasih (2026) emphasized that technical efficiency and productivity are important measures for assessing agricultural sector performance. Furthermore, Sánchez and Cicowiez (2022) demonstrated that the achievement of development objectives should be evaluated by considering the interrelationships among agricultural value added, rural household welfare, and trade performance. Geck et al. (2023) broadened this assessment by incorporating environmental, social, and economic indicators, thereby enabling evaluations to reflect the overall functioning of the system.

Sustainable agricultural development is the process of advancing the agricultural sector while maintaining the continuity of production and farmers' incomes through responsible natural resource utilization and improvements in the social conditions of rural communities. This concept integrates economic viability, environmental protection, social equity, and development governance within a long-term perspective. Kusnandar et al. (2019) emphasized the importance of participation and empowerment among supply chain actors in sustaining long-term changes. From an ecological perspective, Cappelli et al. (2022) explained that crop diversity and its interactions with soil microorganisms support agroecosystem functioning. Meanwhile, Amaruzaman et al. (2023) highlighted the need to align food production policies with environmental conditions, community interests, and local development objectives.

3. Research Method

This study employed a quantitative approach using a descriptive method to analyze the performance of the agricultural development system in terms of economic structure, growth, and subsectoral contributions. The analysis utilized time-series data covering the 2021–2025 period to systematically identify developments and changes in agricultural sector performance.

The study was conducted in Gorontalo Province, encompassing all regencies and municipalities within the province. The observation period covered 2021–2025, while data collection and processing were carried out in 2026. The study area was selected

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based on the dominance of the agricultural sector in the economic structure of Gorontalo Province.

The study utilized secondary data obtained from Badan Pusat Statistik (BPS) Provinsi Gorontalo and BPS Republik Indonesia. The data included gross regional domestic product (PDRB) and gross domestic product (PDB) by industry at constant prices (ADHK), covering the agricultural sector and its seven subsectors throughout the observation period. Data were collected using a documentation technique by compiling official BPS publications and statistical tables. The data were subsequently classified by year, sector, subsector, and price valuation basis, and their consistency was verified before processing and analysis.

Data analysis employed a descriptive quantitative approach based on three main indicators: GRDP structure, growth rate, and contribution to national agricultural GDP.

a. GRDP Structure Analysis
   This analysis was conducted to measure the contribution of each agricultural subsector to the formation of total GRDP in Gorontalo Province using data at current prices (ADHB), according to the following formula:

$$\mathbf{SP} = \left(\frac{\text{Agricultural subsector PDRB}}{\text{Total Gorontalo PDRB}}\right) \times 100\%$$

   The calculation results were used to identify dominant subsectors, changes in economic composition, and trends in shifts in the agricultural structure throughout the study period.

b. GRDP Growth Rate Analysis
   Growth analysis was conducted to measure changes in the real value added generated by the agricultural sector and its subsectors based on constant-price data (ADHK), using the following equation:

$$\mathbf{LP} = \left[\frac{PDRB_t - PDRB_{t-1}}{PDRB_{t-1}}\right] \times 100\%$$

   Where: $PDRB_t$ represents the GRDP value in the current year, while $PDRB_{t-1}$ represents the GRDP value in the preceding year. The results were used to identify growth acceleration, deceleration, and contraction, and were subsequently compared with the overall economic growth of Gorontalo Province.

c. Analysis of GRDP Share in National Agricultural GDP
   This analysis measured the contributions of Gorontalo's agricultural sector and subsectors to their corresponding sectors and subsectors at the national level using current-price data (ADHB), according to the following formula:

$$\mathbf{SH} = \left(\frac{\text{Gorontalo agricultural PDRB}}{\text{National agricultural PDB}}\right) \times 100\%$$

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The calculation was performed for each subsector using comparable classifications. The results were used to evaluate the relative position of Gorontalo's agricultural sector within the national economy and changes in its contribution over the 2021–2025 period.

4. Result

The findings of this study provide an overview of the performance of the agricultural development system in Gorontalo Province during the 2021–2025 period through an analysis of GRDP structure, sectoral economic growth rates, and the contributions of the agricultural sector and its subsectors to the national economy. These analyses provide insights into the development, dynamics, and strategic position of the agricultural sector in regional economic development.

4.1 GRDP Structure of the Agricultural Sector in Gorontalo Province

The GRDP structure of the agricultural sector in Gorontalo Province is presented in Table 1 below.

