# IDENTIFICATION OF OBJECT AND TOURIST ATTRACTIONS FOR AGROTOURISM DEVELOPMENT OF HIGH POTENTIAL VILLAGE IN BATANG SUB-DISTRICT

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## ABSTRACT

As an agricultural and tourism area, Batang Onang Sub-district has six villages with a high potential classification. Agrotourism is promoted based on the relationship between agriculture and tourism. Agrotourism in this sub-district was developed by integrating existing potential objects with agricultural activities to be a new tourist attraction. This study aims to identify potential objects and tourist attractions for the development of agrotourism in this sub-district. This study used analysis of Objects and Tourist Attractions (OTA) and analysis of Objects and Natural Tourist Attractions (ONTA). The results showed that three villages had a high potential classification (50%) and three villages had low potential for agrotourism development in Batang Onang Sub-district. Nature tourism, historical/archaeological tourism, and educational tourism were integrated for agrotourism activities in this sub-district. an be integrated into agrotourism activities. This study concludes that the interesting criteria for agrotourism are natural beauty, distance and travel time, supporting facilities, types of tourism activities, and accessibility have high values in agrotourism development. Each village that has high scores will be proposed for agrotourism development, while those with low scores will be proposed for supporting agrotourism development in this sub-district.

Keywords: agrotourism, development, ota, potential, rural

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## **INTRODUCTION**

Rural areas have rich natural resources that can be utilized to meet community needs in rural and urban areas. The rural economy makes a significant contribution to employment and national prosperity (Merrell *et al.*, 2022). Chozin *et al.* (2010) stated that rural areas have high potential which contains ecological logic as a balance of life with the natural surroundings. Nugroho and Negara (2015) also stated that rural potential comes from sociocultural life, natural environment, and economic activity. One of the leading rural potentials in the tourism sector is integrated with agriculture.

Chin *et al.* (2017) show that the development of tourist destinations in rural areas is profitable because they offer everything under the tourists interests who want to experience traveling in authentic rural areas, interact with local communities, and get to know the local products; furthermore, Ayhan, *et. al.* (2020) stated rural tourism is a valid development strategy for rural areas in many developed and developing countries. It's supported by Guzman-Parra *et al.* (2015) that tourism villages have a relatively stable pattern and are one of the formulas to encourage regional development.

Huang *et al.* (2016) suggest that Europe is a country that develops tourism in rural areas in which the development is supported and encouraged as a solution to social and economic distress. For example, Michigan which is one of the countries that focuses on rural tourism to boost the economy, moreover farmers in Michigan utilize tourism with the advantages and diverse potential of agriculture to keep their farming businesses productive and boost the economy (Che *et al.*, 2005). Yang (2015) explained that tourism development remains a key strategy to boost China's rural economy and sosial development and particulary to mitigate poverty in the past two decades.

Rural areas have been regarded as suitable areas for tourism and recreation and have been used for this purpose for a very long time. However, while rural economies are increasingly recognized for the contribution they make to economic development, they are also a source of unrealized growth potential (Phillipson et al., 2019). Yuan et al. (2017) stated that tourism in rural areas can revitalize the economy, solve agricultural problems, increase farmers' income, and create jobs. Faber and Gaubert (2019) state that tourism has a large and significant impact on the local economy compared to areas without tourist attractions. A study by Soliku, et. al. (2021) noted that most rural communities in Larabanga village, Ghana are involved in food crop farming and animal rearing as their primary source of livelihood. It is believed that livelihoods connected to tourism generate more income and at a faster rate. Besides, rural tourism has attracted more attention from academics, politicians, and investors (Lane and Kastenholz, 2015).

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Shahbaz *et al.* (2020) revealed that tourism has become a main driver of socio-economic development in terms of an increase in jobs and generation of new enterprises and infrastructures. Soliku *et al.* (2021) also stated that the socio-economic impact of the COVID-19 pandemic was severe, so tourism development could be one of the steps to solve the problems because tourism had positive impacts on village development, economic improvement, and a means of introducing local products and traditions, as well as maintaining and preserving the surrounding natural environment. Although the tourism development was going to increasingly popular, Lun *et al.* (2016) confirmed that rural destinations should be careful about possible environmental issues, as well as economic and social.

