Potential Analysis of the Agricultural Sector in the Development of an Agropolitan Area in Maros Regency

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Research article
Rural management and agricultural development: **Livelihoods**

Potential Analysis of the Agricultural Sector in the Development of an Agropolitan Area in Maros Regency

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Abstract: This research was conducted to analyze the potential of the agricultural sector as a driver of economic growth in the Maros Regency. In the plantation sub-sector, coffee is one of the leading commodities that is very promising and is believed to be able to make a significant contribution to the regional economy. The Regional Government is optimizing Mallawa Subdistrict as a coffee-producing center in Maros Regency, characterized with regional economic growth, formulation of sustainable economic policies, and research sequences: identification of leading sectors, formulation of economic growth models and strategies, determination of strategic priorities, and preparation of road maps. This study uses a quantitative-qualitative method using location question (LQ) analysis. SWOT analysis was used to develop a development strategy for the Mallawa Subdistrict as an agropolitan area. The analysis results revealed that the agricultural sub-sectors with superior LQ values > 1 were horticultural plants (vegetables), food crops, fruit plants, plantation, livestock, and fisheries. Mallawa District can be developed as an agropolitan area. The strategy for developing agropolitan areas in the Mallawa Subdistrict using SWOT analysis concludes that the strategy for developing agropolitan areas in the Mallawa Subdistrict is in Quadrant I. One of the agricultural sub-sectors that is very promising and contributes significantly to the regional economy is agropolitan. This sub-sector plays an important role in providing employment, especially in rural areas in Maros Regency after the COVID-19 pandemic.

Keywords: leading sector; agriculture; economic potential; agropolitanism

马罗斯县农业都市区发展中农业部门的潜力分析

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摘要： 本研究旨在分析农业部门作为马罗斯县经济增长驱动力的潜力。在种植园子行业中，咖啡是非常有前途的主导商品之一，相信能够为区域经济做出重大贡献。地方政府正在优化马拉瓦分区作为马罗斯县的咖啡生产中心，其特点是区域经济增长、可持续经济政策的制定和研究顺序：确定主导部门、制定经济增长模式和战略、确定战略重点，并准备路线图。本研究采用位置问题（LQ）分析的定量-定性方法。使用 SWOT 分析来制定马拉瓦分区作为农业都市区的发展战略。分析结果显示，LQ 值>1 的农业子行业是园艺植物（蔬菜）、粮食作物、果树、种植业、畜牧业和渔业。马拉瓦区可以发展为农业都市区。通过 SWOT 分析得出马拉瓦县农业都市区发展战略，得出马拉瓦县农业都市区发展战略位于第一象限。农业是很有前景、对区域经济贡献显着的农业子行业之一。该子行业在提供就业方面发挥着重要作用，特别是在新冠肺炎大流行后马罗斯县的农村地区。

关键词： 主导行业； 农业；经济潜力； 农业都市主义

1 Introduction

Urban and regional economic development is expected to develop through empowering human resources and using natural resources in a planned and integrated way[1]. This is in accordance with Law 26 of 2007 concerning spatial planning, which directs integrated and environment-oriented spatial planning[2]. To create integrated spatial planning, good governance is needed through multi-stakeholders, including the government, private sector, and community, who must support each other and perform their functions properly[3].

The gap between urban and rural areas causes poverty in rural areas. Rural-urban relations from the perspective of agropolitan area development will include economic networks and the distribution of goods/services to support regional economic growth[4]. This is because progress in the economic field is usually considered a success of the development process[5]. However, the development of [illegible] which results [illegible] meaning that [illegible] [6].

This has [illegible] effect, [illegible] depletion [illegible] rural [illegible] resources, nature, [illegible] capital[6]. Agropolitanism is defined as a development concept based on the aspirations of the lower society whose aim is not only to increase economic growth but also to develop all aspects of social life (education, health, art-culture, politics, defense-security, religious life, youth, and empowerment of youth and women)[7].

Based on these conditions, to avoid disparities between rural and urban relationships in the Mallawa Sub-district, Maros Regency[8]. The development of agropolitan areas is an alternative solution to reduce urban bias in regional development. Agropolitan areas are defined as a functional system of villages indicated by the existence of a spatial hierarchy of villages[9]. This agropolitan area is characterized by agricultural areas that grow and develop because of the implementation of agribusiness systems and businesses in the agropolitan center[10].

