

The Role of Natural Capital in Surviving Periods of Crisis: A Case Study of the Nglanggeran Village Community

Lasti Nur Satiani, Titi Susilowati Prabawa*, Aldi Lasso

Development Studies of Interdisciplinary Faculty, Satya Wacana Christian University
Jl. Diponegoro No. 5260, Salatiga, Indonesia 50711

Received January 18, 2022/Accepted October 28, 2022

Abstract

The sustainability of tourism-based livelihoods can be threatened when a crisis occurs. Thus, people's resilience during crisis is a significant factor for people to maintain livelihoods as it is a contributing mechanism for people to escape from crisis. This research examines how the Nglanggeran community sustains their livelihoods by utilizing their natural resources as a strategy to survive Covid-19 pandemic between 2020 to 2021. This study uses an ethnographic approach. The data collection process was carried out through participant observation and in-depth interviews with 14 former migrant workers and who now live in Nglanggeran village. The focus of the analysis in this study is the strategy of the Nglanggeran community in maintaining their livelihoods by utilizing their land. The analysis process uses thematic analysis. People who own paddy fields are more likely to survive than those who plant trees for timber on their land. What the Nglanggeran community does is important in maintaining their resilience and as a survival strategy for the local community. Tourism activities do not have to displace traditional livelihood activities on local people's land, rather land use can be optimized to support sustainable livelihoods. While they can optimise land use, this does not increase their quality of life. They have survived but their livelihoods remain vulnerable.

Keywords: tourism, livelihood, resilience, survival strategy, vulnerable

**Correspondence author, email: titisusilowati@gmail.com*

Introduction

Tourism development is often adopted as a development tool to improve a community's economic welfare and the community is expected to benefit from ongoing tourism development. However, when a community is promoted as a tourist destination, it should be acknowledged that this development often produces both positive and negative impacts on the lives of local people. Destination tourism has a very significant impact on the environment, economy, culture and social order in the locations in which it is introduced (Mason, 2008). Despite producing some positive impacts on local communities (Tao & Wall, 2009a), tourism development is acknowledged to have contributed to negative changes in many tourist destinations (Rätz, 2000; Mason, 2008; Nost, 2013; Lasso & Dahles, 2018), in particular in how it impacts on pre-existing local community livelihoods.

Lasso and Dahles (2018) note that one of the impacts of tourism development is the shift from traditional livelihoods to tourism-based livelihoods. This finding reinforces previous findings which show that tourism impacts include reducing the traditional livelihoods of local communities that existed before destination tourist development (Baker, 2009; Su, 2016). Meanwhile, relying on tourism as the only source of livelihoods is very risky because tourism-based livelihoods are very easily affected by crises that occur

outside the tourism environment (Dahles & Prabawa, 2013). This dependence on tourism as a source of livelihoods potentially hampers the sustainability of community livelihoods more generally.

If the purpose of tourism development is to improve a community's economic welfare, then we must pay attention to the ability of local communities to guarantee the sustainability of their livelihoods. Therefore, when we examine destination tourism in the context of sustainable development, the issue of sustainable livelihoods becomes important. Chambers and Conway (1992) state that a livelihood includes the capabilities of the community (not only individuals), the material and social assets owned by the community and all activities undertaken to earn a living. Livelihood assets which are natural, social, financial, physical and human assets are one of the important factors in the sustainability of livelihoods (DFID, 1999). Community access to and use of these assets are important things that impact the capacity to maintain sustainable livelihoods.

Community livelihoods are said to be sustainable when the community is able to cope with and recover from unexpected shocks and pressures that arise. In the face of such shocks and pressures, communities implement livelihood strategies that include a combination of activities and choices that can be utilized to continue their livelihoods (DFID, 1999). Livelihood strategies are influenced by

economic, social, cultural and psychological factors which may improve the quality of life for individuals, families and social groups (Walker et al., 2001). To fulfill their needs in a sustainable manner, local communities may focus on utilizing assets, implementing strategies and optimizing their strengths, where tourism is one option that can be utilized (Tao & Wall, 2009b).

Tourism is recommended as a source of livelihood that complements previously existing livelihoods in order to increase the community's capability to meet their individual and community needs (Tao & Wall, 2009a). That is, tourism can be implemented as a form of livelihood diversification which is one alternative in reducing livelihood vulnerability. Livelihood diversification may also be adopted by the community to maintain and improve their standard of living (Niehof, 2004). One approach to livelihood diversification is to establish a tourism sector business while maintaining previous livelihood strategies.

In areas that develop destination tourism, people may depend on more than one livelihood, that is from tourism and other livelihood sources. Shen et al. (2008) states that people use strategies to maintain their livelihoods, one of which is doing work outside the tourism sector. Tourism should be considered as a diversification strategy, that is, an optional adaptive strategy that helps people adapt to economic conditions in the long term so that livelihoods can be maintained (Shen et al., 2008). As noted earlier, tourism is very vulnerable to changes that occur in its surroundings. Even without a crisis, tourism may be greatly influenced by changes in social, security, political and other conditions. The sustainability of tourism-based livelihoods can be further threatened when a crisis occurs, such as the ongoing Covid-19 pandemic crisis. During the pandemic, a great number of tourism-based livelihoods has been heavily impacted and often forced people to close their businesses (Bakar & Rosbi, 2020; Kour et al., 2020; Skare et al., 2021). This situation may lead to significant impediment to the sustainability of local livelihoods and causes community to become vulnerable.

Vulnerability is something that is experienced when there is a change in situation that threatens the welfare or state of well-being of individuals and communities in the form of ecological, social, and political crisis, as well as long-term and seasonal change (Moser, 1996). Vulnerability is directly related to asset control. The more assets a community or individual have, the less vulnerable they will be. Contextual vulnerability refers to a vulnerable situation that can affect people's livelihoods at any time. Contextual vulnerability is useful in identifying various kind of vulnerabilities that may be experienced and build common awareness about shocks and trends which could greatly affect the sustainability of community livelihoods (DFID, 1999).