Agrotourism is part of rural tourism. Rural tourism has become an umbrella concept covering many types of

tourism including agrotourism (Gege et al., 2023; Kaswanto, 2017, Lane and Kastenholz, 2015; Arifin et al., 2009). Agrotourism is promoted based on the relationship between agriculture and tourism. This tourism is open to travelers who seek nature, entertainment, cultural education, and other activities, but the farm's owner can also generate more income through visitors rather than only the harvest (Petroman and Petroman, 2010). Agrotourism provides various activities such as learning a way of life and the culture of communities. There are many activities to support agriculture; fruit and vegetable picking, testing bee honey, deciphering the craft of wine-making, purchasing souvenirs from souvenirs shops, accommodation, food, event festivals, etc (Petroman and Petroman, 2010). Recently, agrotourism is increasingly popular and growing so that it becomes an option for most people to travel to. Travelers usually ask how the interesting activities to do when they arrive at a particular destination. Palit et al. (2017) define agrotourism as a series of tourism activities by utilizing the potential of agriculture as a tourist attraction in the form of natural panoramas of the agricultural area and the culture of the agricultural community, moreover Mastronardi et al. (2015) state that various process activities ranging from cultivation, pre-harvest, post-harvest, and processing of agricultural products to the marketing process can be utilized as agrotourism objects. Agrotourism has been successful in promoting rural development and protecting the environment as agrotourism tends to develop more sustainable techniques that have positive impacts on biodiversity, landscapes, and natural resources. Agrotourism is promoted based on the relationship between agriculture and tourism. Many agro-tourism activities support agriculture that is picking fruit, raising livestock, making handicrafts, buying souvenirs, foods, and festivals. Therefore, the development of agrotourism in rural areas has attracted more people as it offers new travel experiences for tourists.

An area that is closely related to agriculture feel and has become one of the tourist areas is Batang Onang Subdistrict. This sub-district is part of Padang Lawas Utara District, North Sumatra Province. The main sources of income for the population in this sub-district are agriculture, plantations, and animal husbandry reaching 92% (BPS Batang Onang Sub-district, 2019). The document of Regional Regulation Spatial Planning (RTRW) Padang lawas Utara District (2015) shows that Batang Onang Sub-district is an area designated as a tourism area, and based on Middle Term Investment Program (RPIJM) Padang Lawas Utara District (2019), this sub-district has natural resource potential as the land in this sub-district is suitable for wetland food crops, dry land food crops, annual crops/plantations, animal husbandry, and fisheries; besides, RPIJM Padang Lawas Utara District 2015-2019 also showed that this subdistrict is included in potential areas affecting economic growth and the largest spatial structure development plan in Padang Lawas Utara District. Batang Onang Subdistrict has criteria for agrotourism area based on (Bappenas, 2004). Community activities in this subdistrict are dominated by agricultural and tourism activities. The primary sector in this area is agriculture, horticulture, fisheries, animal husbandry, and tourist attractions in nature tourism, historical/ archeological tourism, and educational tourism. Based on these potentials, the development of agrotourism in this district is appropriate. Developing agrotourism can provide many benefits by exploring more agricultural potential, tourism potential, increasing farmers' income and becoming a key to increasing regional income; therefore, agrotourism can be developed by integrating tourist objects with agricultural activities to become a new tourist attraction (Kaswanto, 2015).

Based on the classification of village potential, Batang Onang Sub-district covers six villages that are included in the classification of villages with high potential, that is Batang Onang Baru Village, Padang Garugur Village, Simardona Village, Janji Manahan Village, Batu Nanggar Village, and Morang Village. The classification refers to the indicators proposed by BPS (2018) that is economic growth, environment, socio-culture, empowerment of natural resources, transportation, communication and information, security, development and empowerment of rural communities. Thus, agrotourism development in village areas with high potential in this sub-district aimed to maximize the potential in this sub-district by taking advantage of opportunities to provide a positive impact on other villages.

This research aims to identify the potential of objects and tourist attractions for developing agrotourism in Batang Onang sub-district. This study is expected to be an alternative problem solving and provide input for agricultural and tourism sectors in Batang Onang Subdistrict, and as a reference for agrotourism planning. This study is also expected to develop and direct tourism to improve the economy of farmers, and rural communities, and support village development.

