

Conference Paper

Food Security for Communities Around the Forest in Alleviating Poverty

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Abstract

This study aims to describe the condition of food security and economic activities of forest communities in reducing poverty by utilizing the availability of food resources. The subjects of this research was people who live in rural areas located around forest in Tiron Village, Kediri Regency, East Java Province, Indonesia. The research method was a descriptive method. Based on data collection using interview techniques and questionnaires, a sample of 10 people was obtained. These people have a livelihood as a farmer around forest and Mount Wilis in Kediri. The results of the study concluded that people used agricultural and forestry natural resources to grow rice, corn, cassava, sugar cane, ginger, soybeans, bananas, and mango trees. This type of plant becomes a food for the community and at the same time as an economic source for the village community. Existing economic activities include: growing crops, raising animals, mango sellers, farming, transporting agricultural products, transporting agricultural products, vegetable traders, food stalls, and small grocery stalls. Food security in rural communities was characterized by the economic activities in the agricultural sector based on the local wisdom of the community. At certain times there were events in the village that contained ritual, religious, ancestral, and cultural values. Local governments could provide adequate market access to support the continuity of economic activities in the countryside. Road improvements and street lighting are needed by the community to develop economic activities by utilizing the available natural resources.

Keywords: agriculture, rural, forestry, food security, poverty

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1. Introduction

The economic development of a country is directed in achieving the welfare of the community. However, not all countries can achieve the level of welfare for their people. Poverty is still a problem for growth in developing countries. Poverty is a portrait of people's lives who have not yet achieved the desired level of welfare. In this case, poverty occurs because of the inability of the population to access available economic resources (Mukhlis and Simanjuntak, 2016). As a result, people trapped in low income.

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In many cases in various developing countries, poverty is synonymous with the inability of the population in providing food in their lives. Due to limited income, there are obstacles in the population's ability to consume. As a result, some residents cannot reach their level of welfare. In addition to that, conditions in developing countries faced with the occurrence of dualistic economies. The existence of dualistic economics as once conveyed by Arthur Lewis in 1954 caused developing countries to face dilemmas in their development. In the condition of dualistic economic, there is a divergence between the agricultural sector and the industrial sector. According to Ocampo, et al. (2009), in developing a country's productivity growth, it is very closely related to the dynamic structural changes in modern industries and services.

In this case, the structure of the economy in different countries causes food problems to be solved differently for various countries. Food availability is an essential factor in ensuring the survival of people in different countries. Developing countries that have abundant natural resources but with problems of food scarcity. In this case, the agricultural sector fails to meet the food needs of its population. As a result, some residents have to spend a significant amount of money to consume food. As for some other residents who do not have sufficient income or low income, they reduce their level of food consumption (Gundersen, Kreider, and Pepper, 2011; Loopstra and Tarasuk, 2013). Thus, people's welfare decrease.

Kediri Regency is one region in East Java Province, Indonesia which has a topography area consisting of forestry, plantations, and marine. The population in 2015 reached to 1,546,883 people and population growth reached 0.58% (2010-2015). Its economic growth in 2016 also reached 5.55%. The value of the Gross Domestic Regional Product (GDRP) of Kediri Regency is still dominated by the role of the agriculture, forestry and fishery sectors at 23.7% (Based on Constant Price) (www.bps.go.id). This sector is a solid foundation for improving regional economic performance. Therefore, developing the agriculture, forestry and fisheries sectors are strategic food-producing sectors in the realms of the national economy. With the support of its geographical conditions which consists of forests and rice fields, Kediri Regency becomes food storage that can be relied upon to supply food needed by the people of East Java Province.

Even though the economic conditions sustained by agriculture, forestry and fisheries sectors in Kediri Regency, there are still problems in the field of poverty. The data shows that the poverty rate in Kediri Regency in 2015 was 12.91% and in 2017 it went down to 12.25% (www.jatim.bps.go.id). The existence of this poverty level shows that there are still problems in the distribution of economic resources and income of the people in

Kediri Regency. In this case, the ability of the local community to develop food commodities independently and creatively are in need of serious attention. Along with the increasing number of people, the decreasing agricultural land, and the openness of the national economy to the global economy, food security that is strong enough is needed to provide food for the people. The uniqueness of the region in the form of availability of the endowment factors for food-based natural resources is a strong regional economic competitiveness.

