

## Research Article

# Sustainable Tourism as a Strategic Rural Development: A Case Study in Indonesia

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Recently, efforts to promote equity development and reduce the rural-urban gap have been made, such as the development of optimizing rural tourism to increase job opportunities, therefore improving overall rural economic conditions. Agritourism presents the best chance for rural areas to sustainably develop as it would fulfill environmental, economic, and social wellbeing when properly implemented. This research aimed to develop rural tourism that utilizes local culture and resources while prioritizing sustainable development in Pujon Kidul, Malang Regency, Indonesia. Qualitative descriptive methods were adopted for this study and included land suitability analysis with Visual Absorption Capability (VAC), community attitude analysis with Irridex, linkage system and integrated system. Proper rural tourism management that considers environmental, social, and economic aspects may prevent the exploitation of available resources and thus promote sustainable development in a rural context.

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## 1. Introduction

Most of agricultural areas are mainly located in rural settings, as it usually requires large amount of land for cultivation practices. Their dependency and relation to agriculture means that they are often left vulnerable to weathers and natural disasters, such as droughts. This, along with how usually rural areas are underdeveloped compared to cities, the lack of facilities, economic opportunities and infrastructure would often tempt its residents, especially younger ones to migrate toward cities where there's plenty more economic incentives along with better facilities and infrastructures [1-3]. This leads to troubling rise in urbanization while leaving older populations in the rural areas, which also leads to lack of manpower in rural areas. Considering how crucial agriculturally inclined rural area were to the food supply chain, this has to be remedied.

One of the ways to do so is inciting development in these remote areas is by developing its tourism potential, also defined as rural tourism; despite being defined

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differently in each region of the world [4], it is most often associated with outdoor recreation, agriculture, rural culture, or sightseeing and fishing [5]. It is significant due to its distinctive nature for urban dwellers which are its low population density and geographical location [6]. Rural tourism provides a chance to incentivize people to stay while also fixing up facilities and infrastructure, as it is often done to regenerate socio-economic development and revitalize declining rural areas [7,8].

Agriculture itself can be developed into agritourism, evidenced by apple picking tour in Batu, Indonesia. From ages past, rural tourism often used to generate interest and socio-economic development and/or revitalize rural areas, opening its door to curious tourists who would seek thrill and authentic rural experiences away from their visits, away from urban settings [7]. One of the most sustainable form of rural tourism is agritourism for it seeks to increase survivability and income, while also exploring small farmers' and rural communities' economic potential. In practice, agritourism can be grouped into ecotourism considering it is a form of tourism that seeks to educate and entertain without polluting or damaging nature while enjoying its wonder and beauty [9]. Agritourism could be seen as innovative strategies for farms in order to gain economic and non-economic benefits for the farmers and communities involved in it, by integrating recreational and leisure activities for tourists. It has significant emphasis on organic, natural bio aspects in any part involving human activities, health and environments, strongly relating to sustainability [10].

Indonesian tourism industry, for its many wonders and beauty is of significant importance as it encompasses wide range of contribution and values socio-politically, economically, culturally and regionally [9]. Though beneficial, one must be cautious in developing the rural tourism so it doesn't end up overtaking their main function as agricultural settlement first and foremost, or worse, depleting its resources. For better or worse, tourism would impact the settlement and local communities it resides in as it uniquely effects environment and economic growth of its inhabitant [3]. On one hand, tourism would bring tangible benefits such as opening up job opportunities, improving personal incomes, increasing tax revenues and standard of living in said areas [11-13]. Due to the nature of it being tourism destination, interactions between differing cultural backgrounds and behavior can also occur, and facilities would be improved upon to accommodate. However, there is also many risks involved in tourism development such as destruction of natural habitat, direct and indirect pollution whether from manufacture for tourism items or from the tourists themselves, flights, transports, overt development, et cetera [3,14,15].

Understanding the psychology of the farmers and community is important in order to maintain the sustainability of both agriculture and related agritourism destinations.

Agritourism would not only be able to incite societal change in value, norms, and behavior for the farmers and society welfare, but also able to erode the stigma of farmers being associated with the poor, improving their status [16,17]. Tourism is very much inseparable from their economic, social and cultural fabric of the community it resides in within rural context; often proven crucial in providing alternative income opportunities for residing households [17,18]. During the last decade agritourism is often prioritized in local development policies, for its abilities to support new direction going forward in sustainable rural development with specific effects on agricultural , environment, and economic growth [10]. There are examples of initially suffering villages that would later become independent through rural tourism development, like Ponggok village that now sees its residents with better welfare [15].