Table 1. GRDP Structure of the Agricultural Sector in Gorontalo Province

No	Agricultural Subsector	Years (Percent)				
		2021	2022	2023	2024	2025
1	Food Crops	19.76%	19.02%	19.05%	18.24%	17.75%
2	Horticultural Crops	2.56%	2.52%	2.46%	2.49%	2.54%
3	Plantation Crops	2.98%	3.19%	3.12%	3.13%	3.22%
4	Livestock	2.70%	2.69%	2.66%	2.61%	2.72%
5	Agricultural Services and Hunting	0.39%	0.39%	0.39%	0.39%	0.38%
6	Forestry and Logging	0.60%	0.59%	0.58%	0.58%	0.53%
7	Fisheries	8.49%	8.47%	8.38%	8.58%	8.79%
Total Agricultural Sector GRDP		**37.47%**	**36.86%**	**36.63%**	**36.02%**	**35.93%**
Total GRDP		**100%**	**100%**	**100%**	**100%**	**100%**

Source: Processed data, 2026.

Based on Table 1, the GRDP structure of Gorontalo Province during 2021–2025 indicates that agriculture, forestry, and fisheries remained the main pillars of the regional economy, although their contribution gradually declined from 37,47% to 35,93%, representing a decrease of 1,54 percentage points. Food crops constituted the subsector with the largest contribution, but their share declined from 19,76% to 17,75%. This condition is associated with Gorontalo's characteristics as a maize- and rice-producing region, where agricultural activities are distributed across various regencies and serve as a source of livelihood for rural communities. The declining contribution indicates a reduction in the relative importance of food crops within the economic structure, which may be influenced by differences in the development of value added across economic sectors.

Meanwhile, the fisheries subsector recorded an increase in its contribution from 8,49% in 2021 to 8,79% in 2025, consistent with the potential of coastal fisheries and the

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economic activities of fishing communities in Gorontalo. Plantation crops also recorded an increase from 2,98% to 3,22%, while livestock remained relatively stable within the range of 2,61–2,72%, reflecting the continued importance of plantation commodities and livestock farming in the local economy. Conversely, the contribution of forestry and logging declined from 0,60% to 0,53%, while agricultural services and hunting tended to stagnate. Horticulture exhibited limited fluctuations within the range of 2,46–2,56%. These conditions demonstrate that Gorontalo's agricultural economic structure remains concentrated in food crops and fisheries, with differing trends in subsectoral contributions throughout the observation period.

4.2 GRDP Growth Rate of the Agricultural Sector in Gorontalo Province

The GRDP growth rate of the agricultural sector in Gorontalo Province is presented in Table 2 below.

Table 2. GRDP Growth Rate of the Agricultural Sector in Gorontalo Province

No	Agricultural Subsector	Years (Percent)				
		2021	2022	2023	2021	2025
1	Food Crops	-3.74%	2.56%	-0.38%	1.70%	2.34%
2	Horticultural Crops	-1.44%	-0.25%	5.35%	6.51%	-3.52%
3	Plantation Crops	6.97%	0.26%	4.36%	7.38%	0.24%
4	Livestock	-0.42%	1.49%	2.03%	8.72%	5.87%
5	Agricultural Services and Hunting	-0.87%	2.91%	3.53%	3.48%	1.89%
6	Forestry and Logging	-1.92%	0.20%	4.79%	-4.95%	6.47%
7	Fisheries	-0.20%	1.29%	6.54%	7.09%	6.50%
Total Agricultural Sector GRDP		**-1.63%**	**1.76%**	**2.29%**	**4.23%**	**3.08%**
Total GRDP		**-0.02%**	**2.40%**	**4.04%**	**4.50%**	**4.11%**

Source: Processed data, 2026.

Based on Table 2, the GRDP growth rate of the agricultural sector in Gorontalo Province exhibited fluctuations throughout the 2021–2025 period. In 2021, the agricultural sector experienced a contraction of 1,63%, followed by a gradual recovery, with growth rates of 1,76% in 2022 and 2,29% in 2023. Growth reached 4,23% in 2024 before decelerating to 3,08% in 2025. Despite this recovery, agricultural sector growth remained below the overall GRDP growth rate of Gorontalo Province throughout the observation period. This condition indicates that the development of agricultural activities has not been sufficient to keep pace with the overall growth of the regional economy. This situation warrants particular attention, given that agriculture is an important sector supporting economic activities and the livelihoods of rural communities in Gorontalo.

Furthermore, growth across agricultural subsectors revealed substantial differences in performance. The fisheries subsector demonstrated positive growth, reaching 6,54% in 2023, 7,09% in 2024, and 6,50% in 2025, reflecting the role of fisheries activities in Gorontalo's coastal areas. Livestock also maintained positive growth of 5,87% in 2025, although this represented a slowdown compared with the preceding year.

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Conversely, horticulture contracted by 3,52% in 2025 after recording growth of 6,51% in 2024, while plantation crop growth weakened from 7,38% to 0,24%. Food crops experienced a recovery, reaching a growth rate of 2,34% in 2025, while forestry grew by 6,47%. These differences reveal uneven growth across subsectors and indicate that the dynamics of agricultural production in Gorontalo continue to face challenges in maintaining stable economic performance over the long term.

