



Pentahelix Model in Sustainable Agrotourism Development in Rurukan, Tomohon City

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Abstract: The potential of Rurukan agro-tourism includes horticultural crops and hills with a background of mountain and lake views that have extraordinary appeal. However, the potential of agritourism has not been fully developed and optimally utilized, because it is still managed traditionally, lack of access and tourist spot infrastructure, and lack of nature conservation efforts. The purpose of this research is to formulate a pentahelix model of sustainable agro-tourism development in Rurukan, Tomohon City. This research was conducted at Rurukan Agrotourism, in East Tomohon District, Tomohon City using data analysis, namely Qualitative Descriptive Analysis. The stages in this research are; 1) Identifying the Multi Potential of Agrotourism Development in Rurukan Tomohon City, 2) Identifying the actors involved, 3) Knowing the role of actors involved in the development of sustainable agro-tourism in Rurukan Tomohon City and 4) Pentahelix Model of sustainable agro-tourism tourism development in Rurukan Tomohon City. Through this research, a Pentahelix Model of Sustainable Agritourism Development in Rurukan Tomohon City was obtained to be recommended to the Tomohon City Regional Government in sustainable tourism development policies. Pentahelix actors in the development of sustainable agritourism in Rurukan Tomohon City consist of government, academics, tourism business people, community leaders, and mass media. Four aspects that prioritize the performance of sustainable agritourism development in Rurukan are environmental, economic, cultural, and experiential aspects.

Keywords: Agritourism; Pentahelix model; Sustainable agritourism.

Introduction

Sustainable agritourism development is part of sustainable agricultural development. The sustainable agricultural development system leads to an agricultural system that is not destructive, harmonious, in harmony and balanced with the environment, which can be implemented with four systems, namely 1) organic farming system, 2) integrated farming system, 3) low external input farming system, and 4) integrated pest control system (Salikin, 2003). Integrated farming system (IFS) as a concept of farming system that combines two or more farms (Channabasavanna et al., 2009; Jayanthi et al., 2009; Ugwumba et al., 2010; Massinai, 2012; Walia & Kaur, 2013; Jaishankar et al., 2014) where there are input-output linkages between commodities and biological recycling processes (Prajitno, 2009; Changkid, 2013; Massinai, 2012; Thorat

et al., 2015), which use low external inputs (Devendra, 2011; Nurcholis & Supangkat, 2011; Hilimire, 2011) and utilise resources efficiently (Bosede, 2010; Balemi, 2012 and Soputan, 2012), and apply various techniques so as to increase production, productivity and income of farmers and sustainably (Gupta et al., 2012; (Manjunatha et al., 2014; Thorat et al., 2015; Rasyid et al., 2024)

The tourism sector plays an important role in the economic development of a nation, this can be seen from the better or more advanced tourism sector, the higher the level of economic welfare. The tourism sector is also expected to have the opportunity to become a driver of growth in other development sectors, such as plantations, agriculture, trade, industry and others. Meanwhile, in the agricultural sector, one element that has not been optimally developed is agrotourism. Agrotourism is a series of tourism activities that utilize the potential of agriculture as a tourist attraction, both in

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the form of natural scenery in the agricultural area and the uniqueness and diversity of agricultural production activities and technology as well as the culture of the agricultural community. According to Sastryayuda (2010), agrotourism is a tourism activity that utilizes the potential of agriculture as a tourist attraction, both in terms of the natural tourist atmosphere, diversity and agricultural technology and agricultural cultivation.

Tourism is a strategic activity to be developed in Tomohon City, to increase Regional Original Income (PAD), expand business fields and employment opportunities for the community in Tomohon City in accordance with the 2023 Regional Government Work Plan (Perwako No. 9 of 2022). One of the tourism potentials of Tomohon City is Rurukan agrotourism in East Tomohon District, this agrotourism area is managed by local residents traditionally. In addition to agrotourism potential, Rurukan also has natural potential such as hot water and hot springs, as well as a place to make palm sugar, palm sugar, and a place to make traditional alcoholic drinks typical of Rurukan. However, this very high agrotourism potential has not been fully developed and utilized optimally, seen from the lack of supporting facilities for tourist attractions and the condition of infrastructure and facilities that are not well maintained, and limited information about the agrotourism area in East Tomohon District.

Pentahelix as one of the models and references in synergistic tourism development (Soemaryani, 2016). Pentahelix as a tangible manifestation of the five-element strategy, namely ABCGM, Academics, Business, Community, Government, Media that must synergize as a determinant of tourism success (Rampersad et al, 2010; Halibas et al, 2017). One element that has not been optimally developed in the agricultural sector is agritourism. Agritourism emphasizes local culture in utilizing land, can increase farmers' income while preserving land resources, and maintain local culture and technology (Tambuwun et al., 2020).

Rurukan Village has tourism potential which until now has not been explored and utilized optimally. Rurukan also has natural potential such as hot water and hot springs, as well as a place for making palm sugar, nira sugar, and a place for making traditional alcoholic drinks typical of Rurukan. Tourism development cannot be done without the intervention of local stakeholders. The Tomohon City Government must synchronize tourism development cooperation with various parties including tourism associations in Tomohon City. Then local wisdom is needed to address development holistically.