Pujon Kidul, located in Malang regency is one of rural areas that successfully utilize their agricultural and natural allure as subject of rural tourism. However, there is a need to keep its development in check, steering them toward agritourism in order to keep them on more sustainable and to prevent negative externalities such as traffic jam, and exceed usage of rural carrying capacity. It is also imperative to take note on how the tourism sector affects Pujon Kidul as rural settlement, comparing the situation before and after tourism manifested. When successful, Pujon Kidul may also serve as a reference for other rural tourism. Aside from practical benefits mentioned, the result obtained from this research may serve as a bridge between academic literature and practical application of rural tourism development.

In developing sustainable tourism concept, it is necessary to study the land capacity for agriculture and tourism, as well as its potential for tourism development. Furthermore, involvement of local community would optimize tourism development in the area. Finally, tourist attraction is established by developing linkage system concept between tourism objects, all of which have to be packaged in sustainable village development context. As such, this study aims to enact village development strategy based in sustainable tourism.

## 2. Theoretical Background

### 2.1. Shifts toward alternative tourism

Given the current events, there is a heavier shift in demand for sustainable and/or alternative tourism. That by itself wasn't exactly new, mass tourism is the more famous and preferable method of tourism for its lower cost and standard services. More and more tourists shift toward experience-based alternative tourism that emphasizes closer

to nature, culture, history and even religion [19]. This shift in tourism trend is also related to global agenda of Sustainable Development Goals (SDGs), proven by world organizations such as Asia-Pacific Economic Cooperation (APEC) insistence on sustainable tourism and increased emphasis on community involvement as primary stakeholder in tourism, which can be seen from implementation of Community-Based Tourism (CBT) concept by ASEAN Secretariat [20].

## 2.2. Rural tourism development concept

According to Nuryanti (Ministry of Tourism) as quoted by Ira and Muhamad [21], rural tourism is a tourist destination where tourist attractions, amenities, accommodations, and accessibilities is packaged within local communities' living structure, following their tradition and mannerism. This format, considered as rural tourist attraction, aims to increase tourist interest and staying period as they introduce the village's culture and way of life and experiencing their activities. Rural tourism development, by its very nature would require local communities' participation for it would utilize local resources and culture while staying environmentally friendly while also bringing them social, economic and cultural benefit, thus making it community-based tourism. Though the survival and sustainability of each rural tourism would depend heavily on the human capital and how well they could manage it and integrating innovation, not dependent solely on its attraction value, for rural tourism that doesn't manage them properly and offers boring attraction would then be left behind [22-24]. By the end of the day, the potential of rural tourism development would be highly dependent on the innate potential of the rural community that inhabit it themselves. Hopefully, through rural tourism development, there is a chance for various community-based economic sector to grow such as arts and crafts, goods and services, etc [25].

## 2.3. Sustainability in micro and macro context

Sustainability is defined as follows: the ability to sustain oneself for an indefinite period without depleting resources, or damaging the environment; methods of harvesting and/or utilizing resources so that they stay preserved and not permanently damaged [26]. United Nations World Commission on Environment and Development (WCED) posits that sustainability in development context means a development that meets the needs of the present without compromising the ability of future generations to meet their own needs [27-29]. This goes hand in hand with the textbook definition mentioned above, to not deplete nor damage the environment in order to move forward

sustainably. It is widely understood that there's three pillars to sustainable development, namely economic, social, and environmental. This means that in macro context, the integration of healthy environment, social equity and economic stability is integral in keeping sustainable development going, as they are intrinsically connected with one another. Sustainable practices operate under the assumption that resources aren't indefinite, thus encourage conservative and wise practices of resource usage that took into account consequences of overt or under usage of resources, along with keeping up the social equity and survivability of the environments. In short, it is about keeping the world habitable for current occupant, and keep it as such or hopefully better for future generations. Within micro context, i.e village sustainability, while taking what talked above into account would mildly vary from village to village, though the idea would be largely synonymous: for the village to survive socially, economically and environmentally, thriving if possible. Careless onslaught of overt modernization and cultural infestation may lead to a loss of culture, traditional and environmentally sustainable practices rural areas have for ages [30]; as such, being mindful to preserve them in tandem to any developmental advancement is crucial in order to ensure societal and environmental sustainability of the area.

Economically, there are steps that Indonesian villages take in order to ensure the economic sustainability of the village, such as establishing BUMDes (*Badan Usaha Milik Desa*; village owned enterprises) in order to help with the village community economical endeavor, like facilitating funds for small business startups, creating supplementary businesses that supports local businesses instead of taking over, and prevents acts that would lead to bankruptcy, optimizing assets and economical potential of the village [31].

#### **2.4. Sustainable rural tourism and community involvement**

Sustainable rural tourism is developed to address the negative implications of rural tourism development. Sustainable rural tourism is defined as a tourism development concept that satisfies visitors and provides economic benefits to local communities, while taking into careful consideration for the preservation and sustainability of the environment both short and long term. Sustainable rural tourism is not easy; local people and visitors tend to get careless and ultimately end up overexploiting natural resources in their practices. Due to community disobedience and predominance of economic reasons, they pay little attention to environmental aspects in practice [32].