## **METHODS**

## Study Area and Research Time

The study was conducted in Batang Onang Sub-district, Padang Lawas Utara District, Sumatera Utara Province (Figure 1). Observation carried out in 6 villages: (1) Batang Onang Baru Village; (2) Padang Garugur Village; (3) Simardona Village; (4) Janji Manahan Village; (5) Batu Nangar Village, and (6) Morang Village. The selection of the location was carried out by purposive sampling method. Based on data from BPS Kecamatan Batang (2019) this sub-district has 31 villages and 6 villages with a high potential village classification, so that village with high potential was the location of observation in this study.

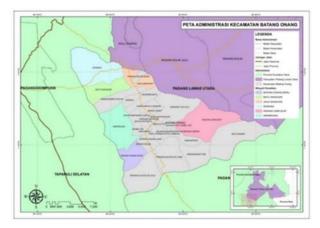


Figure 1. Research Area

#### **Tools and Materials Research**

The tools in this study were Camera, ArcMap 10.8 and Microsoft Office Software, while the materials covered secondary Maps, Questionnaire, 2014-2034 Spatial Planning Documents (RTRW) of Padang Lawas Utara District, Batang Onang Sub-district Catalogue in Figures (BPS Kecamatan Batang (2021), Guidelines for Identification of Potential Tourist Attractions (Pujaastawa and Ariana, 2015) and Guidelines for Analysis of Operational Areas for Potential Objects and Tourist Attractions (Kehutanan, 2003). Secondary data were obtained from various sources of information such as literature studies, scientific journals, articles, and news relevant to the research topic; also, obtained from agencies or institutions in Padang Lawas Utara District including Statistics Indonesia (BPS), Regional Development Planning Agency (BAPPEDA), Tourism Office, Agriculture Service, Fisheries Office, Livestock and Animal Health Service, Meteorological, Climatological, and Geophysical Agency (BMKG) of Aek Godang.

#### **Data Analysis Procedures**

The study used analysis of Potential Objects and Tourist Attractions (ODTW). ODTW is an analysis using an adjusted assessment table based on the Guidelines for Identification of Potential Tourist Attractions (Pujaastawa and Ariana, 2015) and Guidelines for Analysis of Operational Areas for Potential Objects and Tourist Attractions (Kehutanan, 2003) that have been adjusted to research needs. The analysis was carried out through four stages (Figure 2).

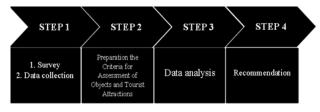


Figure 2. The step of ODTW Analysis

The first stage is field observations were to observe agrotourism potential based on tourism objects and attractions. The interviews with the community, village heads, and Padang Lawas District Tourism Office were to obtain information and potential data that have not been obtained during field observations. Literature studies aimed at obtaining a wider orientation regarding the development of agrotourism objects and attractions. Second, determining, compiling, and evaluating the criteria for evaluating the identification of potential objects and tourist attractions for developing agrotourism in the Batang Onang Sub-district. The assessment criteria used were a potential object, uniqueness and authenticity, natural beauty, accessibility, distance from the city center, distance from the sub-district capital, and distance from main roads, supporting facilities, and types of tourism activities. Assessment of criteria using a Likert scale. Likert scale adjusted according to the assessment based on assessment Guidelines ODTW-A with a range of values 1-4 (Kehutanan, 2003) seen in (Table 1). Third step is data processing where each criterion was assessed with a crosscheck examination technique to determine the validity of the data. After completing the assessment, the results were classified into three potential interval classes. First is a high potential, which has a high potential to be developed as an agrotourism area. The second is medium potential in which the object has the potential to be developed as an agrotourism area. Third, low potential, which is quite potential to be developed as an agrotourism area. Interval classes were obtained by using the Struges Model (1926) as presented in formula (1).

$$\frac{\text{Class Interval (CI)} =}{\frac{maximum \ score \ (SMax) - Minimum \ score \ (SMin)}{number \ of \ category \ (K)} \dots (1)$$

Description:

CI: the value of interval in the determination of assessment classification interval; Smax: highest score; Smin: lowest score; K: number of assessment classifications.

#### **RESULT AND DISCUSSION**

In the last few years, the concept of a holiday is the trip to a beautiful beach, though many people now prefer natural surroundings. This change in understanding of the holiday has given rise to the concept of rural tourism in its current meaning. Rural tourism has been the leading alternative livelihood for farmers by using gricultural products to create a new attraction for tourists in rural areas.