Method

Pentahelix is a multi-party concept where elements of government, academics, agencies and/or business

actors, society or community, and mass media collaborate and commit to achieving the same goal. According to Arif Yahya, Pentahelix in the tourism sector is a collaboration of 5 (Five Elements) elements of tourism subjects or stakeholders, namely: Academician, Business, Community, Government and Media. Usually abbreviated as ABCGM. The development of sustainable agrotourism in Rurukan, Tomohon City will use the Pentahelix Model, which involves the elements: Academics, Business, Government, Community and Mass Media. The steps taken are: 1). Identifying the multi-potential for developing agrotourism in Rurukan, Tomohon City; 2). Identifying actors involved in the development of sustainable agrotourism in Rurukan, Tomohon City; 3). Knowing the role of actors involved in the development of sustainable agrotourism in Rurukan, Tomohon City; 4). Pentahelix Model of Sustainable Agrotourism Development in Rurukan, Tomohon City.

Research on the Pentahelix Model for sustainable agrotourism development in Rurukan, Tomohon City aims to produce a pentahelix model as an alternative policy in formulating a tourism development strategy in Tomohon City and providing policy recommendations to improve community welfare.

Research Time and Location

This research was conducted for 7 months at Rurukan Agrotourism, Tomohon City.

Data Collection Method

The types of data used in this study include primary data and secondary data. Primary data collection obtained through the distribution of questionnaires was continued with Focus Group Discussions and surveys to respondents who are all stakeholders of Rurukan Agrotourism in Tomohon City, namely Academics, Business, Government, Community and Mass Media. Secondary data was obtained from agencies related to research problems such as; Tomohon City Tourism Office, Tomohon City Agriculture Office, Tomohon City Central Statistics Agency and several related offices as well as research journals and several library books.

Data collection began with a literature review of Rurukan Agrotourism and the actors involved according to the dimensions of Environment, economy, culture and experience. The results of the literature review were then compiled in the form of a longlist that was adjusted to the conditions in the field. The process of determining the roles of the actors and their performance was carried out through an assessment process through Focus Group Discussion (FGD).

Respondents used in this FGD include decision makers in the field of Rurukan agrotourism

development, namely tourism business actors, Government, Academics, Community and Mass Media.

Data Analysis Method

The longlist results from the FGD were tabulated and analyzed using the relative frequency method, to obtain a priority order of performance carried out in developing agrotourism in Rurukan to ensure sustainability.

Priority analysis aims to determine the performance priorities of actors based on the weight of the assessment options. Priority analysis is carried out by following the assessment method carried out by (Gonzalez, 2006). This assessment is separated into 5 weights (bands) for each performance.

Table 1. Percentage of performance according to assessment weight in developing Rurukan agrotourism

Performance is at:	Weight	It is stated as
Below 10%	1	Very below average
10 to less than 30%	2	Below Average
30 to less than 70%	3	Average
70 to less than 90%	4	Above average
90 to 100%	5	Significantly above average

Source: (Gonzalez, 2006)

In determining the total indicator score (SIT), the Formula 1 is used:

$$SIT = \sum_{i=1}^5 f_i B_i \quad (1)$$

Where:

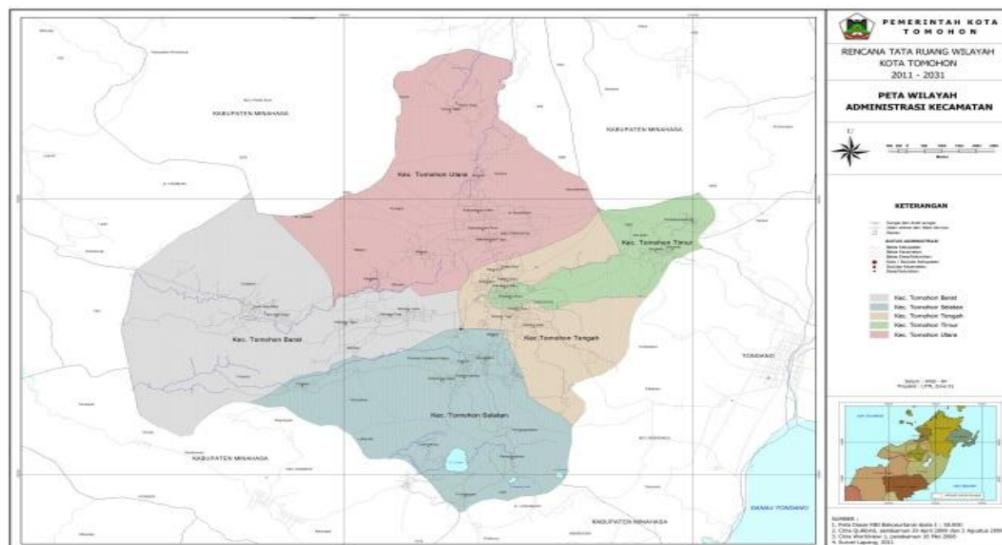


Figure 1. Administrative Map of Tomohon City

Tomohon City has the following territorial boundaries:

- North : Pineleng District, Minahasa Regency
- East : North Tondano District, Minahasa Regency
- South : Sonder District, Minahasa Regency
- West : Tombariri District, Minahasa Regency

Tomohon City has 5 sub-districts and 44 villages, namely West Tomohon Sub-district, South Tomohon

Sub-district, Central Tomohon Sub-district, North Tomohon Sub-district and East Tomohon Sub-district.