Humans and their surrounding environment will suffer losses due to disturbances or stress (Kasperson et al., 2003; Turner et al., 2003). Vulnerabilities can be understood as having two sides, external and internal. External vulnerabilities can be shocks and disturbances. While internal vulnerabilities refer to the ability to respond to and recover from external pressures (Chambers, 2006). In general, society cannot avoid risks caused by both human and

environmental factors (Ellis, 2000). Powerlessness in the face of risk, makes people vulnerable to unexpected things, and can impact on their survival. Thus, people's knowledge on how to manage their assets become one of significant ways to be resilient during crisis.

Resilience is a contributing mechanism to good outcome despite all the difficult experiences caused by stressors. The concept is described as a dynamic process of positive adaptation to overcome stress or adversity (Hjemdal et al., 2006; Rutter, 2006). People who can adapt have more capacity to endure during crisis.

In Nglanggeran Village tourism was built based on the concept of community-based tourism, where the community has the authority to regulate tourism development itself. When destination tourism was developed, the Nglanggeran community still maintained control over their land. The Nglanggeran community utilizes the land as agricultural land planted with rice and vegetable crops, as well as to plant timber for harvest. This paper examines how the Nglanggeran community used their land in responding to the Covid-19 pandemic crisis.

Nglanggeran Village is a tourist village located in Gunung Kidul Regency, Central Java. In the past, the majority of people's livelihoods were drawn from their work as farmers. When they could not make ends meet there were no other job opportunities in the village. Between 1980s-1990s many Nglanggeran people chose to become migrant workers. When tourism began to develop, people began to return to their villages and establish tourism businesses. The emerging business opportunities were homestays and food stalls. Nglanggeran is included in the list of 100 most sustainable tourist destinations in the world, where it meets the requirements of sustainable principles, namely the principles of environmental, social, economic and cultural sustainability. In 2013, when Nglanggeran became one of the popular tourist villages in Indonesia with many tourists visiting there, homestay businesses had a significant impact on the community's economy. Each homestay may have had up to 3 guests per week. The incomes generated for owners of tourism homestay business often exceeded their main income as farmers. However, despite the increasing popularity of the Nglanggeran tourist village and its success in winning various national and international awards, the people of Nglanggeran village faced very difficult times as a result of the Covid-19 pandemic. Tourism is one sector that has been most significantly affected by this pandemic and Nglanggeran people have had to struggle to maintain their livelihoods. Thus, it is important to examine further the capacity of people to sustain their livelihoods during crisis.

The focus of this research is on how the Nglanggeran community have sustained their livelihoods by utilizing their natural capital as a strategy to survive. Sustainability is usually associated with issues of ecological, socio-cultural and economic sustainability for present and future generations (Neto, 2003; Amerta et al., 2018). It is important to understand stakeholder perceptions of facilitating sustainable tourism (Hardy & Beeton, 2009). There are not many articles that discuss sustainability associated with natural capital. There are not many articles that discuss

sustainability associated with natural capital. Does utilizing land assist the Nglanggeran community in securing their livelihood, especially in the face of the Covid-19 crisis?

Methods

The setting Nglanggeran is a village located in Gunung Kidul Municipality in 1999 the local community initiated tourism development, in 2003 this village officially designed as tourist village by tourism office of Gunung Kidul Municipality that applied the concept of community based tourism (CBT) development, where the initiator is a resident of the community itself. Tourism in Nglanggeran began in 1999, then in 2003, Nglanggeran was designated as a tourist village by tourism office of Gunung Kidul Municipality.

The main attraction in Nglanggeran Village is the ancient volcano called *gunung api purba* (GAP), which is located at an altitude of 700 m above sea level. GAP is a popular sunrise spot for tourists. From the top of the GAP, tourists can enjoy the natural beauty and splendor of the Mount *Lima Jari*, which has 2 peaks, namely the west and east peaks. The western peak is a hiking area, which is in great demand by tourists. Unlike the western peak, tourists can reach the eastern peak by motorbike or by using a rented jeep belonging to the residents. At this peak there is a hamlet which is only inhabited by 7 families. Here lies the grave of *Mbah Redjo* the ancestor of Kampung Pitu.

When tourism development began in Nglanggeran Village, tourism activities were limited to climbing GAP. The income obtained by the community was from selling entrance tickets to the GAP area. The earthquake that occurred in 2006 in Yogyakarta Province, resulted in enormous damage to the village and became a trigger for the Nglanggeran community to revive tourism in Nglanggeran Village in order to recover from the crisis caused by the earthquake. Over time, more and more tourists began to visit GAP. The Nglanggeran community began to think about additional activities for tourists, so that tourists would not just pass through Nglanggeran village to visit the GAP.

Faced with an increasing number of tourist visitors, Nglanggeran Village developed another tourist attraction alongside GAP, namely *Embung Nglanggeran* (Nglanggeran Reservoir). *Embung Nglanggeran* is an artificial lake located on a hill, where tourist can enjoy sunset. Its main function is for irrigating dry fields in the dry season and durian and longan orchards that belong to the Destination Management Organization. In addition to the reservoir, Nglanggeran Village has developed the Nglanggeran Fruit Garden where durian and longan are planted, which are the mainstay local fruits of the Nglanggeran community. Another attraction is the *Griya Coklat* which produces processed chocolate products.

While developing their tourist attractions, the community began to offer educational tour packages and live-in homestays. The live-in program in Nglanggeran village required accommodation facilities for tourists. As a result of this tourism development some residents have become homestay operators. The income from their homestay business is sometimes greater than the incomes they obtain from their traditional livelihood as farmers.