The assessment of the identification of the potential for agrotourism development in Batang Onang Sub-district resulted in the potential classification values as shown in (Table 2)

Table 1. Aspects and Criteria for Identification of Object and Tourist Attractions for Agrotourism Development

| No | Assesses and Criteria  | Score        |  |                                 |                  |  |  |  |
|----|--|--------------|--|---------------------------------|------------------|--|--|--|
| No | Aspects and Criteria   | 4            | 3  | 2                               | 1                |  |  |  |
| 1  | Potential objects  | Not found in | <3 Similar                                     | 3-5 Similar                     | >5 Similar       |  |  |  |
| 1  | i oteritiar objects  | other places | potency  | potency                         | potency          |  |  |  |
|    | Crops; Horticultural; Plantation;                              |              |  |                                 |                  |  |  |  |
|    | Fishery; Farms; Industry; Handicrafts;                         |              |  |                                 |                  |  |  |  |
|    | Traditional art; Historical heritage;                          |              |  |                                 |                  |  |  |  |
|    | Known attractions (natural tourism                             |              |  |                                 |                  |  |  |  |
|    | (lakes), historical tours, and educational                     |              |  |                                 |                  |  |  |  |
|    | tours)   |              |  |                                 |                  |  |  |  |
| 2  | Uniqueness and Authenticity                                    | Authentic    | Assimilation<br>(Dominated by<br>Authenticity) | Assimilation<br>(New character) | Not<br>authentic |  |  |  |
|    | Traditional ceremonies; Community culture; Historical heritage |              |  |                                 |                  |  |  |  |

| No | Acreate and Criteria   | Score                                   |  |                          |                                    |  |  |  |
|----|--|---|--|--------------------------|------------------------------------|--|--|--|
| No | Aspects and Criteria   | 4                                       | 3  | 2                        | 1                                  |  |  |  |
| 3  | Natural beauty   | Very beautiful                          | Beautiful                                | Less beautiful           | Not<br>beautiful                   |  |  |  |
| 4  | Accessibility  | Passed by<br>large to small<br>vehicles | Passed by<br>medium to<br>small vehicles | Passed by small vehicles | Cannot be<br>passed by<br>vehicles |  |  |  |
| 5  | Distance from city center  | <5km                                    | 5-10km                                   | 10-15km                  | 15-20km                            |  |  |  |
| 6  | Travel time from the sub-district capital  | <30 minutes                             | 1-2 hours                                | 2-3 hours                | >5 hours                           |  |  |  |
| 7  | Distance from the main road  | <1km                                    | 1-5km                                    | 10-15km                  | 15-20km                            |  |  |  |
| 8  | Supporting facilities  | > 4 facilities 3 facilities             |  | 1 facility               | No facility                        |  |  |  |
|    | Restaurant; Places of Worship; Health<br>center; Public transportation; Souvenir<br>shop; Telecommunications network;<br>Power grid; Hotel/inn                                       |   |  |                          |                                    |  |  |  |
| 9  | Types of Tourism Activities  | > 4 activities                          | 3 activities                             | 1 activitiy              | No activity                        |  |  |  |
|    | Cultural tourism; Educational tourism;<br>Sanctuary tourism; Religious tourism;<br>Climbing; Tracking; Fishing;<br>Cultivation and harvesting process;<br>Processing (agro-industry) |   |  |                          |                                    |  |  |  |

Source: (Guidelines for Identification of Potential Tourist Attractions (Pujaastawa & Ariana, 2015) and Guidelines for Analysis of Operational Areas for Potential Objects and Tourist Attractions (Forestry, 2003)) modified