The development of agropolitan areas is expected to serve agricultural development activities (agribusiness) in Mallawa Subdistrict, Maros Regency. Through agropolitan development, it is expected that there will be strong interactions between the center of the agropolitan area and the agricultural production areas in the agropolitan area system[11]. Maros Regency is a region in South Sulawesi province that produces crops[12]. The economic sector of

Maros Regency is still dominated by the agricultural industry, which shows that most of the population in Maros Regency relies on agriculture to fulfill their daily economic needs[13].

The concept of agropolitanism was first introduced by Friedman in 1975 by offering a spatial layout for rural development[14]. The concept focuses on the idea of rural development that is oriented toward human needs with a fair distribution of economic resources, direct movement of local communities in the development process, and growth based on rural community activities, agriculture, and resources[15]. Agropolitanism is considered an important strategy for rural poverty reduction through accelerated rural economic growth based on the agricultural industry. Agropolitanism is an integrated government program implemented across all sectors between the departments of agriculture, settlements and infrastructure, and home affairs and regional autonomy[16]. The program aims to develop agribusiness-based agropolitan areas such as livestock, horticultural crops, and food crops[17].

Agropolitan is defined as an agricultural-based city that grows and develops to support the development of agribusiness systems and commercial activities that will attract, support, and encourage agribusiness development in rural areas and surrounding villages[18]. Agropolitan areas will become the main production areas that require support from marketing systems and infrastructure facilities that are integrated with the development of a broader regional infrastructure system[19]. On the other hand, the agricultural sector in a region has superior commodities to develop into the main driver of national and regional development growth[20]. However, the agropolitan system based on leading commodities has not been able to increase farmers' income; therefore, agropolitan development is needed with the advancement of the competitiveness of leading agribusiness products developed in agribusiness activities[21].

The development of agropolitan agriculture has its own characteristics compared with other sectors. The strong relationship between the resources of land, climate, and environment makes the development of the agricultural sector one of the main factors in the development of the district area, especially Mallawa Sub-district, Maros Regency[22]. Agriculture is an activity to obtain products from plants and animals that require commodity regions. Agricultural commodities are one of the main bases of the economy in the Maros Regency[23]. In the process of agropolitan development, there are three important issues, namely access to agricultural land and water, political and administrative authority at the local level, and shifts in national development policies in support of diversified agricultural production.

Agropolitan development is aimed at building an economic sector that is directed to form the basis of regional growth consistently in the long term[24]. Leveled linkages between villages, subdistricts, districts, and provinces will encourage the improvement of the welfare of rural communities. This linkage must be followed by a decentralized development policy that is bottom-up and able to empower rural communities[25]. In a policy-making process, community participation determines the failure or success of a policy to be implemented[26].

The growing and developing agricultural areas, due to the application of agribusiness enterprise systems and businesses in agropolitan centers are expected to serve and encourage the development of agribusiness activities in the surrounding areas[27]. The role of agropolitanism is to provide services for the surrounding agricultural production areas where agribusiness is held by local farmers. Development of agribusiness with the concept of agropolitanism to develop economies of scale, which subsequently will increase efficiency and additional score[28].

The implementation of the agropolitan area development program is important, especially in Mallawa Sub-district, Maros Regency, because the concentration of the pioneering pattern (physical development, and regional arrangement) is in accordance with the application of the agropolitan area concept[29]. The concept of agropolitan areas is more focused on villages whose pioneering patterns will cause development in Mallawa Sub-district, Maros Regency[30]. In addition, the potential for natural resource development in the agricultural sector, in the form of food crops, horticulture, livestock, fisheries, plantations, and tourism, strongly supports the activities of agribusiness systems and businesses in the agropolitan area of Mallawa Sub-district, Maros Regency[31]. These comparative advantages affect the success of the agropolitan area development program.

To support the development of agropolitan areas, integrated facilities and infrastructure are needed so that the development of facilities and infrastructure in agropolitan areas can be harmonized with the development of urban and rural areas[32]. The development of facilities and infrastructure in agropolitan areas has the

following functions: a. Supporting the development of agribusiness business systems, both to support the development of upstream agribusiness subsystems, farming, processing, and marketing of products; b. Accelerating economic growth in agropolitan areas, especially in agricultural production centers based on food crops, horticulture, plantations, livestock, and fisheries. The development approach of facilities and infrastructure in agropolitan areas is carried out with a balanced, integrated, and inter-sectoral regional approach, which begins with the preparation of a master plan for the development of agropolitan areas based on leading commodities[33,34].