Development of rural tourism is largely inseparable from the community involvement, for its development would directly impact their settlement and the surrounding environment. The communities' direct involvement in its development is crucial in order to sustainably move forward with the development and minimize the negative effect that would occur, especially on the environment and ecosystem of the rural area. For this purpose, most tourist in rural area would employ communities' representative who would actively participate in its development, called *Pokdarwis*, short for *Kelompok Sadar Wisata* (tourism-aware group). They hold important role as stakeholder in the rural tourism development, while also keeping the development moving forward while taking care as to not let it overtake the environment and settlement, reducing its negative impact. Their involvement is also important in order to raise tourism awareness among the community. There is seven phases to rural tourism development that they need to check: exploration, involvement, development, consolidation, stagnation, degradation, and improvement [21]. As mentioned previously, ASEAN Secretariat and APEC stress the importance of the local community involvement in rural tourism, so that the local community doesn't end up being mere spectator in their own ancestral land [20,33]. Pujon Kidul is actually one of the rural area that successfully turn their area around into rural tourism. This paper simply aims to steer the development into the more sustainable side as to preserve it in the long term.

### 3. Method

Pujon Kidul is a village that possesses a panorama of natural beauty with the main activity being agriculture, then develops into a rural tourism that carries the theme of a cafe in the middle of a rice field, then becomes a rice field café, which continues to develop tourist attractions with a different character, namely Nirvana Hill. Other tourist attractions includes creation of cultural village by making one hamlet a cultural tourism destination. The development of tourism villages has implications to increase economic value and the rapid development of tourism ecosystems in rural areas. This study is utilizing descriptive qualitative approach in order to obtain the condition overview of Pujon Kidul rural tourism. Visual Absorption Capability (VAC) approach is also used in order to gain data on land suitability analysis, also Irrindex for community attitude analysis and linkage system.

### 3.1. Land carrying capacity analysis through VAC approach

Done in order to support physical sustainability, stadia, and change in spatial characteristic. This means that increase in activities doesn't always result in degradation of spatial quality. Visual absorption capability (VAC) is defined as the ability of a landscape to visually absorb change without losing its inherent visual characteristics, maintaining its visual integrity. The VAC of a particular landscape is reflected by the diversity of landforms, zone of view, diversity and patterns of its vegetation and its filtering ability, color contrast in the soil, soil stability, soil erodibility, drainage patterns, slope steepness, topography, and soil characteristics [34,35]. Selection of the determining factors in the following VAC analysis is based on deliberation adjusted to the characteristic of the research site. Flexible VAC factors allow researchers to select efficiently and effectively applied factors. The identified factors are topography, zone of view and vegetation. Next, locations in research area are selected based on Pujon Kidul tourist attraction characteristics, divided into three types of attractions with differing locations. Therefore, the land assessments are also divided into 3 zones, namely Sawah Café zone, Nirwana Hill zone, and Cultural *Kampung*.

Topographic conditions assessments were analyzed using topographic Malang Regencies' map interpretation technique which was adjusted according to the research location by using ArcGis. Topographic parameters were divided into three conditions: Sloping (0-9%) with a value of 3, Medium (9-27%) with a value of 2, and Steep with a value of 1 (27-46%). Vegetation conditions assessment was analyzed by processing primary data obtained from primary surveys. Parameters for vegetations are divided into three groups: heterogeneous vegetations, production forest, and wilderness. Wilderness is valued at 3, homogeneous gardens and perennials is valued at 2, grasslands, shrubs, barren land, and agricultural land is valued at 1.

The viewing zone is assessed with three parameters: viewing zones with potentials for open view natural beauty or limited but attractive view is given 3 values. 2 values is when limited viewing zones have potentials for natural beauty, open viewing zones lacks natural view but is interesting. 1 value is lacking potential for natural beauty, while limited viewing zones is closed off and/or less attractive.

VAC total is calculated using the following formula, then it is classified in order to obtain the value of each category of land capability from low value to high value, and classifying land classes based on VAC values distribution:

$$VAC\ Total = T (V + ZP) \quad (1)$$

Description:

T = Topography

V = Vegetation

VZ = Viewing Zone

$$K = 1 + 3,3 \cdot \text{Log } n \quad (2)$$

Description:

K = Land Class Total

n = Observed Plot Overall Total

VAC value interval from each land class

$$\text{Interval} : \frac{VAC \text{ Maximum Value} - VAC \text{ Minimum Value}}{Land \text{ Class Total}} \quad (3)$$

### 3.2. Irridex analysis

Assessment toward the role of host attitude in Pujon Kidul is done by analyzing the data gained through Irridex model to measure their change in attitude toward tourists and tourism development throughout its cycle [36](Portolan, 2015). Irridex analysis is used to analyze community attitude of Pujon Kidul by using criterion set at the four stages of attitudes present in Irridex model. Data collection is commenced through giving a set of questions in the form of a questionnaire to approximately 30 respondents with a proportional sampling technique, which then is scored through measurement scale. In this case, rating scale is used.