|     | Criteria and Assessment |                   |                             |                |               |                              |  |                            |                       |                                |        |                |
|-----|-------------------------|-------------------|-----------------------------|----------------|---------------|------------------------------|--|----------------------------|-----------------------|--------------------------------|--------|----------------|
| No. | Village                 | Potential objects | Uniqueness and authenticity | Natural beauty | Accessibility | Distance from<br>City center | Travel time from<br>sub-district capital | Distance from<br>main road | Supporting facilities | Types of tourism<br>activities | Amount | Classification |
| 1   | Batang Onang<br>Baru    | 2                 | 3                           | 4              | 3             | 1                            | 4  | 4                          | 4                     | 4                              | 29     | High           |
| 2   | Padang<br>Garugur       | 2                 | 3                           | 2              | 3             | 1                            | 3  | 4                          | 4                     | 3                              | 25     | Low            |
| 3   | Simardona               | 1                 | 3                           | 2              | 3             | 1                            | 4  | 4                          | 4                     | 3                              | 25     | Low            |
| 4   | Janji Manahan           | 2                 | 3                           | 3              | 4             | 1                            | 4  | 4                          | 4                     | 4                              | 29     | High           |
| 5   | Batu Nanggar            | 1                 | 3                           | 3              | 2             | 1                            | 4  | 4                          | 4                     | 4                              | 26     | Low            |
| 6   | Morang                  | 2                 | 3                           | 4              | 4             | 1                            | 4  | 4                          | 4                     | 4                              | 30     | High           |

Table 2. Assessment result of Object and Tourist Attractions for Agrotourism Development

Information: High: very potential (28,5-30); Medium: potential (27,25-27,5); Low: less potential (25-26,25)

The results showed that Batang Onang Sub-district has three villages with high potential for agrotourism development, that is Batang Onang Baru Village, Janji Manahan Village, and Morang Village, then this Subdistrict has three villages with low potential, that is Padang Garugur Village, Simardona Village, and Batu Nanggar Village. Based on the land cover map (Figure 3), Batang Onang sub-district was dominated by flat and sloping 66% topography, further slop/peak topography 31%, and valley topography 3%. Batang Onang is dominated by dense vegetation, agricultural, and shrubs.

The villages with high potential can be recommended for agrotourism development, and the village with low potential can be proposed as support area for agrotourism development. The potential of agriculture and tourism in in Batang Onang Sub-district must be developed, as according to Yulianti *et al.* (2020) in pushing the growth of tourism sector, then the areas that have tourism potential must continue to be encouraged to develop. Lun *et al.* (2021) stated in the wake of shifting from the agricultural production-based livelihoods to the alternative livelihoods represented by rural tourism, a trade-off between agricultural production and rural tourism gradually becomes the concern of smallholder farmers, thus attracting more attention to the development. Rural tourism consisted of the most of tourists visiting farms, staying in farming areas, and participating in agricultural activities, and as asserted by According to Nair *et al.* (2015), rural tourism is now acknowledged as a multi-dimensional concept involving the experience of farming activities and nature directly, like the cultural characteristics of various rural localities and their traditional life.

## Batang Onang Baru Village

Batang Onang Baru Village is the most frequently visited village by tourists as there is a famous natural tourist attraction, that is Tao Lake (Figure 4). Tao Lake is a focal point among the natural beauty of the meadow

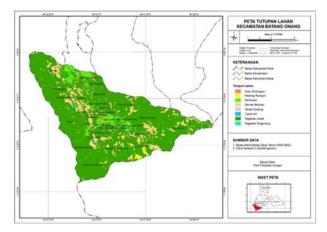


Figure 3. Land Cover Map Batang Onang Onang Subdistrict



Figure 4. Condition of lake and rice field: (a) Tao Lake; (b) Rice Field

and hills. Based on the results of the assessment scores on the criteria for agrotourism development, natural beauty, travel time from the sub-district capital, distance from the main road, supporting facilities, and types of tourism activities in this area have the highest scores.

The natural beauty in this sub-district is highly valued due to its uniqueness which does not exist in other areas. Batang Onang Baru village has more natural beauty, meadows, hills, and rice fields compared to the surrounding area. According to Clay and Daniel (2000) beauty is the main attraction for tourist to natural landscape such as highlands. Furthermore, Othman (2015) in his research concluded that the scenic beauty of highland areas such as Fraser's Hill can be a good ecological indicator of the nature-based environment, so Morang Village has a good opportunity.

Supporting facilities in this village are restaurants, places of worship, health centers, public transportation, telecommunications networks, electricity networks, and hotels/inns. Besides, there are some types of tourism activities that can be developed in this sub-district, that is climbing and tracking, while agrotourism activities are gardening, raising livestock, and fishing. The community uses the meadow for gardening and herding buffalo, cows, and sheep. Besides, Tao Lake is utilized for fishing activities for tourists who are interested in fishing. Most tourists visit this lake to fish Lonjing Fish (*mascatembelus armatus*) because this fish is rare in Tao Lake.