Agropolitan development is a challenge faced in the agropolitan area development program by striving for a more balanced economic structure shift between the agricultural, industrial, and service sectors, where the three sectors are subsystems of the agribusiness system. The shift in economic structure is expected to contribute to creating a shift in the employment structure from the agricultural sector to the industrial and service sectors[35]. These efforts must be made with consideration of the potential for the development of agribusiness systems and businesses based on local resources, especially in the agricultural sector, which is large enough to realize the development of social welfare[36].

For this reason, agropolitan development must be socialized to related parties in accordance with the concept of developing agropolitan areas, thus creating a common perception of the importance of agropolitan area development to realize harmonious, harmonious, and balanced development in society.

2 Literature Review

The perspective of regional development through the development of economic growth centers is aimed at maintaining the balance of development between urban and rural areas to increase the economic productivity of corporate communities. Growth centers will stimulate the economy of community productivity and improve living standards[37]. Regional development is a process that does not occur simultaneously but appears in certain places at different speeds and intensities. Growth poles always develop if supported by the provision of transportation facilities and infrastructure that connects the production center area with regional markets. Supporting policies should include regulating and enforcing rules and improving access to markets, credit, and animal health services[38].

The development of agropolitan areas based on rural agribusiness is oriented toward optimizing the usage of natural and human resources as functional units in rural areas. Effective agricultural planning requires an appropriate system that includes all the right planning components and can handle the complexity, diversity, and dynamics of the agricultural environment[47]. In addition, labor surplus is most pronounced during the low-intensity curative phase.

Agropolitan areas are developed as economic growth poles oriented toward optimizing the management of the agricultural sector to support increased productivity of community economic enterprises and regional economic income[39]. Furthermore, the transformation fundamentally changes the relationship between environmental actors, especially those related to entrepreneurial action. In this context, the agribusiness system has vertical relationships between subsystems and horizontal relationships with other systems or subsystems, including finance, banking, transportation, trade, education, and others[40]. The rural agribusiness system is part of industrial, agricultural, and service development in an integrated and sustainable agropolitan area development system. Increased productivity is carried out in an environmentally, economically, and socially sustainable[41].

Rural-urban linkages from the perspective of developing agropolitan areas will include economic linkages and the distribution of goods and services to support regional economic growth. Linkages can be grouped into physical, economic, technological, population movement, social relations, service delivery, and various political relations[42]. Market area connectivity is essential to achieve sustainable economic growth, but markets play an important role in driving economic growth in rural Indonesia.

The concept of the development of agropolitan areas based on rural agribusiness is intended to overcome regional development imbalances. A urban area is the center of economic growth, and a rural one as the center of agricultural activities. The interaction between the two areas functionally shows a unified system that is not optimal and mutually beneficial. Factors that influence this condition include: (i) The economic productivity of community businesses tends to stagnate; (ii) Urban areas as market destinations receive an excessive burden; (iii) Social problems, poverty, and environmental damage[43]. Development gaps at various spatial scales and the interaction between the two regions can be used as a basis for measuring

regional development inequality.

Agropolitan areas are created and developed to increase the productivity of agricultural businesses toward regional economic growth and overcome the disparities between urban and rural areas[44]. Efforts need to continue to be made in the development of agropolitan areas that are important for accelerating rural development in general and agriculture in particular. Economic systems depend on various factors such as producer and consumer behavior, technological change, resource availability and productivity, and population dynamics. Furthermore, the rural agribusiness system is a tangible manifestation of the business chain of the economic system of rural communities. The stronger role of market-related factors in changing agricultural practices over time calls on policymakers to design better market-based interventions and incentives to enhance adaptation in farming communities[45].

The integration of the agropolitan area development system from the perspective of regional development is needed to synergize the productivity of economic enterprises towards the production marketing system. The integration of the agropolitan area development system is an effort to combine the ability of human resources and the use of natural resources to increase the added score, artificial resources, and social capital that will increase regional capacity in the implementation of development[46]. Furthermore, the dominant trend in the development and formation of inter-regional areas centers on economic growth and contributes positively to spatial economic agglomeration.