Based on the above explanation, it shows that there are severe problems regarding food security and poverty levels in Kediri Regency, especially in the communities around the forest. The forest area is 22,462 hectare. Forests are still the primary source of livelihood for the people living around the forest. Among the areas in Kediri Regency, which are rich in the potential of food-based natural resources and located in mountainous areas and forestry, is the Tiron Sub-District of Banyakan. This village located around Mount Wilis which connects the Kediri and Nganjuk Regencies. The livelihoods of the community are mostly farmers. Developing types of agriculture include rice plants, mango plantations, corn plants and raising cattle/goats. The economic activity of the community provides an opportunity to fulfil the needs of life from time to time. Based on existing data, it is shown that poverty occurs in Kediri Regency a lot in the countryside, especially in the area around the forest.

2. Food Security and Poverty

Poverty is still a serious problem faced by various countries. Poverty is not only concerned with low-income levels, low consumption and lack of assets. However, poverty also involves vulnerability, exclusion and powerlessness. Also, poverty is not an intrinsic attribute of people, but a product of the livelihood system and the socio-political forces that shape them. In this case, there is a close relationship between rural poverty, food security and agricultural development (Tollens, 2007). Whereas according to the OECD (2001), poverty could include various dimensions of deprivation that is related to human abilities including consumption and food security, health, education, rights, voice, security, dignity and decent work.

Food supply is an essential factor in poverty alleviation in developing countries. This form of food supply includes: producing food, processing food materials, affordable food prices, current food commodities in people's lives. In this case, the ability of the population in providing food would be able to boost the expansion of economic activities. The expansion of economic activities can create jobs and wages received by workers.

This condition can ultimately lead to a decreased level of poverty that is occurring. Food supply is closely related to the way people manage natural resources they have to use in their consumption.

Forest-based natural resource management plays a vital role in poverty alleviation in developing countries. According to Williams (2002) forests historically have an essential role in influencing the pattern of a country's economic development. In this case, forests can play a role in supporting people's livelihoods, helping structure economic change, and promoting sustainable growth.

In the utilisation of forest resources in various developing countries, it is carried out by using the local wisdom of the community. According to Teezzi et al. (2011) the result of the local wisdom's sedimentation manifests into tradition or religion. In various countries, people's lives are characterised by distinctive culture and customs, especially in the management of natural resources for the fulfilment of people's food. Existing local wisdom gives the enthusiasm to fight in poverty alleviation through various innovations and inspiring the community to maintain survival.

The results of a study conducted by Mungmachon (2012) in Thailand concluded that the integration between knowledge and local wisdom could encourage the community's economy to continue to grow along with the global era in entering the Thai economy. Some economic community groups tried to study the problems they were facing, found solutions together and then became stronger. They began by collectively studying their problems, rediscovering traditional wisdom and existing knowledge, and then integrating new knowledge. By this, the community became more prosperous, had a positive environment and social impact.

The results of the research conducted by Mkwambisi et al. (2011) underlined the importance of policies in the agricultural sector in poverty alleviation. The results of his research in Malawi concluded that community groups, especially female-headed households, benefited from the increase of income from programs organised by non-governmental organisations. Also, support for the development of the agricultural sector in the village was able to reduce poverty in Sub-Saharan Africa. In line with the study, the results of a study conducted by Arouna et al. (2017) have shown that the distribution of rice varieties contributed significantly in achieving food security and poverty reduction in Sub-Saharan Africa (SSA) countries.

Research conducted by Capaldo et al. (2010) produced a model policy in supporting food security. Empirical findings indicated that adequate access to food in developing countries is unstable. In the result of the household survey data, the food vulnerability

analysis model that presented providing an estimate of the probability that individual households will lose or gain adequate access to food shortly.