East Tomohon Sub-district has 5 villages, namely Kumelembuay, Paslaten I, Paslataen, Rurukan I and Rurukan.

East Tomohon District is one of the Districts in Tomohon City, approximately 35 km from Manado City.

After the performance priorities are obtained from the FGD, an analysis is then carried out to determine the opinions of the pentahelix actors who are prioritized in determining the performance of the actors in the development of Agrotourism in Rurukan, where the performance priority equation (Pk) is calculated by:

$$Pk = \frac{SIT}{n} \quad (2)$$

Where:

n= Number Number of respondents who gave their choice

Result and Discussion

General Condition of Rurukan Tomohon City

Rurukan is one of the sub-districts in East Tomohon District, Tomohon City as the capital is located at 1°15' North Latitude and 124°50' East Longitude. The area of Tomohon City based on the decision of Law of the Republic of Indonesia Number 10 of 2003 is around 11,420 Ha with a population of 87,719 people.

East Tomohon District has a topography of a stretch of land with an altitude of 500-1000 meters above sea level. East Tomohon District is located at 10.19°-10.28° North Latitude and 101.19'28"-1240.55'30" East Longitude. In 2021, the population of East Tomohon District in 2015 was 9836, consisting of 5051 men and 4785 women. Rurukan Village has a population of 1827 and Rurukan Satu Village has 1256. With the livelihood of the population as farmers. Rurukan Village and Rurukan

Satu livelihood as farmers is the most livelihood and also more than other villages. Where 50% of the population in Rurukan Village make a living as farmers and in Rurukan 1 Village 72% of the population make a living as farmers (Data from Rurukan and Rurukan I Villages, 2022). Rurukan is known as a center for vegetable food production, but unfortunately it is currently number two after Modoinding District, South Minahasa Regency.

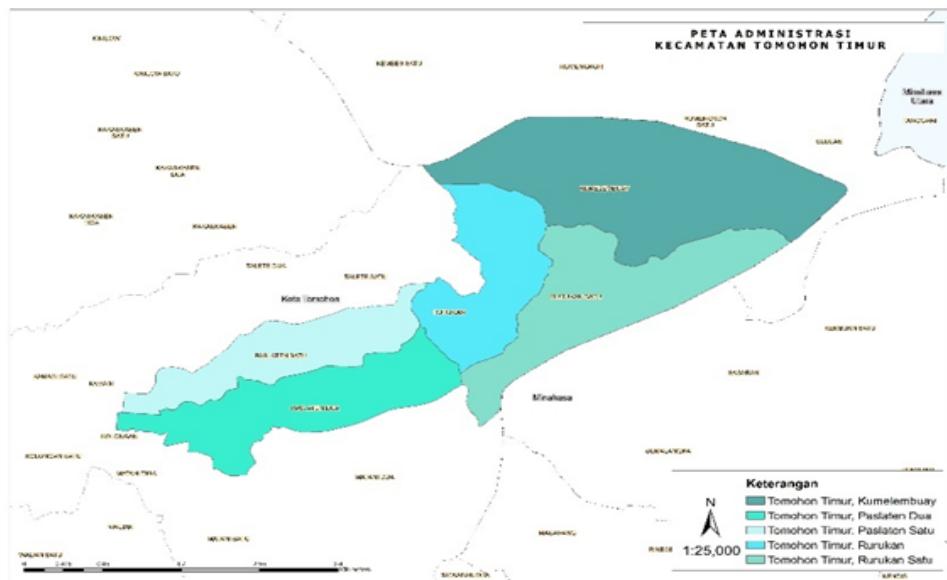


Figure 2. Administrative Map of East Tomohon District

In general, East Tomohon District is an area located in the highlands, making it a very interesting area to visit because of its natural beauty, coolness and tourist attractions. Tourism activities are strategic activities to

be developed in East Tomohon District, Tomohon City, in an effort to increase Regional Original Income (PAD) and expand business fields and employment opportunities for the community in Tomohon City.