The method used in this research is a quantitative-qualitative approach. To calculate the potential of agriculture, crops, horticulture, fruits, plantations, livestock, and fisheries, location question (LQ) analysis was used to determine the extent of horticultural potential in the Mallawa Sub-district, and SWOT analysis was used to develop development strategies for Mallawa Sub-district as an agropolitan area.

LQ analysis is used to determine the ability of an area to perform certain sector activities. Mathematically, it can be expressed as follows:

$$LQ = \frac{Si / Ni}{S / N} = \frac{Si / S}{Ni / N}$$

where:

Si - sum of the sector production in the study area;

S - total of production sectors in the study area;

Ni - sum of the sector production across the wider region of which the region under study is a part;

N - total production across the broader area of which the study area is a part.

SWOT analysis was used to determine strategies for agropolitan development. SWOT analysis (strength, weakness, opportunities, and threats) is the systematic identification of various factors to devise a strategy. SWOT analysis is part of a strategic planning process carried out in three stages: data collection, analysis, and decision-making. In the data collection stage, data clarification is performed, namely external and internal. For this reason, internal and external strategic factors are needed first so that a matrix can be prepared to develop strategies. One of the matrix models developed is the TOWS matrix.

3 Data and Methods

Tab. 1 The strategies used in the TOWS matrix

Internal / External	Strength (S) List of strengths	Weakness (W) List of weaknesses
Opportunities (OP) List of opportunities	The SO Strategy (The strategy of using strengths and leveraging opportunities)	The WO Strategy (The strategy of minimizing weaknesses and leveraging opportunities)
Threat (T) List of threats	The ST Strategy (The strategy of using strengths and resolving threats)	The WT Strategy (The strategy of minimizing weaknesses eliminates threats)

4 Results

4.1 Overview of the Mallawa Subdistrict

The review conducted in this discussion is to determine the suitability of potential research areas. This discussion is preceded by several aspects concerning the basic physical conditions of the Mallawa Subdistrict that influence its development. The basic physical condition is an important aspect in the planning of the Mallawa Subdistrict area, which has different physical condition characteristics, thereby affecting the allocation of space utilization.

The Mallawa Subdistrict area is part of Maros Regency with the capital in Ladange Subdistrict, Sabila Village. The distance from the capital of the Maros District is 60 km. Mallawa sub-district

consists of 11 villages with an area of 235.92 km² and a population of 11,663 people. The population density level was 49 people/km² in 2021 (BPS Maros district 2021).

Overall, the Mallawa sub-district is located at an altitude of 0–800 m above sea level (masl). The slope condition in the Mallawa area is a diverse slope where the slope level varies greatly. The geological conditions of the Mallawa area are generally dominated by sedimentary rocks, volcanic rocks, trobobas rocks and volcanic soil types, sedimentary intrusions, and alluvium. The hydrological conditions of the Mallawa area are surface water and groundwater (shallow and deep). Both types of water come from groundwater and rivers. The river located in the Mallawa Subdistrict can irrigate the surrounding agricultural lands. The river that passes through the Mallawa Subdistrict is the Walanae River.

This area has river flows that can be used by the community, namely agriculture, and others. Meanwhile, based on the results of identification in the Mallawa sub-district, there are four types of soil that are scattered in several areas: alluvial, lithosol, median, and podzolic. Alluvial soil types are usually gray, brown, or black. This type of soil is not sensitive to erosion because it is formed from marine, river, or lake deposits.

The Malawa sub-district has a tropical climate due to its location on the equator with humidity ranging from 60% to 82%. The average annual rainfall is 347 mm/month with an average of 16 days of rain. The air temperature is 29⁰C. The average wind speed is 2-3 knots/h. The Mallawa Sub-district area has a tropical climate with two seasons, based on rainfall: rainy season from October to March and dry season from April to September.

According to Oldement[1], the climate type in the Mallawa Sub-district is type C2, which is wet (200 mm) for 2-3 consecutive months. Some villages in the Mallawa sub-district, which borders the Bone District, have a climate similar to that in the eastern part of South Sulawesi, namely, a rainy season from April to September and a dry season from October to March. Land use patterns describe the pattern and level of community activity in an area or region. The higher the intensity of land use, the higher the level of activity and dynamics of the people who inhabit the area.