From there, the rural tourism development concept is constructed by identifying characteristics of tourism objects and their attractions, potentials development of tourism and also development possibilities, while also inputting stakeholder opinion on the matter. Tourism activities at the destinations object in the context of the tourists are needed, such as making preparations to limit the interaction between the community and the tourism, ensuring completion of health protocols and management of tourist visits.

### 3.3. Linkage system analysis

Tourism routes are planned by optimizing the minimum distance and minimum time visit in each tourism location, and also by avoiding clustering in tourism destination



after mapping each tourism locations. Integrated planning concept is also utilized in order to steer Pujon Kidul to move forward to be more sustainable, focusing more on agritourism while also considering economic advantage. Data is gathered by field observation, and getting printer data related to every tourism object in Pujon Kidul rural tourism. Next, every tourism object is grouped with clustering system and shortest travel route in order to identify linkages between objects.

## 4. Results and Discussion

Pujon Kidul was developed into a rural tourism in 2011. It was started by members of the youth organization along with Pujon Kidul chief, who at the time acted as the initiator for rural tourism development. The chief started to introduce tourism activities by forming *PokDarWis* (*Kelompok Sadar Wisata*; tourism-awareness group) under the name Capung Alas. Local activities are introduced as tourist interests, such as farming activities, grass harvesting, cow milking, and more. There would also be a variety of events to enjoy such as Qur'an recitation, traditional music, offroad activities, leisure walks and various other events that aims to bringing visitors in, as well as assessing potentials for tourism that can be developed in Pujon Kidul. Phases of rural tourism development in Pujon Kidul is supported by *BUMDes* (*Badan Usaha Milik Desa*; village owned enterprises). Sawah Café is located smack in the middle of rice field, carrying the theme of nature café that is surrounded by natural scenery and agricultural activities as its main draw. This turns Sawah Cafe into the most popular tourist destination in Pujon Kidul. Other tourist destinations were also developed over time. As a whole, there are three major rural tourist attractions in Pujon Kidul, the other two being Nirwana Hill and cultural *Kampung Tangguh*.

### 4.1. VAC data

Pujon Kidul rural tourism land use is dominated by agricultural land, which consist of 84,742 hectares of paddy fields, 240 hectares of plantation area, and 87,102 hectares of paddy fields. Housing and yards cover approximately 45,807 hectares of area, while road area takes around 8 hectares, 227 hectares of protected forest area, and 578 hectares of productive forest area with moderate to steep topography or slopes.

The landscape of Pujon Kidul is dominated by agricultural land in the form of rice fields, fruit orchards and rural mountains. Vegetation distribution is mostly dominated by agricultural land, which made it visually attractive. Sawah Café vegetation tend to be less dense due to the variety of agricultural crops, as the variety of plants present

will have a different crown shape and spacing [37]. Sawah Café and Nirwana Hill area is mainly filled with man-made tourist attractions and settlements. Same with cultural *Kampung Tangguh*, which is mainly dominated by residential settlements.

Sawah Café are the first and most popular destination in Pujon Kidul. It has spectacular natural view with traditional feel, located smack in the middle of paddy field. Visitors are treated with authentic rural atmosphere and experience. In Sawah Café, tourists can take photos in all available photo spots, also spend a night in the available guest house. Sawah Café Restaurant provides authentic Indonesian meal on affordable price, while the available guest house located right on Sawah Café is adorned with mountains and paddy field view. They also serve snacks, drinks, and various fruit juice sourced from local farms.

The Roudh 78 is lauded as the flagship attraction of Sawah Café. Being right next to Sawah Café doesn't deter tourists to visit; if anything, activities available for kids gives plus point for it. Visitors could enjoy food at the available restaurant while viewing other visitors take part in the available activities such as hand boat, rolling ball, fish pond, swan boat, and row boats. Photo spots are also available.

Lumintu café and restaurant serves traditional Indonesian food, offering visitors the experience of enjoying local cuisine with natural and rural atmosphere. Photo spots are also available. This place is highly recommended for tourists that travel in groups, such as families as they offer large group packages.

Other attractions include Cultural Park which display various cultural attraction with atmospheric rural view, Playgrounds with various rides within for kids, which are non-operational during the pandemic, Adventure Center which provides rent for ATV and Trails, also provide packages for tourists of all ages who want to go on short offroad adventures with interesting route and trail variations and homestay. Mujen café is available for visitors to rest and watch other people riding trails.

Nirwana Hill are one of Pujon Kidul destination, carrying out the theme of hilltop cafe. It belongs to Pujon Kidul community, and as such remains as part of tourist package and is promoted by BUMDes. Food and drink booths are readily available, along with traditional gazebo, park, photo spots, and toilet and family camp.