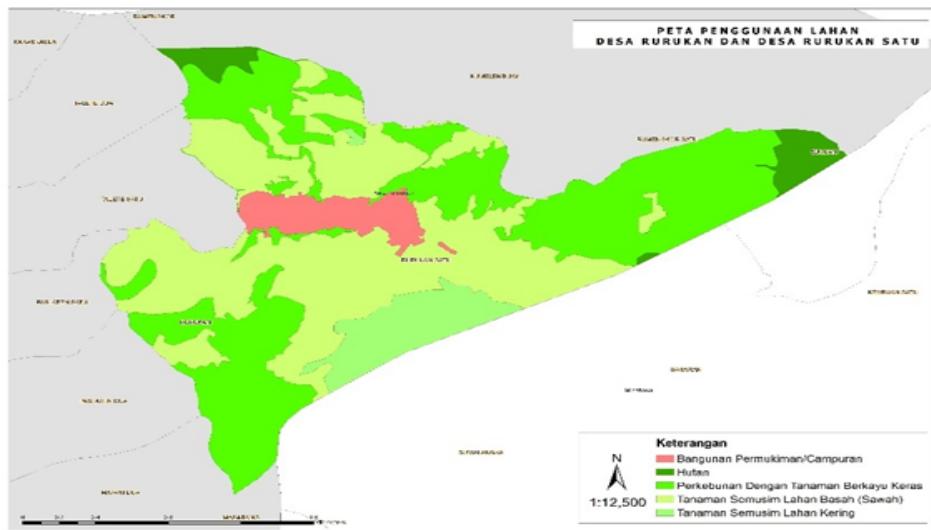


Figure 3. Land Use Map of Rurukan and Rurukan Satu Villages

One of the tourism potentials owned by East Tomohon District is Rurukan agrotourism. Currently, the agrotourism area is still managed by local residents

traditionally. However, this very high agrotourism potential has not been fully developed and utilized optimally, seen from the lack of supporting facilities for

tourist attractions and the condition of infrastructure and facilities that are not well maintained, and limited information about the agrotourism area in East Tomohon District.

The Potential of Rurukan Agrotourism in Tomohon City

In accordance with the potential owned or the area left by ancestors in a country, various types of tourism have emerged which are developed as activities which over time have their own characteristics based on geographical location, travel destinations and division according to their objects. One of them according to geographical location is Agrotourism. Agrotourism is part of a tourist attraction that utilizes agricultural businesses (agro) as a tourist attraction. Through the development of agrotourism which emphasizes local

culture in utilizing land, it can increase farmers' income while preserving land resources, and maintaining local culture and technology which are generally in accordance with the conditions of their natural environment.

Rurukan Agrotourism Area is located in East Tomohon District in two sub-districts, namely Rurukan Village and Rurukan 1 Village, which based on the Regional Spatial Plan is a potential for developing the tourism sector. The community in Rurukan Village and Rurukan one livelihood as farmers is the largest livelihood and also more than other sub-districts in East Tomohon District. Where 50% of the population in Rurukan Village make a living as farmers and in Rurukan 1 Village 72% (Village Data, 2024) the population makes a living as farmers.

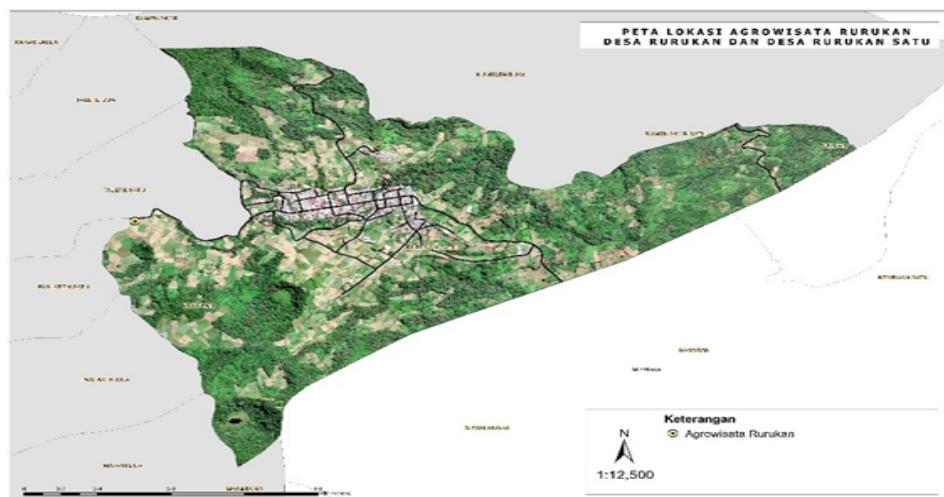


Figure 4. Map of Rurukan Agrotourism Location, Rurukan Village and Rurukan Satu

The large number of people working as farmers is supported by the location of fertile agricultural land and is on a variety of slopes, with slopes between 0-2%, 15-25%, 25-40%, and above 40%, which are denominated as

slopes of 15-25% and 25-40%. And also supported by the intensity of rainfall throughout 2023 is 0-2000 mm / year with an average temperature of 18-30 degrees Celsius, allowing farmers to grow horticultural crops fertilely.