Land use patterns also provide an overview of the spatial pattern and structure of the area concerned. The land use in the Mallawa sub-district has undergone many changes, where areas that were once rice fields have changed into residential areas due to the increasing demand for land. Land use is expected to be a reference in the process of developing the Mallawa area in the future. Generally, land use in the Mallawa area consists of settlements, mixed gardens, rice fields, teak forests, cocoa, candlenuts, corn, bananas, and other crops.

The objective condition of the Mallawa sub-district unemployment rate is still relatively high because of limited employment opportunities, so the workforce has not been optimally used. This phenomenon is related to various reasons, including the low interest of the community in entrepreneurship, more inclined to become civil servants in the government sector and lack of labor force working in certain economic sectors such as agriculture, plantations, fisheries, and trade. In addition, the capability of human resources to open new jobs is still low, and they lack trained and skilled labor.

The aspect of facility distribution is an element related to the service needs of society. The number of educational facilities in the Mallawa sub-district area is 34, mostly with permanent conditions. Most educational facilities are in Dakaino village, and health facilities in Mallawa sub-district comprise 47 units.

The trade sector plays an important role in the economy, not only in generating production scores but also in generating regional income. The trade sector includes wholesale, retail, hospitality services, and restaurants. Factors supporting trade development include population, regional access, transportation infrastructure, and market availability. The total number of public markets in the Mallawa Subdistrict is three.

The processing industry activities are divided into large, medium, small, and microindustries. The potential of the Mallawa sub-district processing industry sector that can be developed consists of large, small, and medium industries with comparative advantages in the form of availability of raw materials and labor. Potential large industries are those whose raw materials are nickel ore, small industries consist of handicraft industries, carpentry, and processing of agricultural products, and potential medium industries include plantation and forestry processing industries.

Based on the data, the numbers of supporting facilities in the Mallawa Sub-district are: 1 bank financial institution, 34 active cooperatives, and 3 trade facilities consisting of markets with 2 permanent buildings and 1 semi-permanent building. The problems of growth in the number of small and medium enterprise cooperatives are caused by various factors: 1) the limited access of cooperatives and small and medium enterprises

to productive capital and human resources; 2) limited technological mastery, information management, and markets; 3) lack of public awareness of the existence of cooperatives and the level of community welfare; 4) cooperative empowerment; 5) weakness of institutional strengthening.

4.2 Potential Agriculture of Mallawa Subdistrict

Mallawa Sub-district has several potential lands that can be developed to increase regional income, such as agricultural land, plantations, and tourism. More details can be found in the following table:

Tab. 2 Agricultural potential in Mallawa Subdistrict (The authors' findings)

No.	Crop Types (Ha)	Harvested Area (Ha)	Production (Tonnes)	Productivity (Kw/Ha)
		Food Crops		
1	Paddy	3.755	24,681.62	65,73
2	Paddy Field	127	772.41	60,82
3	Corn	582	7,449.60	49,8
4	Sweet potato	83	1,907,84	168,43
5	Cassava	16	283.25	207,46
7	Soybean	237	434.42	14,75
8	Peanut	203	664.00	16,23
		Vegetables		
9	Chili	209	868,6	4,16
10	Onion	3	0,3	1
11	Ginger	2.500	20000	-
		Fruits		
12	Mango	-	18.271	-
13	Banana	-	17.302	-
14	Papaya	-	4.451	-
15	Pineapple	-	83	-
16	Durian	-	850	-
		Plantation		
17	Coconut	102	31.00	
18	Coffee	47	1100.00	
19	Cocoa	1.160	390.00	
20	Pepper	47	10.35	
21	Candlenut	3554	1140.00	
22	Cashew	28	3.00	
22	Aren	44	11.00	
23	Kapok	11	2.00	

The agricultural sector contributes the most to the gross regional domestic product (GRDP) and has become the basis of people's livelihoods in the Maros Regency, especially in rural areas in the Mallawa Sub-district. The agricultural sector is very large, and the Mallawa sub-district area is made one of the strategic areas for economic interests for the development of agricultural areas, as stated in the Maros Regency Spatial Plan 2012–2032. The leading potential of the food crop sub-sector in the Mallawa sub-district is rice, with a land area of 3,882 hectares and a total production of 25,454 tons/ha. In addition, there are agricultural commodities in the form of Corps and Horticulture with a total accumulated land area of 595 ha, and the production can reach 907.4 tons. In general, the food crop agricultural sector is managed by ex-transmigration farmers, and the possibility for agricultural expansion is still wide open in this sub-district.