Data collection and analysis This study used an ethnographic approach in its qualitative research method to explore and describe a specific social phenomenon. This research applies a constructivist paradigm. Creswell and Miller (2000) argue that constructivism provides us with a pluralistic, interpretative, open, and contextual perspective on reality. The first author directly involved in the construction process, through direct interactions. This study analyzed the process of diversification of local people's livelihoods and the ability of the Nglanggeran community to utilize land to survive and get out of difficult times.

The data collection process in this study was carried out using in-depth interviews with informants. To conduct in-depth interviews, the first author spent time at the setting and made friends with the informants. There are 40 homestay owners in Nglanggeran, and 32 are former migrant workers. For the purpose of this research, the first author was able to make friend and gain trust from 14 homestay business owners who previously worked as migrant workers. The homestay business owners were chosen as this group have knowledge about intended data and they were willing to communicate and cooperate with the researchers (Marshall, 1996). These informants were repeatedly interviewed. Due to the pandemic, the interviews were conducted through face-to-face meet ups and telephone conversations. Informants' consents were obtained for each interview. As most of the homestay businesspeople are also farmers, interviews were conducted on the sidelines of their farming activities, mostly after people's work activity, namely at night while chatting at a coffee shop near the community post. This coffee shop is in a strategic location because it is in the middle of the village and close to the center of tourism activities. In addition, data was collected through direct observation by unobtrusively following informants after obtaining their explicit consent.

The focus of the analysis in this study is on the strategy of the Nglanggeran community in maintaining their livelihoods by utilizing their land. The analysis process uses thematic analysis, because the purpose of this study is to identify, analyze and report themes that emerge from data analysis (Braun & Clarke, 2006). All recordings were transcribed and manually analyzed to generate themes. Subsequently, these themes were grouped in matrices for comparison. Finally, data interpretations were conducted by comparing the findings with literature (Tracy, 2013).

Results and Discussion

Former livelihoods of the Nglanggeran community In the past, Nglanggeran was a dry and barren village. The majority of the Nglanggeran people at that time were poor farmers. In the face of a lack of livelihood options, many people would harvest timbers in the forest and take stones from the GAP area to sell to collectors. Both activities are not environmentally sustainable (Firdaus, 2015). In addition, agricultural land could not be utilized optimally, even though the majority of local people made their livelihoods from farming. The community relied on irrigation from mountain springs, where the water supply is very low. Thus the agricultural land owned by the Nglanggeran community is largely rainfed agricultural land.

In the rainy season people plant rice fields with rice, while in the dry season they can only plant vegetable crops. The rice yields were only used for their own consumption needs, while the vegetable crops were sold through middlemen. Often the farmers were tricked by the middlemen, because they are paid very cheaply for the harvest. For many community members, being able to eat everyday was enough. One informant, Mrs. Eni said, *“In the past, our rice harvest was only enough for us to eat ourselves because there was only a small amount of land. In the dry season, vegetables are planted and usually sold through middlemen very cheaply. It's okay as long as you can eat”*. Mrs. Eni's statement emphasized that the living conditions at that time were very poor. Agricultural harvests which were the source of livelihoods for farmers were not adequate to meet their daily needs.

The majority of farmers have a low level of education, namely elementary and junior high school graduates. They do not have specialized skills, so they can only do side jobs or laboring work in addition to farming. They must have a side job, because if they rely only on farming, they will not be able to meet their daily needs. When they could not rely on incomes from agriculture, the people of Nglanggeran decided to become day talers, including farm laborers, factory workers and construction workers. Ms. Ari said, *“I only graduated from elementary school. In the past, when I came home from school, I had to help my parents in the fields, because my parents' income was only from the fields. I am a farmer's daughter, so I have to help my parents in farming. When I was 14 years old, I started working as a laborer in a factory before becoming a migrant worker when I was 16”*. This statement indicates that low levels of education greatly limits their ability to get better jobs with higher incomes.

Apart from limited natural resources and educational background, other factors including inadequate infrastructure have resulted in this village in the Sewu mountain region being classified as an isolated area. The distance between Nglanggeran Village and the closest government administrative centre is 15 km and there is no means of public transportation to get there. People who want to go to this administrative centre must walk. The people of Nglanggeran are forced to sell their produce through the services of middlemen at very low prices because to transport the produce themselves they have to travel that far.

In such unfavorable conditions, people's livelihoods are very vulnerable. They cannot depend upon agriculture, which is their main source of livelihood. When they try to find a new job by becoming a day laborer, it turns out that this is not a real solution for them, because the wages they receive are low. As Mrs. Eni said, *“if you work in in our home country, if you only work as laborers, our income is not commensurate with the how hard we work. Especially if you live outside the city, the incomes we receive are lower because they say our costs of living are lower”*. Many people who migrate to look for job opportunities outside the village in order to improve their life, so so because there are such limited job opportunities there. Some seek work on other islands outside of Java. They do all these things to secure some form of livelihood, although their efforts to do not guarantee they can meet their daily needs.

Become a migrant worker to change livelihoods Because of these difficult circumstances some Nglanggeran community members decided to become migrant workers. The first migrant worker from Nglanggeran community was Ibu Siyah in 1985. She obtained information about migrant workers from friends from other villages who had previously become migrant workers in the Middle East through an official migration agent. After she left to work in the Middle East, other Nglanggeran members began to follow in her footsteps and became migrant workers. The majority of migrant workers in Nglanggeran Village went to Malaysia and Korea. Most of those who become migrant workers in the Middle East were women. They thought that work as a household assistant was the same as what they usually do at home and they thought it would be easier to adapt. Meanwhile, the migrant workers who chose to go to Korea were mostly men, because they thought that factory workers have a fixed working time compared to household work. According to those who became migrant workers they thought that becoming a migrant worker was one of the best solutions at that time to get out of poverty. Ms. Ari said, *“I became a migrant worker because of economic pressure. If you become a migrant worker, the incomes are higher, compared to working as a laborer here”*. The Nglanggeran people thought that becoming a migrant worker was one way to get a promising wage in order to meet their daily needs.