4.3 Share of Gorontalo Province's Agricultural Sector GRDP in Indonesia's National Agricultural GDP

The share of Gorontalo Province's agricultural sector GRDP in Indonesia's national agricultural GDP is presented in Table 3 below.

Table 3. Share of Gorontalo Province's Agricultural Sector GRDP in Indonesia's National Agricultural GDP

No	Agricultural Subsector	Years (Percent)				
		2021	2022	2023	2021	2025
1	Food Crops	1.92%	1.78%	1.85%	1.84%	1.95%
2	Horticultural Crops	0.48%	0.45%	0.45%	0.45%	0.48%
3	Plantation Crops	0.21%	0.22%	0.21%	0.22%	0.23%
4	Livestock	0.46%	0.46%	0.46%	0.44%	0.47%
5	Agricultural Services and Hunting	0.55%	0.54%	0.55%	0.55%	0.57%
6	Forestry and Logging	0.27%	0.26%	0.26%	0.28%	0.26%
7	Fisheries	0.96%	0.95%	0.91%	0.94%	0.96%
Total Agricultural Sector GRDP		**0.79%**	**0.76%**	**0.76%**	**0.76%**	**0.78%**
Total GRDP		**0.26%**	**0.27%**	**0.26%**	**0.26%**	**0.26%**

Source: Processed data, 2026.

Based on Table 3, the contribution of Gorontalo Province's agricultural sector GRDP to national agricultural GDP during 2021–2025 remained relatively stable, ranging from 0,76% to 0,79%. In 2021, its contribution reached 0,79%, subsequently declining to 0,76% during 2022–2024 before increasing again to 0,78% in 2025. These findings indicate that the contribution of Gorontalo's agricultural sector to the national agricultural economy remains relatively small, although its share is larger than the contribution of Gorontalo's total GRDP to national GDP, which ranged from 0,26% to 0,27%. This condition reflects the characteristics of Gorontalo's economy, which exhibits a relatively high dependence on agricultural activities, particularly food crop production and fisheries. The stability of this contribution also indicates that the relative position of Gorontalo's agricultural sector within the national agricultural structure has not undergone significant change.

Meanwhile, the contributions of individual subsectors exhibited considerable differences, with food crops recording the highest share relative to the corresponding subsector at the national level, increasing from 1,92% in 2021 to 1,95% in 2025. This condition is associated with Gorontalo's role as a maize- and rice-producing region, where these crops constitute major agricultural commodities for local communities. The

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fisheries subsector also maintained a contribution of 0,96% in 2025, consistent with the fisheries potential of Tomini Bay and the northern waters of Gorontalo. Conversely, plantation crops contributed only 0,23%, while livestock accounted for 0,47% in the same year. These differences indicate that Gorontalo's position in the national agricultural economy continues to be dominated by food crops, while the contributions of other subsectors remain relatively limited and require improvements in production capacity and regional economic development.

5. Discussion

The structure of Gorontalo's agricultural economy highlights the need to understand its subsectors as an interdependent production network within a broader landscape. Food crops provide both food and biomass, horticulture enhances production diversity, and plantation crops support the supply of raw materials for further processing. Livestock farming creates opportunities for utilizing crop residues, while agricultural services and hunting are associated with production services and the management of activities involving biological resources. Forestry and logging are linked to the functioning of water catchment areas, whereas fisheries depend on the health of aquatic ecosystems. These relationships indicate that sustainable development should be directed toward integrating economic functions, material utilization, and ecological protection throughout Gorontalo, including linkages between production centers and coastal and upstream areas.

In the maize- and rice-producing centers of Pohuwato, Boalemo, and Gorontalo Regency, the implementation of an Integrated Farming System can begin by establishing linkages among food crops, horticulture, coconut plantations, and cattle farming. Straw and harvest residues that meet feed quality requirements can potentially be utilized as livestock feed, while properly processed livestock manure can provide organic matter for agricultural land. Vegetable cultivation offers opportunities to diversify agricultural harvests and meet household consumption needs, while plantation trees contribute to the diversification of income sources. Such integration requires a balance among feed requirements, water availability, and the restoration of soil fertility to ensure that residue utilization does not reduce the organic matter required by agricultural land. Accordingly, production synergies should be directed toward improving resource efficiency, reducing crop losses, and strengthening the livelihood resilience of local farmers.

The sustainability of Gorontalo's agricultural system amid changes in the regional economic structure is also determined by the interconnections among upstream areas, cultivated land, and coastal waters. Forest management, including restrictions on logging activities in accordance with the carrying capacity of forest areas, is necessary to maintain vegetation cover, control surface runoff, and protect watersheds. These conditions are closely associated with water availability for food crops, horticulture, plantation crops, and livestock, as well as the quality of aquatic environments supporting fisheries activities. In suitable areas, the integration of crop cultivation and fish farming may be considered an alternative strategy for production diversification. Meanwhile, the protection of coastal habitats needs to be pursued alongside fishing activities. This landscape-based perspective positions forest and fisheries management as integral

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components of regional agricultural sustainability and the protection of coastal communities' livelihoods.