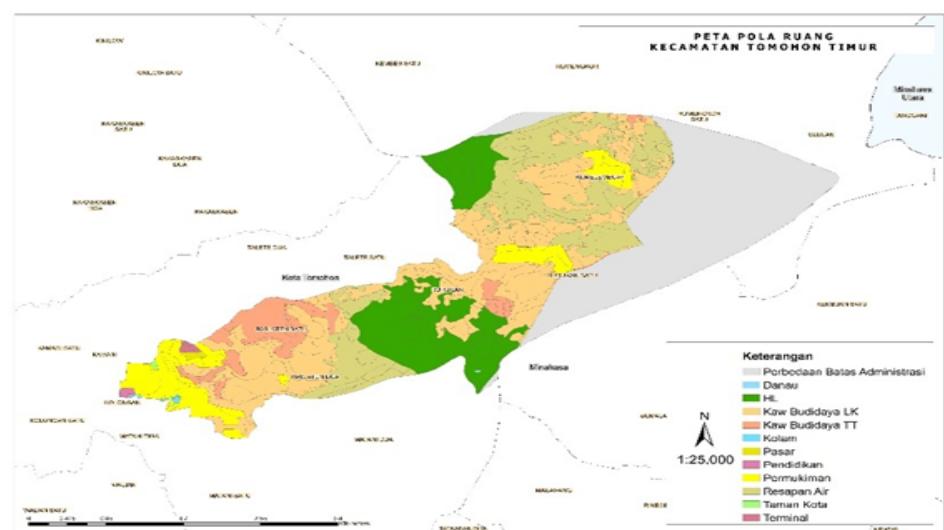


Figure 5. Spatial Pattern Map of East Tomohon District

The availability of the road network is able to support the flow of tourists and vehicles where the construction of the existing road network is mostly paved with an average width of 3-5 meters. The agrotourism area can be reached from various directions, the distance from within Tomohon City: 5200 meters from Paslaten (East Tomohon), 7500 meters from Matani (Central Tomohon), 13000 meters from Lahendong (South Tomohon), 13000 meters from Tinoor (North Tomohon), and 14000 meters from Tara-tara (West Tomohon). In addition to the distance from within Tomohon City, the following is the distance from outside Tomohon City: 13000 meters from Tondano (Minahasa Regency) and 26000 meters from Manado. This makes Rurukan agrotourism easy to reach.

Tourism potential is everything that is in a tourist destination, and is an attraction for people to come and visit the place. The development of a tourist area is an alternative that is expected to be able to encourage both economic potential and conservation efforts. The tourism potential in Rurukan and Rurukan 1 Villages are: Mount Mahawu, Tintingon Hill, Temboan Peak, Sparta Stable, and Rurukan Peak.

With the increasing growth of tourist attractions or rides in the Rurukan area, it creates new problems for the lives of farmers and the environment. Many tourism in Indonesia are built by utilizing natural resources as natural tourism, such as agricultural atmosphere, resulting in the conversion of agricultural land to non-agricultural land, which in this case becomes the tourism industry. Land conversion or commonly referred to as land conversion is a change in the function of part or all of the land area from its original function (as planned) to another function (Lestari, 2009). The influence of socio-economic factors of farmers on the application of rice PTT simultaneously significant effect. While partially socio-economic factors on the variable age and length of farming have a positive and significant effect on the application of rice PTT (Febrianti et al., 2024)

The impact of agricultural land conversion involves various broad dimensions of interest, namely not only threatening the sustainability of food self-sufficiency, but also related to labor absorption, welfare equality, environmental quality and the stability of the social structure of society (Dwipradnyana, 2014). The impact has begun to be felt by the community in the Rurukan agrotourism area. Therefore, in the development of sustainable agrotourism, a pentahelix model is needed where there is collaboration between the government, academics, business, community and mass media. According to Room (2017) A person will benefit from his experience, because with that experience he will have the opportunity to see, compare and choose, making it easier for him to solve the problems he faces

Actors involved in the development of Rurukan agrotourism

Rurukan Agrotourism has great potential, uniqueness, and tourist attraction, but it needs a lot of touches to be developed. Efforts to develop tourism cannot be done without the intervention of local stakeholders. There must be efforts to synchronize cooperation in developing tourism with various parties including tourism associations in the city of Tomohon, so that community participation in developing tourism can grow and be directed in accordance with government policies.

Pentahelix is a multi-party concept where elements of government, academics, agencies and/or business actors, society or communities, and mass media collaborate and commit to achieving the same goal.

Government

Government organizations, namely bureaucracy, are seen as the administrative agents most responsible for implementing policies. According to Yuningsih et al (2019), the authority held by the bureaucracy to fully obtain the power to implement policies in its operational area is due to the mandate from the legislative institution. The local government bureaucracy is expected to be involved in the pentahelix model of Rurukan agrotourism development for the advancement of the local community. The government plays a role in providing access and infrastructure related to tourism; facilitating the local craft industry and trade; facilitating the agricultural sector; and providing guidance to rural communities. The bureaucracy as the main actor in implementing public policies in order to encourage development as is the case in Rurukan village. The government, in this case the Mayor of Tomohon, the Head of the Tourism Office, the Head of the Agriculture Office and the Village Heads of Rurukan and Rurukan I, strongly supports the development of Rurukan agrotourism by facilitating infrastructure leading to rural areas such as in the construction of roads in the community's agricultural areas in order to facilitate transportation in transporting farmers' crops.

Academics

Academics as actors who are often involved in policy, have expertise and are research institutions that play a role in policy implementation. In the development of agrotourism, academics in this case universities and research institutions play an important role in forming a knowledge-based society. The involvement of academics in the development of rural tourism is implemented from applied research conducted in villages in an effort to encourage tourism development. Innovation is the keyword in the involvement of academics, in the dissemination of information and the application of technology, entrepreneurship through

collaboration and beneficial partnerships between academics, government, business, communities and the mass media. The results of this study are in line with the research of Oka et al (2021), Academics are needed to be involved because they have expertise in tourism policy implementation. Academics and research institutions play an important role in shaping a knowledge-based society.