The results of the assessment are supported by data from the Ministry of Tourism and Creative Economy of the Republic of Indonesia showed that Batang Onang Baru Village is included in the Tourism Village Network (JADESTA). This village offers a meadow with green and yellow grass like the one in Teletubbies Hill surrounded by beautiful trees and a lake with turquoise green color. Besides, the community in this village is friendly and still upholds cultural values and customs.

## Janji Manahan Village

The next potential village for agrotourism development is Janji Manahan Village. Based on the results of the assessment scores on the criteria for developing agrotourism, this village meets the criteria of accessibility, travel time from the sub-district capital, distance from the main road, supporting facilities, and types of tourism activities.

This village is the closest village to the city center and the main road, so this village has good access that can be passed by large to small vehicles. Supporting facilities cover restaurants, houses of worship, health centers, and lodging. Tourism activities that can be done in this village are in the form of cultural and educational tourism due to its close location to the Wildlife Sanctuary. Meanwhile, agrotourism activities that can be developed are in the form of processing agricultural products (agroindustry).

Janji Manahan Village has an airport called Aek Godang Airport (Figure 5). The existence of this airport has social impacts such as encouraging public insight and increasing social networks between people inside and outside Batang Onang Sub-district. Besides, in terms of economic impacts, it encourages economic improvement in the fields of trade, services, and tourism. The existence of this airport is an opportunity to attract tourists to visit this sub-district. Study by Chow et al. (2021) showed that increases in airport subsidies brought more tourists to the cities where the airport is located. The airport has a strong effect on increasing domestic and foreign tourist visits, and the airports are effective for supporting tourism development in ethnic minority areas with uncomfortable land transportation. Therefore, Aek Godang Airport has a positive impact on agrotourism development in Batang Onang Sub-district.



Figure 5. Aek Godang Airport

#### Morang Village

The next potential village for agrotourism development is Morang Village. The assessment of potential objects and tourist attractions showed that this village has high scores on the criteria of natural beauty, accessibility, travel time from the sub-district capital, distance from main roads, supporting facilities, and types of tourist activities. Morang village is the largest shallot-producing village in Padang Lawas Utara District. Morang's shallots become a tourist attraction in Batang Onang Sub-district. The results of the identification of potential objects and tourist attractions are supported by data from the Ministry of Tourism and Creative Economy of the Republic of Indonesia that this village is a tourism village included in the Tourism Village Network (JADESTA). Besides, the natural beauty in this village is in the form of beautiful views of hills and rice fields. This village can be passed by large to small vehicles as most of the roads in this village are wide. Then, it is also close to the main road so that it provides easier access for tourists. Tourism activities that can be developed in this village are in the form of tracking and cultural tourism. Meanwhile, agrotourism activities that can be developed are in the form of gardening, agroindustry, and animal husbandry.

Gyawali et al. (2022) noted that Horti-tourism is one of the newest forms of agrotourism. Horti-tourism can be a sustainable approach to strengthening farmers economies after the Covid-19 pandemic at an exponential rate. It avoids the problem of complete crop failure, solves a market problem, and promotes rural development. Hortitourism combines two commercial enterprises, horticulture, and tourism in a single field or location. The most important benefit of it is that it provides a dual advantage of tourism and horticulture to the farmers. In this regard, hortitourism can be an effective and sustainable approach to these sectors, ultimately increasing farmers income at an exponential rate. Sustainable economic growth can be achieved by the adoption of amalgamation between these two sectors. Therefore, Morang's shallots are potential for agrotourism development and become one of the tourism products that must be introduced for tourists.

### Padang Garugur Village

Padang Garugur village has many potential objects similar to other locations such as crops, horticulture, plantation, and livestock so it does not have a unique and special attraction. This village has a low potential for agrotourism development. However, it has a historical/archeological tourist attraction, that is the Tomb of Sutan Nasinok Harahap. This tomb is an ancient tomb commonly called "Balai Sutan Nasinok Harahap". This tomb is composed of stone with a flat shape that surrounds the edge of the tomb. There are several stones or inscriptions written using Batak script. This object is an opportunity for Batang Onang Subdistrict to develop agrotourism in this village. A study by Ross and Saxena (2019) showed how innovative meaningmaking opportunities transform archaeological heritage into a valuable creative tourism resource that can be used to enhance the market appeal of local products and resources through theming and creative storytelling. Overall, the archaeological heritage can serve as an effective means of creating meaningful interpretive experiences at cultural tourism destinations. Korenlawrence et al. (2020) noted heritage tourism at archaeological sites is a significant and growing sector of the tourism industry worldwide. The growing awareness of the significant economic benefits of tourism and the fact that tourism stimulates the transformation of archaeological locations into heritage sites to require consideration about managing these sites in the best way to ensure their preservation in the long term.