Since 2020, Tulungrejo hamlet settlements is initiated to become Resilient Cultural Kampung, which are one of tourist destination, using rural culture as its main draw. Thick cultural atmosphere can be seen from the residential building, designed with their culture in mind. Tourists could enjoy cultural activities such as Pawon Ndeso, *Wayang* (shadow puppet show), Gamelan and dance shows, making their own Malangan mask, playing traditional games (*dolan-dolanan*), and others.

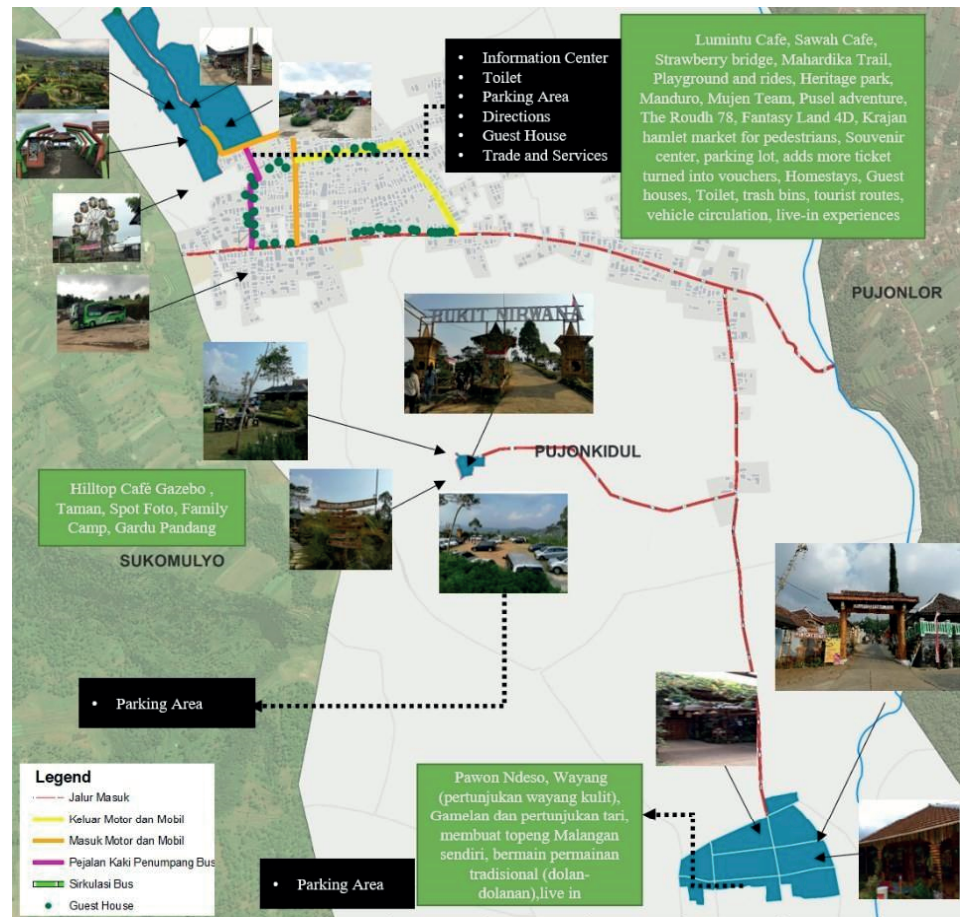


Figure 1: Tourism object distribution in Pujon Kidul.