The Nglanggeran community obtained information about the need for migrant workers from the Ministry of Manpower and advertisements in the print media. Then the Ministry of Manpower directed the prospective migrant workers to authorized agents who manage registration. They register their interest for work in their desired country of destination. The agents provide the necessary training for prospective migrant workers before they depart. The training carried out is tailored to the needs of the migrant workers' destination workplaces. Migrant workers to the Middle East must attend Arabic language training and skills training for domestic assistants for one to two months. Based on many workers' experience, their Arabic language skills develop more when they are at work, because they communicate a lot informally with their employers. Migrant workers going to Korea only need Korean language training if they will work in factories. Meanwhile, migrant workers going to Japan must attend language training for one year in Yogyakarta city in Java. The Japanese language training is for a longer period, because Japanese is quite difficult, unlike English which is more widely understood by many Indonesians. All prospective migrant workers have to pay is IDR3,000,000 for the language training.

Becoming a migrant worker is one way for the Nglanggeran community to maintain their livelihoods, even though the risks they face are not easy. They are separated from their families for a long time. Migrant workers who have completed their employment contracts return to their places of origin. However, for migrant workers who have returned, they tend to then extend their work contracts overseas while they still fulfill the conditions for employment in their respective destination country. Factors that make them unable to rely on being migrant workers for a long time include age, security and other external factors. Because

becoming a migrant worker did not guarantee sustainable livelihoods for this former farming community, tourism was developed in Nglanggeran Village.

All informants had been farmers before they became migrant workers. They maintained their land when they worked abroad. After deciding not to continue their livelihood as migrant workers, these people were still able to reclaim their farmland. As a result, they returned to their previous livelihoods prior to becoming migrant workers, that is as farmers, as well as running a business in the tourism sector, that is as homestay entrepreneurs, as can be seen in Table 1.

Nglanggeran community livelihoods after tourism develops With the development of tourism in Nglanggeran Village, more livelihood opportunities arose due to the increasing number of tourist visits. The live-in homestay program, which became increasingly popular, made more local residents interested in running a homestay business. In the early period of establishing their homestay business, owners only prepared makeshift rooms. Destination management organization (DMO) offered the opportunity to residents who wanted to make their house a homestay. The houses they own are their own and most of the land they occupy is inherited from their parents. Mrs. Eni explained, *“This house belongs to my husband, inherited from his parents. Then it was renovated using some of my earnings as a migrant worker”*.

When building and renovating their houses, the Nglanggeran community uses wood from their own land. In addition, there is grant assistance from the provincial governor for bathroom repairs for homestays. Almost all

homestays receive assistance in the form of water tanks, toilets and showers. Assistance is only provided for the purchase of bathroom equipment, while the installation costs are borne by each homestay owner. They do bathroom installation and maintenance themselves with the help of relatives and neighbors. This assistance is a form of mutual cooperation that remains part of local culture in Nglanggeran Village.

The homestay owners are members of one organisation. The division of homestays into specific zones is based on the location of the homestay. Zone 1 is part of West Nglanggeran, zone 2 is in East Nglanggeran and zone 3 is part of south Nglanggeran. Zone 2 is the zone closest to the centre of tourism activities. Each homestay consists of 23 rooms. The price for each room is IDR150,000 night⁻¹. Eighty percent of this income goes to the homestay owner and the remainder goes to DMO. The homestay owner provides meals for guests twice a day. They do not calculate the profit and loss in opening a homestay business because this business is used as an additional source of income and their main purpose is to provide accommodation facilities to tourists who want to stay in Nglanggeran Village. However, the incomes they obtained were significant, especially during the peak season for tourist visits. The busiest visiting time is during school holidays in June, while the quietest time is during the ramadhan month. During the peak tourist season, each homestay may have homestay visitors between 13 times week⁻¹.

Homestay management is organized through a single entry point, called the DMO. The homestay owners depend on the DMO to allocate guests to their homestay. They cannot directly receive guests without going through the DMO. Tourists who want to stay overnight cannot go directly to their desired homestay, but must make a booking through the DMO. The DMO will then determine which homestay the guests can stay in. The DMO stated that the allocation of guests to different homestays has been carried out fairly. Mr Dedi, one of the DMO administrators and also a homestay owner said that they arrange the allocations of guests to homestays fairly so that there is no jealousy among the homestay owners. At the same time there are still homestay owners who feel they are treated unfairly. Mr. Dedi expressed: *“It is a common occurrence and they complained to us”*.

The physical condition of each homestay is different. The DMO stipulates a condition that homestay entrepreneurs must have empty rooms, bathrooms and a clean environment. The empty room must not be a room that is used on a daily basis by homeowners. This is to ensure that tourist rooms are ready for tourists to use when they book a room. The DMO does not specify certain standards for rooms that can be used as homestays. However, for foreign tourists who may have specific requests such as shower facilities, hot water and air conditioning, only certain homestays will be chosen. So in practice not all homestays will have the same opportunity to host guests. Homestays with more complete facilities will be allocated to specific kinds of tourists more often, especially foreign tourists. One of the homestay owners who has complete homestay facilities is Mr. Agung, the head of the DMO.

As tourism developed in Nglanggeran, the need for facilities increased. One of these facilities is providing a pick-

Table 1 Former and current livelihood of informants

Informants name	Former livelihood		Current livelihood
	Migrant worker	Farmer	Homestay business
Ari	v	v	v
Agung	v	v	v
Dedi	v	v	v
Eni	v	v	v
Victor	v	v	v
Widi	v	v	v
Yuan	v	v	v
Novi	v	v	v
Adi	v	v	v
Eko	v	v	v
Dian	v	v	v
Vika	v	v	v
Dira	v	v	v
Mika	v	v	v

up vehicle to transport tourists from the DMO office Nglanggeran Reservoir. As a new business opportunity, some homestay owners were interested in participating. Three homestay owners bought small pickup trucks to support tourism activities. According to the manager the rental price for each activity is IDR150,000. During the peak season, each pick up owner can rent out his vehicle 23 times week⁻¹. But in off-peak season a rental vehicle may be hired at least 4 times month⁻¹. Pick-up truck owners obtain additional income from tourism which is seen as an additional income source. However this income often exceeds their farming income.