#### Simardona Village

Simardona village has many potential objects similar to other locations so this village has a low potential for agrotourism development. This village has a natural tourist attraction, that is Tasik Lake (Figure 6). This lake becomes a tourist attraction that attracts visitors to visit the Barumun Wildlife Sanctuary area, but the road access to this village is poor. This village can only be passed by medium to small vehicles. During field observations, the researcher saw many wooden stilt houses of the native residents in this village. Besides, there are some *Bagas Godang* or places for discussing customary regulations for the Mandailing Tribe in this village. This can be developed as a tourist attraction for agrotourism.



Figure 6. Tasik Lake

#### Batu Nanggar Village

Batu Nanggar Village is widely known by people outside the Batang Onang Sub-district because it has educational tourism objects, that is Barumun Wildlife Sanctuary (SMB). This sanctuary consists of lowland forest and highland forest with flat topography, and hilly to mountainous areas. The sanctuary is located between Batu Nanggar Village and Simardona Village. Some of the hills in this area are meadows that form native vegetation cover growing on a mixture of rock, limestone, and clay (Hidayat et al., 2017). The only tree growing in the meadow is the Balaka plant (Phyllanthus emblica) (Figure 7). The Balakka plant is a typical plant of the Angkola Tribe that grows wild in Batang Onang Sub-district, and this plant has been noticed by business actors in this sub-district. Previously, this plant was utilized, especially its bark as a mixture of traditional spices known as holat as a typical food of the Angkola Tribe (Figure 7), but now this plant has been widely used for some culinary delights such as fruit juice, syrup, dodol, and chili chips. Batu Nanggar village also has beautiful meadows and hill views. Although the assessment score is not high, this village has opportunities to support the development of agrotourism in Batang Onang Sub-district due to its well-known object.

Based on the results, villages with high scores will be proposed for agrotourism development, while those with low scores will be proposed as supporting agrotourism as some villages have well-known tourist objects. Tourist attractions play an important role in attracting visitors and generating income so that they become an irreplaceable part of the tourism industry (Cao *et al.*, 2016; Kendran *et al.*, 2021). Available rural resources can be utilized to attract tourists within a certain period and under certain conditions. It means tourist attraction requires renewal and has their unique value. The natural resources, culture, and potential of Batang Onang Sub-district need to be preserved so that local communities can benefit from the development of agrotourism in this subdistrict.

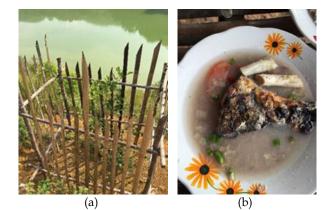


Figure 7. Special Plant and Typical Food: (a) Balaka Plant; (b) Holat

## CONCLUSION

Based on the results of the analysis and discussion, Batang Onang Sub-district is dominated by agriculture and tourism. The results showed that three villages had a high potential classification or 50% and three villages had a low potential for agrotourism development in this sub-district. This study recommends that villages with high scores will be proposed for agrotourism development while those with low scores will be proposed for supporting agrotourism development in Batang Onang Sub-district. Natural beauty, distance and travel time, supporting facilities, types of tourism activities, and accessibility are attractiveness criteria that have high scores, so these criteria can be recommended for agrotourism planning in Batang Onang sub-district. Two villages have been registered in tourist village data on the Ministry of Tourism and Creative Economy, so that is has the opportunity for farmers and the community to integrate agricultural and tourism activities in this sub-district.

Efforts are needed from the Tourism Office of North Padang Lawas Regency to explore further related to the potential of agro-tourism in Batang Onang District. Furthermore, there is a need for guidance and training for the community related to technological advances in agricultural cultivation and agro-tourism, then utilizing natural tourism objects, historical/archeological tourism, and educational tours for the development of agrotourism in Batang Onang Sub-district by involving farmers, communities, and tourism area managers.

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