Integration across subsectors requires coordinating functions provided through agricultural services and hunting, farmer institutions, and postharvest business networks. Land preparation services, seed supply, animal health services, produce drying, and distribution have the potential to strengthen linkages between food crops, horticulture, plantation crops, livestock, and markets. In coastal areas, cold storage facilities and transportation access are essential for maintaining the quality of fishery products. Hunting activities also require supervision in accordance with wildlife protection regulations to prevent damage to biodiversity. When production services and landscape management develop independently, the benefits of value addition are unlikely to be distributed evenly. Therefore, strengthening coordination across subsectors is essential for improving productivity, ensuring supply continuity, and enhancing the contribution of Gorontalo's agricultural sector to the national economy, while simultaneously reducing the economic risks faced by local producers.

The need to integrate food crops, horticulture, plantation crops, and livestock becomes increasingly relevant when agricultural production development faces capital constraints and disparities in technology adoption. In maize farming in Tulabolo Barat, Tahir et al. (2024) demonstrated that suboptimal cultivation practices were associated with low farmer incomes. Meanwhile, Swastika et al. (2024) emphasized the potential of integrated crop–livestock systems to improve by-product utilization and support the circular economy in Indonesian agriculture. These findings provide a foundation for developing integrated cycles of livestock feed and compost production, crop diversification, and agricultural extension services in Gorontalo. However, their implementation requires adjustments to farmers' capacities, land suitability, and institutional support, as well as market incentives, to ensure that integration generates sustainable economic and ecological benefits.

The interconnections between forestry and fisheries extend the application of Integrated Farming System principles from the individual farm level to integrated landscape management. Lihawa et al. (2025) identified the spatial distribution of erosion-prone areas within watersheds draining into Tomini Bay, highlighting the relevance of maintaining land cover for the sustainability of environmental functions. Yamamoto (2023) demonstrated that mangrove degradation in Indonesia affects the incomes of fishing households, revealing a direct relationship between habitat conservation and fisheries-related economic activities. For Gorontalo, the implications include regulating logging activities, preventing runoff from agricultural land, and protecting coastal ecosystems. Such integration requires coordinated resource management extending from terrestrial production areas to fishing grounds, while taking into account the interests of farmers, fishers, and forest managers.

Ultimately, the performance of agricultural development in Gorontalo needs to be assessed based on the capacity of all subsectors to establish a productive and resilient system that preserves ecological capacity. Bhagat et al. (2024) described how an Integrated Farming System connects enterprise diversification, resource utilization, and the livelihood resilience of farmers. Jansen dan Kalas (2024) emphasized the importance

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of collaborative governance at the landscape scale in aligning production and conservation interests. In the context of Gorontalo, cross-sectoral policies can connect food crops, horticulture, plantation crops, livestock, agricultural services and hunting, forestry, and fisheries through shared services and environmental monitoring. Accordingly, efforts to strengthen economic contributions should be directed toward production continuity, producer welfare, and regional food system resilience by reinforcing productive linkages and environmental protection across different areas.

6. Conclusion

The agricultural development system in Gorontalo Province continues to play a strategic role in shaping the regional economic structure, although its relative contribution has tended to decline and its growth has not fully kept pace with overall regional economic development. The dominance of food crops, the increasing importance of fisheries and plantation crops, and the differing growth dynamics of horticulture, livestock, agricultural services and hunting, and forestry and logging reflect uneven development across agricultural subsectors. Meanwhile, the contribution of Gorontalo's agricultural sector to the national agricultural economy has remained relatively stable but is still limited. These findings underscore the importance of developing a sustainable agricultural development system that integrates all subsectors through an Integrated Farming System approach, emphasizing production linkages, resource-use efficiency, increased value added, and a balance between economic and ecological functions.

The Gorontalo Provincial Government needs to develop sustainable agricultural development policies based on an Integrated Farming System by strengthening linkages among food crops, horticulture, plantation crops, livestock, agricultural services and hunting, forestry, and fisheries within a unified framework for regional resource management. Implementation should focus on crop–livestock integration through the utilization of agricultural waste as livestock feed and organic fertilizer, commodity diversification, improvements in mechanization and agricultural extension services, and the development of agricultural and fishery processing industries. Forest management should support the protection of watersheds and coastal ecosystems, accompanied by supervision of hunting activities to preserve biodiversity. Furthermore, strengthening institutions, distribution infrastructure, access to financing, and cross-subsector market partnerships is necessary to enhance productivity, expand value addition, strengthen food security, and sustainably increase the contribution of Gorontalo's agricultural sector to the national economy.

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