Over time, tourism in Nglanggeran has grown. However, this has not guaranteed secure livelihoods for local residents. Because homestay management is organized through a single DMO, some homestay owners who are close to the DMO administrators have more opportunities to host guests. Thus despite the success of tourism in Nglanggeran, for some residents their livelihoods remain vulnerable. In this case the Covid-19 pandemic crisis has exposed how vulnerable their livelihoods are in conditions of crisis.

The Covid-19 pandemic and its impact on tourism in Nglanggeran The impact of the Covid-19 pandemic has been felt by the Nglanggeran community since March 2020. At that time tourism activities were still running, however all homestay owners did not accept guests at homestays due to recommendations from the local government. There were still tourists visiting Nglanggeran to visit the GAP government appealed to all tourist destinations to close temporarily for an unspecified time. This resulted in significant impacts on the local community and all tourism activities stopped.

The pandemic had a significant effect on tourism in Nglanggeran. One group affected by this pandemic were homestay entrepreneurs. Usually homestay operators received guests at least 2 times week⁻¹. Since the pandemic, there has been no income at all from their homestays. In addition, the owners of pick-up vehicles, received no income from renting vehicles. Instead, vehicles have been used to transport people to the market. The same is true for the workers at the chocolate bar shop. Previously they received a daily wage, where wages were paid at the end of each month based on how many days they had worked. When tourism activities were closed, they were laid off and had no income at all, so they had to work odd jobs as casual laborers. The same thing was experienced by counter staff, parking attendants and cleaners. When there was no income coming in from tourism, they returned to working as day laborers.

The pandemic crisis is the most significant crisis they have experienced since tourism was developed in Nglanggeran Village. Before the pandemic, homestay owners would usually receive guests at least once a week. In peak seasons, they might have guests stay three times a week. When the Covid-19 pandemic occurred, they did not receive any guests for more than one year. This had a massive impact on the incomes of each individual. It cannot be predicted when the pandemic will end, so people cannot rely on their incomes from the homestay business. This is very challenging as tourism incomes from homestay and other tourism activities had become the largest contributor to family incomes prior to the pandemic.

Communities in the midst of the pandemic The pursuit of 'livelihoods' includes all efforts made to utilize the resources people have available in order to maintain their survival. To maintain their livelihoods, a good strategy is needed. Livelihood strategies are based on the utilization of capabilities, assets and activities (Chambers & Conway, 1992). Capabilities refers to the skills and abilities people have to survive, assets represent access to resources and activities are activities performed. One aspect of a livelihood strategy is the utilization of available assets (Scoones, 1998). This utilization of assets was done by the Nglanggeran community, the majority of whom are farmers. They maximized the use of their assets to survive in these very difficult times.

In cases where tourism is introduced to a community, there is a tendency for livelihoods to shift from existing traditional livelihoods to tourism-based livelihoods (Lasso & Dahles, 2018; Li et al., 2016; Mbaiwa, 2011; Su et al., 2016). One of the consequences is that the community loses access to natural resources because they have left their old livelihoods, including the sale of the land they previously owned. In the case of Nglanggeran Village, the Nglanggeran community maintained ownership of their land when tourism grew rapidly in their village. This strategy was a good decision because when the number of homestay customers declined or when tourism stops due to the impact of the Covid-19 pandemic, the Nglanggeran community could still cultivate their land to maintain their livelihoods.

As a community where the majority of the people live as farmers, the Nglanggeran community relies heavily on natural resources (Wall, 2013; Shen, 2014; Zhang, 2016). In facing the challenge of loss of income from tourism due to the Covid-19 pandemic crisis, the Nglanggeran community benefited from the situation where they still have natural resource assets. There are two groups of land owners. The first group is farmers who use their land for agriculture, while the second group is farmers who use their land for timber plantations.

For the first group, agricultural land in the form of rainfed rice fields is used for rice plants during the rainy season and planted with vegetable crops during the dry season. During the pandemic, when the tourism sector could not be relied upon, agricultural was one of their strengths they relied on in order to survive. However, not all land owners receive optimal returns on their natural resources.

One of the impacts of the pandemic for farmers was the decline in crop prices for vegetable crops. This greatly affected the farmers because they rely on the sale of their agricultural produce to meet their daily needs. The farmers' strategy here was to rely on the sale of agricultural products to respond this challenging situation. As well, it was not uncommon for farmers to be forced to sell their livestock assets to survive, a strategy also used by farmers to face other crises such as those caused by climate change (Alemayehu & Bewket, 2017; Ali, 2018).

However, the strategy of selling crops or livestock does not provide the best solution when the sale price of crops and livestock drops drastically due to the decline in purchasing power of buyers affected by the Covid-19 pandemic. For Nglanggeran farmers, rather than selling their crops at a price that is not commensurate with their hard work, the harvest is

mostly used for their own consumption. By implementing this strategy, the necessities of life, especially daily food needs, are still met, even though the income of the Nglanggeran farmers has decreased drastically. When there is no income, being able to eat from their own harvest is something they are very grateful for. By implementing this strategy, food security of farmers is maintained. Family food security is influenced by two things, that is, food availability and community access to food (Kebebew & Urgessa, 2011). This farmer group had both. The strategy that the Nglanggeran farmers implemented was also carried out by farmers in Nusa Tenggara Timur who have been successful in maintaining the sustainability of their livelihoods, even though they have low incomes (Tjoe, 2017).