The number of farmer groups in the Mallawa Sub-district reaches approximately 66, spread across each of the 11 villages in the Mallawa Sub-district; therefore, it is important to gather them into a forum in the form of farmer groups.

4.3 Potential Analysis of the Agricultural Sector

The determination of the leading agricultural and plantation sectors in the Mallawa Sub-district was carried out using LQ analysis.

Formulation for the LQ:

$$LQ = \frac{Si / Ni}{S / N} = \frac{Si / S}{Ni / N}$$

Description:

Si - Total Production I in the sub-area

Ni - Total Production I in all the areas

S - all production in the area

N - all production in all the areas

The results of the analysis use the LQ method, which aims to determine the food potential in the Mallawa Sub-district, where the function is determined on the basis of the characteristics and potential resources owned by the leading sector. The results of the LQ analysis can be seen in the tables below:

Tab. 3 Results of the LQ analysis of crop commodities in Mallawa Subdistrict (The authors' findings, 2023)

Paddy	Paddy Field	Peanut	Soybean	Mung Beans	Sweet Potato	Cassava	Corn
1.06	0.02	0.01	0.01	-	1.05	0	1.02
1.06	0.02	0.01	0,01	-	0.05	0	0.20

Tab. 4 Results of the LQ analysis of horticultural commodities (vegetables) in Mallawa Subdistrict (The authors' findings, 2023)

	Name		Total
1	Chili	1.98	1.98
2	Union	0	0
3	Ginger	1.51	1.51

Tab. 5 Results of the LQ analysis of fruit commodities in the Mallawa Subdistrict (The authors' findings, 2023)

	Name		Total
1	Manggo	1.44	1.44
2	Banana	1.42	1.42

Continuation of Tab. 5			
3	Papaya	0.1	0.1
4	Pineapple	-	
5	Durian	1.02	1.02

Tab. 6 Results of the LQ analysis of plantation commodities in Mallawa Subdistrict (The authors' findings, 2023)

Name	Total	
Coconut	0.01	0.01
Coffee	1.60	1.60
Cocoa	1.24	1.24
Pepper	0	0
Candlenut	1.71	1.71
Cashew	0	0
Aren	0.02	0.02
Kapok	0	0

Besides the opportunities that are owned in terms of developing agropolitan areas in the Mallawa Sub-district, there will also be threats to the development of agropolitan areas.

Tab. 7 Qualitative and quantitative weight index standards based on strategic parameters (The authors' findings, 2023)

Qualitative Levels	Quantitative Levels	Weight (%
Very Strong	4	20
Strong	3	15
Average	2	10
Weak	1	5

Based on the weighting standards above, it can be seen the strategic score of the internal factors of the Mallawa sub-district area. More details can be seen in the table below:

Tab. 8 Internal strategic factor analysis (IFAS) (The authors' findings, 2023)

	Strategic Factors	Weight (%)	Grade	Score
	Strengths			
-	The potential of food crops in the Mallawa Sub-district, such as horticulture, fruits, and gardens, can be exported.	20	4	0.20x4 = 0.80
-	Availability of relatively large potential land for agricultural development	15	3	0.15x3 = 0.45
-	The topography of the Mallawa subdistrict is relatively flat.	20	4	0.20x4 = 0.80
-	The majority of the population works in the agricultural sector.	20	4	0.20x4 = 0.80
-	The Mallawa sub-district has a strategic geographic location.	15	3	0.15x3 = 0.45
	Sum	90		3.30
	Weaknesses			
-	In the absence of an adequate post-harvest system that includes packing and warehousing, agricultural products are prone to damage in the toleration of time and place.	20	4	0.20x4 = 0.80
-	Low marketing access of farmers in marketing Mallawa sub-district harvest products to other regions	15	3	0.15x3 = 0.45
-	Agricultural institutions such as cooperatives have not been optimal in performing their functions.	15	3	0.15x3 = 0.45
-	The education and skill levels of agricultural workers are still low.	15	3	0.15x3 = 0.45
	Sum	65		2.15
	Total	155		5.45

The table above shows that the highest level of opportunities owned by the potential areas for agropolitan development includes Maros Regency government policies, favorable climatic conditions, and the role of the community. Threats to agropolitan development include the conversion of agricultural land to built-up land, similar products from other regions, the lack of appropriate technology, and inadequate transportation facilities.