Business people

The development of Rurukan agrotourism is an opportunity for the community to be able to drive the rural economy by becoming businessmen/entrepreneurs. Business in the tourism sector is now the hope of the community in improving welfare. Local people are now increasingly interested in doing business and planting crops in agrotourism areas because they feel the benefits directly. But unfortunately, many people have not taken advantage of the business product market that can be developed and offered to tourists, such as local village cuisine, vegetables or fruits and becoming tour guides. The development of this tourist place or vehicle has caused a change in land use that affects their lives both in environmental, social and economic conditions. The impact on the agricultural sector with the development of tourist facilities includes the rate of conversion of agricultural land to non-agricultural land will be higher, the decline in the quality of agricultural land due to improper management, and also the weakening of community appreciation for agriculture. Whereas the main object of agrotourism is agriculture and its natural scenery. Farmers who are categorized as experienced according to (Manyamsari & Mujiburrahmad, 2024) are farmers who have farming experience for more than 20 years, while those between 10-20 years are categorized as quite experienced and less than 10 years are categorized as less experienced.

Community

Another actor that plays an important role in the success of tourism development is the community. Local communities as owners of rural areas are required to obtain the right to develop their areas to be developed into agrotourism areas so that they are happy to participate in tourism development. The role of the community, starting from planning, implementation to supervision of agrotourism development in the village known as the concept of community-based tourism. This concept of community-based tourism must be implemented properly in order to raise public awareness in preserving natural resources, as a means to maintain and preserve life and cultural identity as a spiritual aspect and a source of economic life. According to Mukhlis et al (2024), the labour needed by farmers is easily obtained whenever farmers need it, this is because the average surrounding community works more as

farmers so that if farmers offer work in the cultivation of rice plants they want especially at that time they are not working.

Mass media

Mass media as a means of socialization in promoting tourist villages so that they are increasingly popular in the eyes of customers. Communication through appropriate social media will certainly influence customer interest in visiting Rurukan Agrotourism. Now mass media technology is increasingly sophisticated as a liaison between the government, academics, business people, and the community in communicating the products/services offered. Mass media in modern society today continues to experience rapid development. Social interactions that are easily established in communication, for example through the use of social networks such as Facebook, Instagram, YouTube, Twitter and so on, prove that today's communication is not hindered by distance and time. The ability of mass media to disseminate information without being limited by the dimensions of space and time is what is utilized in the tourism sector, including in marketing Agrotourism products. The results of this study are in line with the research of (Pugra et al., 2021), Mass media is indispensable in promoting tourist villages so as to influence customer interest in visiting agro-tourism. Increasingly sophisticated mass media as a liaison between government, academics, business people, and the community in communicating the products/services offered. Social interaction that is easily established in communication, for example through the use of social networks.

Sustainable Agrotourism Development in Rurukan, Tomohon City

Agriculture is a business that has long been passed down from generation to generation, becoming part of the livelihood of the people in Rurukan Village, Tomohon City. Supported by natural conditions, agricultural businesses have shaped people's lifestyles without realizing that what they do has formed an attraction for others who see it.

In the process of developing agrotourism, there are several approaches that must be considered, namely: 1). Conservation-based development means that development continues to maintain the authenticity of the agro-ecosystem by striving to preserve natural resources, the environment, history, culture and recreation; 2). Community-based development, meaning that development must follow a community development pattern that places agro-tourism as an empowerment of farming communities to be able to obtain added value both in terms of agricultural products and from tourist visits; 3). Determination of

agro-tourism areas/regions as development areas/regions; 4). Inventory of agro tourism strengths; 5). The role of tourism institutions and agricultural institutions in developing agro-tourism (Tompodung et al., 2017).

In addition, in managing agrotourism, it is necessary to carefully consider several aspects that will underlie the success of agrotourism management, such as: 1. Human resource aspects; 2. Financial aspects; 3. Facilities, infrastructure, and infrastructure aspects; 4. Aspects of selecting agrotourism locations.

In the development of agrotourism tourism is a complex task due to the interdependence of various stakeholders and fragmented control over resources. Therefore, the development of sustainable tourism at the regional level requires cooperation and collaboration between actors through optimization of the role of business government, community, academic and mass media as stated in the Regulation of the Minister of Tourism Number 14 of 2016 concerning Guidelines for Sustainable Tourism Destinations.

Based on the results of in-depth interviews with pentahelix actors in agrotourism development, 4 aspects of agrotourism development in Rurukan, Tomohon City were obtained.