Although most of the agricultural products are used for their own consumption, farmers still need transportation to transport their crops to their homes and then to the market for sale. The farmers rented pickups which in the pre-pandemic period were rented out as a means of transportation to take tourists to tourist attraction points. With the financial constraints they face, farmers had a unique means of paying the rental costs of transport. The transportation services used by these farmers was not paid in cash, but with some of the harvest. The farmers found that the quantity of crops they harvested exceeded what they needed for their own consumption. At the same time, if their crops were sold at the market, the income was very low. Therefore, the excess yield was used as a means of payment. The barter trade they conduct is a direct form of barter trade, where bartering is conducted without any form of written agreement (Fafchamps, 2004). Generally, the barter trade process is carried out by exchanging agricultural products or goods (Dekker et al., 2017). However, in the case of farmers in Nglanggeran, bartering involves the exchange of goods for transportation services, where some proceeds of harvest are used to pay for transportation services. This form of barter exchange also occurred in Ngubalan Village, Tulung Agung, where women who work as farm laborers do not get money as wages for work benefits, but are paid in the form of grain which is one of the foods they need for themselves and their families (Prasekti, 2017).

Nglanggeran people said that they are grateful when agricultural products provide for their daily needs. This situation illustrates how the ability to survive should not only be measured by the amount of people's cash incomes, but also by the amount of agricultural products that provide for daily food needs. Tjoe (2017) explains that agricultural products can be used for people's own consumption. The Nglanggeran community understands that natural resources are one of the assets they can rely on during this pandemic crisis as a survival strategy. For farmers, their survival in these difficult times is achieved not only by conducting activities that generate cash incomes for their daily needs, but also by obtaining foods such as vegetables that can be consumed by their families. Even if they do not obtain money or cash payments, they can still survive by earning incomes in the form of food. This phenomena concurs with previous studies (Walker et al., 2001; Shen et al., 2008; Tao & Wall, 2009b) that show that in order to meet their needs in a sustainable way, local communities do so by focussing on their assets, strategies and strengths. Nglanggeran people focus on the use

of natural resources because they still own their land which is the main capital that supports their livelihoods as farmers.

Farmers in Nglanggeran don't use the entire harvest for their own consumption. One response of farmers to the low sale price of their crops, was to innovate by producing processed snacks from their agricultural products. Aside from the drastic drop in selling prices due to the pandemic, processing harvested crops means that the food can be stored longer than the raw materials. The processed snack products they produce include banana chips and cassava chips. The Nglanggeran community has innovated by processing raw materials into ready-to-eat food, and the products were sold at kiosks and shops around Nglanggeran and other hamlets. This provided some income for them which was used for their daily needs. Innovation as a sustainable livelihood strategy, especially in times of crisis, has been documented by other scholars (Walker et al., 2001; Shen et al., 2008).

Former migrant workers previously acquired skills in processing raw materials into snacks, when they received training as members of the Retired migrant workers' group. At that time the skills they obtained were not directly put into practice because there was no assistance from the DMO, and they experienced confusion when they had to process and market their products. However, these skills have been very useful during this pandemic and utilizing these skills became one part of their survival strategy.

Land owners who plant and harvest timbers on their land faced different conditions and challenges. Nglanggeran community members planted sengon timber trees as a form of long term savings, where sengon timbers are harvested every 5 years. Nglanggeran people choose to plant sengon trees because sengon is considered to be one of the most productive timbers and the cultivation process is easy. Although the harvest period for sengon is relatively short, the quality of sengon timber is good. When Sengon timbers are harvested they are sold in the form of logs. In Nglanggeran, there are middlemen who buy the timbers from the community and sell it on to larger buyers. To date, sengon timber growers have sold their timber to these middlemen so that they do not have to organize transportation and look for buyers themselves.

The proceeds from the sale of sengon timber is generally used for important purposes such as sending their children to school, paying for marriage celebrations for their children or saving them for other unexpected purposes. The Covid-19 pandemic forced the owners of land planted with Sengon timber to sell the timber to meet their daily needs, when there was no income at all from tourism. The selling price of sengon wood during the pandemic also dropped significantly. However they had no other choice but to sell the timber at low prices as they needed income for their daily needs. For Nglanggeran community members the most important thing was that they could still survive. For farmers planting timbers, the harvest and sale of their timber has been one strategy to survive during the pandemic crisis.

Money from the sale of wood is generally used to meet people's daily needs. The prolonged pandemic has exhausted people's potential incomes from the sale of timber. As well as meeting everyday needs, the proceeds from the sale of wood were used to buy sengon wood seedlings to replant their land. However, they must wait another 5 years before the timber can be harvested. The proceeds from one timber harvest is

indeed greater than the income from one rice harvest, however they can only harvest once every five years. Moser (1996) explains that avoiding vulnerability does not only depend on how many assets are owned but on how effective is the community's ability to convert assets into income for basic needs. The Nglanggeran community has been successful in using the land for planting timber as a form of savings for urgent needs and during the pandemic this has been very useful. However, their livelihoods remain vulnerable because once their savings are exhausted, they must wait a long time before they can harvest timber again.

While the pandemic continues and it is unclear when it will end, people must continue to live their lives. The long duration of the pandemic has shown that they cannot always use their land for immediate things that may help them survive. When income from the sale of timber starts to run out, they have had to further diversify their means of livelihood by becoming day laborers, such as in construction or other forms of daily labor. Here Niehof's (2004) argument, that people diversify their livelihoods to maintain and improve their standard of living is relevant. People have job diversification strategies where they engage in more than one form of work activities to obtain additional income but do not abandon their principal source of employment. Although incomes from working as a laborer are small and not guaranteed, they do them to ensure that they can survive in these difficult times.

To increase their income from harvesting wood, leftover wood that could not be sold as logs was processed into charcoal. This was an example of local innovation. As Shen et al. (2008) have shown, one strategy taken by a community to survive in times of crisis is to innovate. The ability to make charcoal was self-taught. Community members sold the charcoal to kiosks in Nglanggeran and outside of the village. Some of their main customers were restaurants located around the village and in Yogyakarta. However, many restaurants were severely affected by the pandemic, so these restaurants bought charcoal on a consignment system. As a result, the charcoal that was delivered to the restaurants was often not paid for.