4 Discussion

After assessing the external conditions of the potential area for agropolitan development, the total score of the opportunity factor is 2.50, the score of the threat factor is 1.60, and the difference is 0.90. Based on the results of the data analysis, there are potential opportunities for the region to be developed as an agropolitan development area. The total score of the internal factors is 5.45, and that of the external factors is 4.10, so there is a difference of 1.35, meaning that the potential area for agropolitan development has the ability and can rely on internal factors to use and control external factors.

Tab. 9 SWOT analysis weighting (The authors' findings, 2023)

Strengths (+)	Score	Weaknesses (-)	Score
The potential of the Mallawa sub-district agricultural sector, such as crops, horticulture, fruits, and plantations, can be exported.	0.80	In the absence of an adequate post-harvest system that includes packing and warehousing, agricultural products are prone to damage in the toleration of time and place.	0.80
The availability of potential land for agriculture is relatively large in terms of land quality (fertility)	0.80	Low marketing access of farmers in marketing Mallawa sub-district harvest products to other regions	0.45

Strengths (+)	Score	Weaknesses (-)	Score
and very suitable for agricultural development.			
The majority of the population works in the agricultural sector.	0.80		
The topography of the Mallawa subdistrict area is relatively flat.	0.80	Agricultural institutions such as cooperatives have not been optimal in performing their functions.	0.45
Mallawa sub-district has a strategic geographical location because it is located on the provincial highway.	0.45	The education and skill levels of agricultural workers are still low.	0.45
Total	3.30	Total	2.15
	Difference between Strengths and Weaknesses (3,30)-(2,15) = 1,15		
Opportunities	Score	Threats	Score
Government policies (RT RW Maros district 2012-2032) related to the development of strategic areas for developing agricultural areas	0.80	Conversion of agricultural land into settlements	0.5
Supportive climatic conditions in the Mallawa sub-district	0.45	Similar products from other regions	0.45
The role of society	0.80	Lack of use of appropriate technology	0.45
Improvement of basic facilities and infrastructure supporting the Mallawa subdistrict area	0.45	Inadequate transportation facilities	0.20
Total	2.50	Total	1.60
	Difference between Opportunities and Threats (2,50)-(1,60) = 0,90		

Based on the table above, the weight of each factor includes strengths (3.30) and weaknesses (2.15), so the score of internal factors is (X) = (3.30) - (2.15) = (1.15), that of opportunities is 2.50, and that of threats is 1.60 so that the score of external factors is (Y) = (2.50) - (1.60) = (0.90). Then, it can be drawn on the SWOT analysis diagram below:

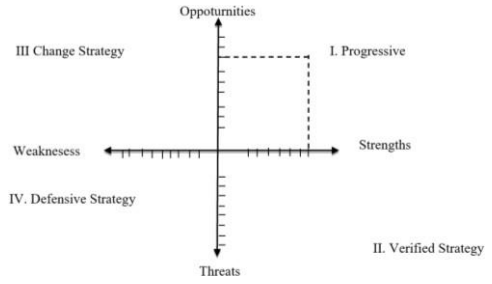

Fig. 1 SWOT analysis diagram (The authors' findings, 2023)

The diagram above shows the position of the potential of the Mallawa sub-district area for agropolitan development, which is in Quadrant I, or the strategy made by using the strength formulation to take advantage of the opportunities possessed by the potential of the area for agropolitan development, namely an aggressive strategy. Furthermore, the aggressive strategy used is based on strength factors, which are internal factors, opportunity factors, which are external factors, and the potential of the area for agropolitan development with alternative strategies as follows:

Tab. 10 SWOT analysis matrix (The authors' findings, 2023)

External \ Internal	Strengths (S)	Weaknesses (W)
	- The potential of the Mallawa sub-district agricultural sector, such as crops, horticulture, fruits, and plantations, can be exported; - The availability of potential land for agriculture that is relatively great in terms of quality (fertility) and very suitable for agricultural development; - The majority of the population works in the agricultural sector; - The topography of the Mallawa Subdistrict area is relatively flat; - Mallawa sub-district has a strategic geographical location because it is located on the provincial highway.	- In the absence of an adequate post-harvest system that includes packing and warehousing, agricultural products are prone to damage in the toleration of time and place; - Low marketing access of farmers in marketing Mallawa sub-district harvest products to other regions; - Agricultural institutions such as cooperatives have not been optimal in performing their functions; - The education and skill levels of agricultural workers are still low.
Opportunities (O)	S-O Strategy	W-O Strategy