Table 2. Longlist of perceptions of Pentahelix actors in the development of Rurukan Agrotourism

Aspect	Variables
Environment	Environmental regulations
	Community synergy
	Contribution to the environment
	Conservation promotion
	Community Support
Economy	Employment Opportunity
	Workforce development
	Workforce Priorities
	Promote tourist villages
	Economic Improvement
Culture	Cultural preservation
	Tourism impact counseling
	Local cultural uniqueness award
	Promotion of local culture
	Wide access to tourist attractions
Experience	Engage in community culture
	Publication of travel experiences

Source: Interview results (2024)

Table 4. FGD Results

Aspect	Variables	Pentahelix Actors										Total
		1	2	3	4	5	6	7	8	9	10	
Environment	Environmental regulations	3	4	2	2	3	3	3	2	2	2	26
	Community synergy	3	3	3	3	4	4	4	4	3	3	34
	Contribution to the environment	4	4	3	3	3	3	3	4	3	3	33
	Conservation promotion	3	3	2	2	3	3	4	3	3	3	29
	Community support	4	4	4	3	4	4	4	3	3	3	36
Economy	Employment Opportunity	2	2	3	2	3	3	3	3	3	3	27

Pentahelix Model in Sustainable Agrotourism Development in Rurukan, Tomohon City

The Rurukan village community and Rurukan 1 village continue to synergize in managing Rurukan agrotourism in order to be able to compete with tourist attractions in Tomohon City. The management synergizes with pentahelic actors for the sustainability of the development of Rurukan Agrotourism so that it can compete competitively in the future. Through communication, coordination and harmonious cooperation, it is hoped that solutions can be found in developing Rurukan Agrotourism towards sustainable tourism considering the activities in developing agrotourism which are very complex. Therefore, the development of sustainable tourism at the regional level requires cooperation and collaboration between actors through optimizing the roles of business, government, community, academic and mass media as stated in the Regulation of the Minister of Tourism Number 14 of 2016 concerning Guidelines for Sustainable Tourism Destinations.

Based on the longlist obtained, a focus group discussion was conducted on the pentahelix actors of Rurukan agrotourism development. The Pentahelix Actors who attended the FGD consisted of:

Table 3. FGD Participants

Representing Elements	Amount
Public figure	1
Academics	2
Tourism Entrepreneur	1
Land owners in Rurukan	1
Government	4
Journalist	1
Amount	10

The selection of FGD participants was based on the ability and commitment of the participants in advancing and developing Rurukan Agrotourism. The academics were taken from Sam Ratulangi University. From the Government represented by the Head of the Tomohon City Tourism Office, from the Tomohon City Agriculture Office, the Head of Rurukan Village and Rurukan Village 1, Land Owners and Tourism Entrepreneurs Sparta Stable which still exists today and Journalist representing the press who are widely involved in the world of tourism and culture. The results of the FGD are in Table 4.

Aspect	Variables	Pentahelix Actors										Total
		1	2	3	4	5	6	7	8	9	10	
Culture	Workforce development	2	2	2	2	2	3	3	2	2	2	22
	Workforce priorities	3	3	4	4	4	4	4	4	4	4	38
	Promote tourist villages	4	3	3	3	3	3	4	4	3	4	34
	Economic Improvement	4	3	3	3	3	3	3	3	4	4	33
	Cultural preservation	3	3	3	3	4	4	4	4	3	3	34
	Tourism impact counseling	3	4	3	3	3	4	3	3	3	3	32
	Local cultural uniqueness award	4	3	4	4	4	4	4	4	3	3	37
Experience	Promotion of local culture	4	4	4	4	4	4	4	4	4	4	40
	Wide access to tourist attractions	4	4	3	3	4	4	4	3	4	4	37
	Engage in community culture	3	3	4	4	4	4	4	4	3	4	37
	Publication of travel experiences	4	3	4	3	4	4	4	4	4	4	38

Source: Processed data (2024)

Then the performance priorities carried out in the development of sustainable Rurukan Agrotourism were analyzed and the following was obtained:

Table 5. Performance Priorities carried out in the Sustainable Development of Rurukan Agrotourism

Performance Indicators	Priority					n	Assessment Tape					SIT	PK	Priority
	1	2	3	4	5		1	2	3	4	5			
Environmental regulations	5	4	1			10	0	20	12	2	0	34	3.4	
Community synergy	6	4				10	0	0	18	8	0	26	2.6	2
Contribution to the environment	7	3				10	0	0	21	6	0	27	2.7	3
Conservation promotion	2	7	1			10	0	8	21	2	0	31	3.1	
Community Support	4	6				10	0	0	12	12	0	24	2.4	1
Employment Opportunity	3	7				10	0	12	21	0	0	33	3.3	
Workforce development	8	2				10	0	32	6	0	0	38	3.8	
Workforce Priorities	2	8				10	0	0	6	16	0	22	2.2	1
Promote tourist villages	6	4				10	0	0	18	8	0	26	2.6	2
Economic Improvement	7	3				10	0	0	21	6	0	27	2.7	3
Cultural preservation	6	4				10	0	0	18	8	0	26	2.6	3
Tourism impact counseling	8	2				10	0	0	24	4	0	28	2.8	
Local cultural uniqueness award	3	7				10	0	0	9	14	0	23	2.3	2
Promotion of local culture		10				10	0	0	0	20	0	20	2	1
Wide access to tourist attractions	3	7				10	0	0	9	14	0	23	2.3	2
Engage in community culture	3	7				10	0	0	9	14	0	23	2.3	3
Publication of travel experiences	2	8				10	0	0	6	16	0	22	2.2	1