The strategies adopted by the farmers to survive during the pandemic in the end were an attempt to survive in a crisis period which was only temporary. While they have been able to survive these difficult times, they remain vulnerable. Here the concept of sustainable livelihoods can be a strategy for survival which can be applied now and in the future. The people of Nglanggeran still have to find solutions to this problem so that in the future, when they experience another crisis, they can survive while improving their quality of life. At present, people have survived the Covid-19 pandemic crisis, but it has not made their quality of life better. These findings support those of Walker et al. (2001) about sustainable livelihoods, that is, that livelihood strategies are choices of action which are influenced by economic, social, cultural and psychological factors designed to improve the quality of life for individuals, families and social groups. In order to meet their livelihood needs in a sustainable manner, local communities can focus on their assets, strategies and strengths (Tao & Wall, 2009b). The Nglanggeran community were successful in doing this yet still remain vulnerable.

Conclusion

While tourism has been developed in Nglanggeran, its people still maintain their more traditional sources of livelihood as farmers. They have not switched livelihoods, but rather have made incomes in the tourism sector as an additional source of livelihood. For Nglanggeran people, the strategy has become an important assistance in surviving a tourism slump, especially during this pandemic. When the tourism sector cannot be relied on as a source of livelihoods, they can still rely on the agricultural sector. The sustainability of livelihoods is not only about how much income they receive but about how they can optimize their available assets to survive, namely by utilizing the natural resources available. Natural resources are one of the assets that have been a strength of the Nglanggeran community in their ability to survive during the Covid-19 pandemic crisis. People rely on their agricultural land for survival. Even though they do not make profits in the form of cash, they can utilize it to fulfill their own needs and of those around them. Timber that is ready to be harvested has been a form of savings, yet in the conditions of the pandemic it has been sold at a low price to meet the necessities of life. People who own agricultural land are more likely to survive because when they cannot grow rice in the dry season, they can still plant vegetable crops. What the Nglanggeran community has done in utilizing their land has been important for their resilience. This paper provides insights for other tourist villages, about how important it is to maintain traditional assets, such as land, as a means of survival for local communities. Land utilization appears to assist Nglanggeran people in surviving the pandemic.

References

- Alemayehu, A., & Bewket, W. (2017). Smallholder farmers' coping and adaptation strategies to climate change and variability in the central highlands of Ethiopia. *Local Environment*, 22(7), 825–839. <https://doi.org/10.1080/13549839.2017.1290058>
- Ali, A. (2018). Impact of climate-change risk-coping strategies on livestock productivity and household welfare: Empirical evidence from Pakistan. *Heliyon*, 4(10), e00797. <https://doi.org/10.1016/j.heliyon.2018.e00797>
- Amerta, I. M. S., Sara, I. M., & Bagiada, K. (2018). Sustainable tourism development. *International Research Journal of Management, IT and Social Sciences*, 5(2), 248–254.
- Bakar, N. A., & Rosbi, S. (2020). Effect of coronavirus disease (Covid-19) to tourism industry. *International Journal of Advanced Engineering Research and Science (IJAERS)*, 7(4), 189–193. <https://doi.org/10.22161/ijaers.74.23>
- Baker, K. (2009). Terrorism and tourism: The vulnerability of beach vendor's livelihoods in Bali. *Journal of Sustainable Tourism*, 15(3), 249–266. <https://doi.org/10.2167/jost643.0>