- Government policies (RT RW Maros district 2012-2032); - Supportive climatic conditions in the Mallawa sub-district; - The role of society; - Improvement of basic facilities and infrastructure supporting the Mallawa subdistrict area.	- Developing existing potential sub-sectors for agropolitan area development; - Using government authority to optimize existing resources to support agropolitan development; - Strong motivation, availability of land, and diversity of businesses that can be done to further optimize agricultural products; - Using the strategic location of the Mallawa sub-district area for the distribution of goods and services (agricultural products) to the surrounding areas.	- Improving the agricultural management system properly; - Providing training to agricultural actors; - Cooperation with other parties, especially the local government, in capitalization, marketing, and technology; - Cultivation/farming business, post-harvest, processing, and marketing of agricultural commodities.
Threats (T)	S-T Strategy	W-T Strategy
- Conversion of agricultural land into settlements; - Similar products from other regions; - Lack of use of appropriate technology; - Inadequate transportation facilities.	- Increasing the role of the government in protecting farmers through agricultural improvement policies; - Promotion of the Mallawa sub-district area to invite investors; - Opening and strengthening market networks; - Development of farmer group businesses.	- Increasing the use of technology through coaching and counseling the community on agricultural technology and marketing. - Improving the working system of farmer institutions to be more optimal. - Government attention in terms of providing transportation for the distribution of agricultural products.

Based on the SWOT analysis above, the prospect of developing the Mallawa sub-district area as an agropolitan area overall has enormous potential. In agropolitan development, it is important to focus on the development of the basic physical infrastructure of the region that supports agropolitan development. This is considered necessary because the basic physical infrastructure of the region plays a crucial role in agropolitan development in the Mallawa Subdistrict area. Therefore, some strategies for agropolitan development in the Mallawa Sub-district are as follows:

1. Improvement of supporting facilities and infrastructure in agropolitan development, such as clean water and road improvements. This will provide a high level of accessibility in the Mallawa Sub-district to affect the movement of goods and services both from internal and external areas in the Maros Regency, as well as a place for processing agricultural products before marketing.
2. Making the agricultural sector a sector that can contribute to the regional economy in the development of the region, in this case, the Maros Regency Government.
3. Using the agricultural potential of the Mallawa sub-district to improve the quality of agricultural products and increase public income.
4. Increasing the role of the Maros Regency government and building cooperation between communities in the development of agropolitan areas.
5. The Maros district government makes policies in providing technical guidelines for agropolitan development (Agropolitan Master Plan) so that it can be used as a reference in managing the agricultural sector properly.

5 Conclusions

Agropolitanism can be said to be one of the most appropriate rural area development concepts today because it can simultaneously and harmoniously integrate the development of the agricultural sector with related industries and services in a regional development cluster. All aspects related to agropolitan development, including aspects of the development of natural and human resources, agricultural systems and businesses, capital, infrastructure and facilities, institutions, and other supporting aspects, must be developed all at once. Harmony means that all aspects related to agropolitan development must run in a balanced way, and no one aspect is left behind. Underdevelopment of one aspect will be an obstacle in the development of agropolitanism as a whole.

Through the development of infrastructure and facilities that are on par with urban areas, agropolitan areas are hoped to grow and develop into new centers of economic growth and expected to function as prime movers in the development of the surrounding areas. In addition, the agropolitan development program is expected to help overcome various problems that arise in rural areas; (1) serving as a counterweight to development between rural and urban areas; (2) encouraging local economic growth; (3) strengthening national food security; (4)

restraining the rate of migration from villages to cities; (5) creating jobs; (6) maintaining the preservation and balance of natural resources in rural areas from the presence of urban bias symptoms (drainage of natural resources in rural areas by urban areas). It is necessary to study the spatial structure and strategy for developing agropolitan areas in further research to support spatial planning in the development of agropolitan areas in the Maros Regency, especially in the Mallawa Sub-district.

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