Source: Processed data (2024)

Based on the results of the performance priorities obtained (Table 5), the pentahelix actors received priorities that must be carried out in the development of Rurukan agrotourism, namely the Government, Entrepreneurs, Community Leaders, Academics and the Media must collaborate in 4 aspects:

Environmental Aspects

From the environmental aspect, the priority of performance carried out collaboratively is Community Support, where in the development of Rurukan agrotourism, support from the community is needed so that it can be successful. The second priority is Community Synergy. The community must synergize in

advancing Rurukan agrotourism, no one should only prioritize the interests of land owners or business owners in seeking unilateral profits but there must be synergy so that it can be successful. The third priority is contribution to the environment. Efforts are made to maintain, preserve and improve environmental conditions. Some forms of contribution that can be made include; reducing waste, planting trees and saving water.

Economic Aspects

The priority that must be done from the economic aspect is that the pentahelix actors agree to collaborate for the priority of local labor in advancing Rurukan

agrotourism. The use of local labor can help improve the community's economy by opening up employment opportunities. The second priority in the economic aspect is Agrotourism Promotion. The lack of promotion of Rurukan Agrotourism has resulted in a lack of visitors so that many tourist attractions are closed. Promotion is important so that it can excite residents and tourism entrepreneurs in Rurukan. With the many visitors, community income can increase and increase community income. The third priority is Economic Improvement. In improving the economy. Synergy between stakeholders and the community must exist. MSMEs can sell their products at tourist attractions, in addition local artists can hold local arts performances for visitors so that they can increase community income while preserving culture.

Cultural Aspects

Promotion of local culture is the first priority that must be done. Rurukan, in addition to its natural beauty, also has a culture that should be preserved, including the traditional Kabasaran dance, which is a war dance that depicts the spirit of struggle, courage and togetherness. Traditional musical instruments such as Gong and Tifa. As well as woven crafts typical of Rurukan village. Traditional arts in Rurukan village not only reflect cultural richness, but also show the closeness of the community to nature and ancestral traditions. The second priority is appreciation of local culture. The lack of local cultural attractions has resulted in a lack of interest among young people in Rurukan village to preserve culture. So that the actors in developing Rurukan agrotourism feel the need to develop local culture for cultural preservation.

Experience Aspect

The experience aspect is considered important, because if someone has never visited a place, they cannot tell the beauty of a place. The first priority in this aspect is the publication of tourist experiences. Publication of tourist experiences is the process of sharing stories, information and reviews about tourist destinations taken during the trip. This can be done through various platforms to attract tourists and provide useful guidance. The lack of publication about the Rurukan agrotourism area makes many tourists unaware of the potential of this natural tourism. In addition, an important priority that must be worked on is wide access to tourist attractions. Lack of information about access to Rurukan Agrotourism results in a lack of visitors. The government is improving the existing infrastructure, so that accessibility in the Rurukan agrotourism area can run well and can make tourists comfortable. Good infrastructure must also be maintained by the community and all parties who use it so that it is not easily damaged.

In the development of sustainable Rurukan agrotourism, the management must involve the local community. This aims to increase public awareness in preserving the nature and culture they have. It is also recognized that in the development of community-based tourism usually requires external facilitation and assistance, for that it is recommended to be able to establish partnerships with external entities. Various partnership pattern models are possible. Various entities can be involved in partnerships with management parties such as the private sector, NGOs, and government entities, academics and the media. These actors are expected to play different roles in the development of community-based tourism. However, the role of government is still considered fundamental in the development of community-based tourism. The government must be the main protagonist, whose task is to "formulate an official definition of the form of tourism to inform regulations and policies to the community."

Conclusion

Pentahelix actors in the development of sustainable agrotourism in Rurukan, Tomohon City consist of the Government which plays a role in providing access and infrastructure related to tourism; facilitating the agricultural sector; and providing guidance to rural communities. Academics in this case universities and research institutions play an important role in forming a knowledge-based society. Business people are expected to encourage the community to participate in exploring the tourism potential they have to be sold to visitors to grow the local economy. Then the mass media can disseminate information without being limited by the dimensions of space and time, this is what is utilized in the tourism sector.

The performance of the development priorities of this pentahelix collaboration is obtained from 4 aspects, namely Environment, Economy, Culture and Experience. The Environmental aspects that are the priority for development are Community support, community synergy and contribution to the environment. The Economic aspects that need to be developed collaboratively are the priority of local workers employed, Agrotourism Promotion so that many visitors visit and community economic development. Cultural aspects, the priority that must be worked on is the promotion of local Culture, Appreciation of local culture by conducting local art attractions and Cultural Preservation. The last aspect of the priority collaboration that must be worked on is the Experience aspect. The experience that must be done is the publication of tourism experiences so that it can be a guide for tourists, External access to the agrowisatata place must be developed together so that accessibility in

the Rurukan agrotourism area can run well and can make tourists feel comfortable.

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R.K.: Developing ideas, analyzing, writing, reviewing, responding to reviewers' comments; M.T, J.B., M.K.: analyzing data, overseeing data collection, reviewing scripts, and writing.

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Conflicts of Interest

The authors declare no conflict of interest.

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