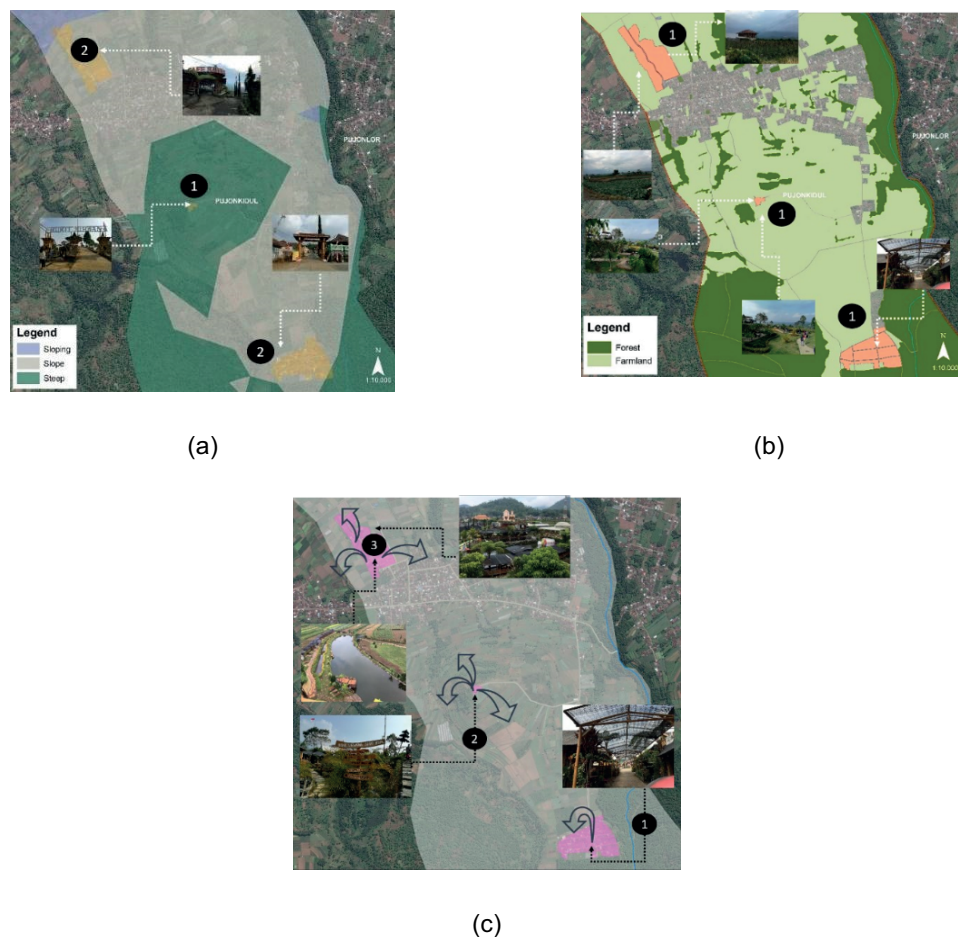
#### 4.2. Land suitability analysis of Pujon Kidul Rural tourism using VAC method

Topographic scoring at three points of tourism attractions in Pujon Kidul rural tourism shows different topographic conditions at each tourism attractions, where the tourism attractions of Sawah café and Cultural *kampung* have moderate slope conditions (9-27%) with a score of 2 and Nirwana hill has steep conditions (9-27%) with a score of 1. Topographic conditions can be seen in **Figure 2 and Table 1**.

Vegetation conditions at the three points of attraction of Pujon Kidul rural tourism are each worth 1, with tendency of dense vegetation due to the diverse types of agricultural plants. The land is dominated by artificial tourist attractions and settlements, which is also the case for settlement-dominated cultural *Kampung Tangguh*. Nirwana hill vegetation is dominated by artificial tourism attractions and agricultural land. Data for vegetation conditions can be seen in **Figure 2 and Table 1**.

Each of the three points of tourism attraction viewing zone has potential for natural beauty, albeit with different scoring. Sawah café is scoring at 3 with open viewing

zones has both natural and artificial view; rice fields, artificial ponds and views of the mountains, one of which is Mount Dorowati. Nirwana Hill is scoring at 2 with abundance of natural potential, beautiful view from 1,200 meters above sea level altitude. Nirwana Hill has an open and complex viewing zone. The view of Nirwana Hill in the form of a stretch of agricultural land seen from the height of the hill, village landscape, mountains and forests make the viewing substation as one of the segments of tourism attractions offered. Cultural *kampung* is scoring at 1 as it does not have the potential for natural beauty to be offered with a limited viewing zone. However, the viewing zone potential is instead obtained from the beauty of the settlement that is designed with the concept of cultural settlement. The overall viewing zone conditions can be seen in **Figure 2** and **Table 1**.



**Figure 2:** (a) Topographical condition, (b) Vegetation condition and (c) Viewing zone condition.

Furthermore, the scoring results of the three observation points with the tabulated VAC factor are calculated using the formula in the VAC method. The calculation obtained a total VAC of 14, then is further classified in order to obtain the value of each category of land ability from low value to high value. With the acquisition of the result of the number of land classes 4.76, and with the VAC value interval of each land class is 1.05;

TABLE 1: Pujon Kidul rural tourism condition.

VAC Factor	Sawah Café	Nirwana Hill	Cultural Kampung
Topography	2	1	2
Vegetation	1	1	1
Viewing zone	3	2	1
Total	8	3	4

then the result of the distribution of VAC values results in classifying land classes that can be described in **Table 2**:

TABLE 2: Class distribution of Pujon Kidul rural tourism lands.