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Chambers, R. (2006). Vulnerability, coping and policy. *Asian Economic Journal, 37*(4), 33–40. <https://doi.org/10.1111/j.1759-5436.2006.tb00284.x>
- Chambers, R., & Conway, G. (1992). *Sustainable rural livelihoods: Practical concepts for the 21st century*. Brighton: Institute of Development Studies.
- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice, 39*(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2
- Dahles, H., & Prabawa, T. S. (2013). Entrepreneurship in the informal sector: The case of the pedicab drivers of Yogyakarta, Indonesia. *Journal of Small Business and Entrepreneurship, 26*(3), 241–259. <https://doi.org/10.1080/08276331.2013.803672>
- Dekker, M., van Beek, W. E. A., Damen, J. C. M., & Foeken, D. W. J. (2017). From macro to micro: How smallholder farmers in Zimbabwe are coping with dollarization. In W. E. A. van Beek, J. C. M. Damen, & D. W. J. Foeken (Eds.), *ASCL occasional publications* (pp. 63–74). African Studies Centre Leiden (ASCL).
- [DFID] Departement for International Development. (1999). Sustainable livelihoods guidance sheets (guideline sheet). Retrieved from <http://www.dfid.gov.uk/>
- Ellis, F. (2000). *Rural livelihoods and diversity in developing countries*. Oxford: Oxford University Press.
- Fafchamps, M. (2004). *Market institutions in Sub-Saharan Africa*. Cambridge: MIT Press.
- Firdaus, H. (2015, 22 November). Sugeng Handoko, mengubah desa dengan wisata alam. *Kompas*. <https://travel.kompas.com/read/2015/11/22/182045927/Sugeng.Handoko.Mengubah.Desadengan.Wisata.Alam?page=all>
- Hardy, A. L., & Beeton, R. J. S. (2001). Sustainable tourism or maintainable tourism: Managing resources for more than average outcomes. *Journal of Sustainable Tourism, 9*(3), 168–192. <https://doi.org/10.1080/09669580108667397>
- Hjemdal, O., Friborg, O., Stiles, T. C., Martinussen, M., & Rosenvinge, J. H. (2006). A new scale for adolescent resilience: Grasping the central protective resources behind healthy development. *Measurement and Evaluation in Counseling and Development, 39*(2), 8496. <https://doi.org/10.1080/07481756.2006.11909791>
- Kasperson, R. E., Dow, K., Archer, E. R. M., Cáceres, D., Downing, T. E., Elmqvist, T., ... & Ziervogel, G. (2005). Vulnerable peoples and places. In R. Hassan, R. Scholes, & N. Ash (Eds.), *Ecosystems and human wellbeing: Current state and trends* (pp. 143–164). Island Press.
- Kebebew, Z., & Urgessa, K. (2011). Agroforestry perspective in land use pattern and farmers coping strategy: Experience from southwestern Ethiopia. *World Journal of Agricultural Sciences, 7*(1), 73–77.
- Kour, P., Jasrotia, A., & Gupta, S. (2020). Covid-19: A pandemic to tourism guest-host relationship in India. *International Journal of Tourism Cities, 7*(3), 725–740. <https://doi.org/10.1108/IJTC-06-2020-0131>
- Lasso, A., & Dahles, H. (2018). Are tourism livelihoods sustainable? Tourism development and economic transformation on Komodo Island, Indonesia. *Asia Pacific Journal of Tourism Research, 23*(5). <https://doi.org/10.1080/10941665.2018.1467939>
- Lasso, A., & Dahles, H. (2020). Fishermen into tour boat operators: Tourism development in Labuan Bajo, Indonesia. In C. Dolezal, A. Trupp., & H. T. Bui (Eds.), *Tourism and development in Southeast Asia* (pp. 133–146). Routledge.
- Li, Y. J., Yu, H., Chen, T., Hu, J., & Cui, H. Y. (2016). Livelihood changes and evolution of upland ethnic communities driven by tourism: A case study in Guizhou Province, southwest China. *Journal of Mountain Science, 13*(7), 1313–1332. <https://doi.org/10.1007/s11629-015-3631-6>
- Marshall, M. N. (1996). The key informant techniques. *Family Practice, 13*(1), 92–97. <https://doi.org/10.1093/famp/13.1.92>
- Mason, P. (2008). *Tourism impacts, planning and management* (2nd ed.). New York: Elsevier.
- Mbaiwa, J. E., & Stronza, A. L. (2010). The effects of tourism development on rural livelihoods in the Okavango Delta, Botswana. *Journal of Sustainable Tourism, 18*(5), 635–656. <https://doi.org/10.1080/09669581003653500>
- Moser, C. O. (Ed.). (1996). Confronting crisis: A summary of household responses to poverty and vulnerability in four, poor urban communities. *The World Bank*. <https://doi.org/10.1596/0-8213-3561-8>
- Neto, F. (2003). A new approach to sustainable tourism development: Moving beyond environmental protection. *Natural Resources Forum, 27*(3), 212–222. <https://doi.org/10.1111/1477-8947.00056>
- Niehof, A. (2004). The significance of diversification for rural livelihood systems. *Food Policy, 29*(4), 321–338. <https://doi.org/10.1016/j.foodpol.2004.07.009>
- Nost, E. (2013). The power of place: Tourism development in Costa Rica. *Tourism Geographies: An International Journal of Tourism Space, Place and Environment, 15*(1), 88–106. <https://doi.org/10.1080/14616688.2012.699090>

- Prasekti, Y. H. (2017). Peran wanita tani dalam menunjang perekonomian rumah tangga keluarga petani. *Jurnal AGRIBIS*, 13(15), 1–16.
- Rátz, T. (2000). Residents' perceptions of the socio-cultural impacts of tourism at Lake Balaton, Hungary. In G. Richards & D. Hall (Eds.), *Tourism and sustainable community development* (pp. 3647). Routledge.
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *ANNALS The New York Academy of Sciences*, 1094(1), 1–12. <https://doi.org/10.1196/annals.1376.002>
- Scoones, I. (1998). *Sustainable rural livelihoods: A framework for analysis*. Brighton: Institute of Development Studies (IDS).
- Shen, F., Hughey, K. F. D., & Simmons, D. G. (2008). Connecting the sustainable livelihoods approach and tourism: A review of the literature. *Journal of Hospitality and Tourism Management*, 15(1), 19–31. <https://doi.org/10.1375/jhtm.15.19>
- Skare, M., Sariano, R., & Rochon, M. P. (2021). Impact of Covid-19 on travel and tourism industry. *Journal of Technological Forecasting and Social Change*, 163, 120469. <https://doi.org/10.1016/j.techfore.2020.120469>
- Su, M. M., Wall, G., & Xu, K. (2016). Heritage tourism and livelihood sustainability of a resettled rural community: Mount Sanqingshan World Heritage Site, China. *Journal of Sustainable Tourism*, 24(5), 735–757. <https://doi.org/10.1080/09669582.2015.1085868>
- Tao, T. C. H., & Wall, G. (2009a). A livelihood approach to sustainability. *Asia Pacific Journal of Tourism Research*, 14(2), 137–152. <https://doi.org/10.1080/10941660902847187>
- Tao, T. C. H., & Wall, G. (2009b). Tourism as a sustainable livelihood strategy. *Tourism Management*, 30(1), 90–98. <https://doi.org/10.1016/j.tourman.2008.03.009>
- Tjoe, Y. (2017). Sustaining livelihoods: An analysis of dryland communities in West Timor, Indonesia (thesis). Australia: Griffith University.
- Tracy, S. J. (2013). *Qualitative research methods*. London: Wiley Blackwell.
- Turner, B. L., Kasperson, R. E., Matson, P. A., McCarthy, J. J., Corell, R. W., Christensen, L., ..., & Schiller, A. (2003). A framework for vulnerability analysis in sustainability science. *Proceedings of the National Academy of Sciences*, 100(14), 8074–8079. <https://doi.org/10.1073/pnas.1231335100>
- Walker, J., Mitchell, B., & Wismer, S. (2001). Livelihood strategy approach to community- based planning and assessment: a case study of Molas, Indonesia. *Impact Assessment and Project Appraisal*, 19(4), 297–309. <https://doi.org/10.3152/147154601781766925>