Class I = 7-8	Class II = 5-6	Class III = 3-4
Land class I topographic appearance is in sloping conditions (0-9%), with the dominant vegetation type being expansive agricultural fields with open viewing zone, surrounded by beautiful natural scenery. Land class I land capability is considered suitable for development.	Land class II topographic appearance is in moderately sloping conditions (9-27%), with the dominant vegetation type being expansive agricultural fields with both open and limited viewing zones. Settlements also has open and limited viewing zones. The open viewing zones have potential for its open natural beauty, while the limited zones while lacking such potential, is an interesting tourist object on its own. Observational point of land class II deems the land capability to be suitable enough for development.	Land class III topographic appearance is in steep condition (27-46%), with the dominant vegetation type being expansive agricultural field, plantations, and even forests with open viewing zones rife with beautiful natural scenery. Due to its naturally steep topography, Nirwana the tourist attraction land capacity is considered not suitable enough for development.
Uncategorized	Sawah Café and Cultural Kampung	Nirwana Hill
SUITABLE	MODERATELY SUITABLE	UNSUITABLE

### 4.3. Community attitude

Local communities have an important role in tourism development and their involvement in sustainable tourism [24]. The participation of the community in tourism development is closely related to its access to knowledge, and its ability to control and manage local tourism resources. Tourism activities in rural areas also have implications for people's



lives as well as their attitudes. Ideally, all forms of sustainable tourism should require an agreement that aims to manage tourism in such a way that it produces prosperity for the entire population through redistribution of profits through community projects and creates tourism norms and rules, which protects the natural and cultural [25].

One of the analyzes that can be used to examine people's attitudes is to use the Irridex analysis, the first four irridex phases are the euphoria phase where local people support tourism development and they are ready to live their daily life with tourists. Generally, people expect and judge to benefit from new jobs. obtained, an increase in income and an increase in the economic value of the property they are tourism. This stage occurs when local economic conditions stagnate and tourism is seen as a sector that offers economic growth opportunities, or there are many impacts due to a decrease in local economic activity, so that it is seen as being able to overcome this problem. Support at this stage is more focused on the economic side and does not take into account the socio-cultural impact, the second phase is apathy where people begin to grow apathy about the existence of tourism, the third phase is annoyance, the point of saturation is almost reached and the community has begun to be disturbed by the presence of tourists, and the last phase of antagonism, the community has openly shown an attitude of displeasure, seeing tourists as a source of problems [38,39].

The attitude of the community in general is heterogeneous, but based on the results of the analysis using the irridex model, the whole is in a euphoric phase, it has a relation with the benefit of the economic, which the community still supports tourism activities, however. Not a few people who are not directly involved have an apathetic attitude towards tourism developments in the Pujon Kidul. Though gradually with the increase in tourist visits and more economic benefit of tourism activities, almost all the people step by step became involved in tourism activities.

#### 4.4. Linkage system

Spatial autocorrelation describes how spatial aspects can affect the performance of regional development so that in the development of spatial factors and inter-regional linkages are elements that have an important role [40]. Linkage is theoretically explained as the relationship of one place to another [41]. The linkage system from the rural tourism perspective with the research location in the Pujon Kidul illustrates the linkage system between tourist objects.

Pujon Kidul rural tourism cluster is divided into three core tourist attractions, including a core one in form of Sawah café with a tourist object domain consisting of 9 tourism

objects: Sawah Café, Roudh 78 shopping center, Lumintu, Manduro Mujen Cafe, Cultural Park, Mahardika and Strawberry bridge.

As for the matter of route, Sawah Café turns into the very center core attraction. The attractions with the shortest distance from Sawah Café are the playground, which is supported by Mujen and Manduro. Next is the cultural park which is supported by Mahardika and Strawberry bridge. After Sawah Café, there is Roudh 78 as the second core, with the shortest distance being a playground, also supported by of Mujen and Manduro. The third core is the shopping center and Lumintu, with cultural park within shorted distance that is supported by Mahardika and Strawberry bridge. Third core is Nirwana Hill, which consists of a café and eatery as its center, complete with gazebo and photo spots in its garden. Cultural *Kampung Tangguh* has *Kampung Pawon Ndeso* for its center, where they exhibit *wayang* and *gamelan shows*, also *dolan-dolanan*. Pujon Kidul rural tourism total linkage with Sawah Café as it's center, supported by cultural *Kampung Tangguh* and Nirwana Hill is interconnected with the road as their link.

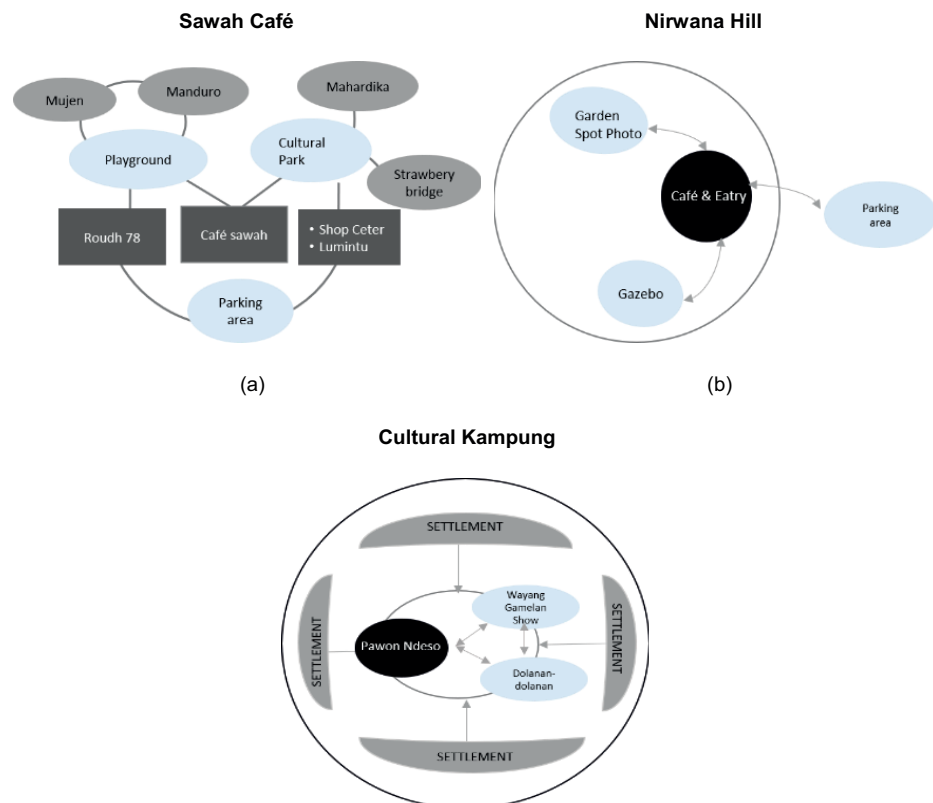
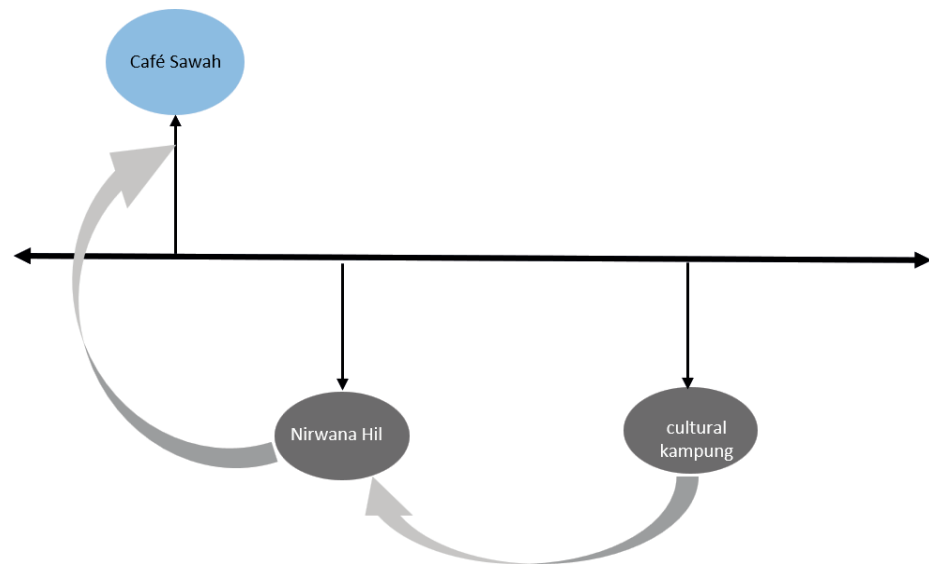


Figure 3: Internal linkage of Pujon Kidul rural tourism.



**Figure 4:** Total linkage Pujon Kidul rural tourism.

## 5. Conclusion

Rural area with agricultural potentials can be developed into rural tourism that veers toward agritourism while maintaining natural environment sustainability, including their natural beauty, while also empowering communities as its social capital and creating various tourist attractions that would generate economic value for rural communities.

In this case, the physical and environmental sustainability in Pujon Kidul rural tourism is supported by its environments supportive capabilities in its tourism development, especially natural (ecotourism) and artificial tourism. As for social sustainability, it is acquired through the joint business group formations in managing tourism, which was initially started in a euphoric phase with the economic benefits it brings. Even though some people were passive, with the development of tourism and the increasing number of tourists, community participation is gradually increasing and got better overtime. Their economic sustainability is realized by developing existing agricultural activities into tourism, and increasing economic activity in turn.

The community also realizes that the tourism development and preservation of natural environment is a symbiotically positive relationship that increases attraction, its maintenance making economic development sustainable in the long term, while having the safety net of it being a productive agricultural land. Pujon Kidul rural tourism has three zones for tourists: Sawah Café, Nirwana Hill, and Cultural Kampung Tangguh where all three differs in its characters but can be packaged into one united rural tourism destination. Rural area with beautiful natural scenery and are managed along with the



community can be developed into rural tourism in supporting sustainable rural area, as long as the environmental factor is diligently maintained.

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