The research conducted by Mbukwa (2013) aimed to develop a model to predict the status of food security in Tanzania. The results of his research provided a conclusion that the age of the household head, education level and household size have the power to predict the status of people's food security. In this case the more educated the head of the household, the higher the possibility of the community to be able to improve the status of their food security in fulfilling their daily lives.

3. Methods

This research was conducted on community groups living around Gunung Wilis forest located in Tiron Village, Banyakan District, Kediri Regency, East Java Province, Indonesia. The study conducted in the period of March-April 2018. The method of data collection was done using in-depth interview and observation techniques. The research respondents were ten people consisted of a farmer group leader (1 person), community leaders (2 people), mango processed business managers (2 people), farmers (2 people), housewives (2 people), and a village government official (1 person). The data will be analyzed using qualitative methods and descriptive approach. The result of interview section will be analyzed critically using the literature review.

4. Result

The results of the observations carried out showed a pattern of people's everyday lives related to food security and poverty conditions in rural communities. Most villages had a topography of agricultural and hilly fields. The agriculture which based on rain, and there is also irrigation agriculture. Poverty in rural communities was mostly in the agricultural area, which relied on rain and hilly areas. In the dry season, the area is dry, barren and the weather is extreme. This condition resulted in the agricultural land being difficult to plant plants. This condition occurred for approximately 6-7 months, even though the agricultural and hilly land was the primary source of livelihood for rural communities in the area.

This sterile geographical environment had an impact on the economic life of rural communities that are still poor. The existence of a simple physical form of the houses (local tiles roof, walls made of bamboo, the limited lighting of the house, and steep road conditions) can be an indicator for the poverty in the village community. Also, the social

conditions of the village community were mostly elementary school/or drop-outs, low income and simple food needs.

In overcoming the existing economic limitations, village communities had a high spirit of life. They developed agricultural commodities that are resistant to extreme weather and limited to water resources. The agricultural commodity was also at the same time fulfilling the food needs of the village community for generations. Types of food developed by rural communities can be categorised into two, namely high-level plants and low-level plants. High-level plants include mango trees (podang species) and coconut trees. While low-level plants include Rice, Corn, Soybeans, Bananas, Peanuts, Turmeric, Ginger, Cassava, and Sugarcane.

In addition to farming, residents also raised livestock to sustain their economic life. Farmed animals include cattle, goats and chickens. These animals were as savings when there would be a sudden need so that the animal can be sold. When there was no sudden need, the animal can be sold for educational needs, home construction/renovation, purchase of motorcycles and other needs.

Agricultural and livestock resources were able to affect the villagers' livelihoods. Livelihoods of the population were mostly farming and raising livestock (chickens, cows, goats). Farm work was carried out in the morning and afternoon. Various kinds of food, management is complimentary. Many people's economic activities were carried out in the morning. Existing activities included cleaning grass, irrigating rice fields, looking for animal food, and cultivating the productive land. Various kinds of foods had different production times and patterns. Both plants and livestock were able to supply the food needs of rural communities. It has happened for generations and can be useful for the economic life of the community.

Various natural resources that were strictly related to these foods were cassava, mango, rice, sugarcane, vegetables, corn, and soybeans. Various plants were cultivated by communities around the forest for generations and are sustainable. In its development, various existing raw material resources can be processed so that they become diversified food products, such as syrup, *tempe*, flour, *tiwul*, *gatot*, and *kripik*. The more diversified raw materials processed into products strengthen the food security of the local community, especially around the forests in Kediri Regency, East Java.

5. Discussion

The rural agricultural land was still quite extensive, so many people work as farmers. During the rainy season, the people of Tiron Village planted rice on soil that contains

abundant water so it would not be difficult for the people to irrigate their rice fields. In the dry season, the Village farmers cultivated corn, soybeans, cassava and other plants that do not need much water in the cultivation process. The Tiron Village community, based on interviews with researchers and informants, said that they harvested rice once a year with the yield reaching 4 tons in one harvest.

The people in Tiron Village beside being farmers in their rice fields had excellent products that are quite well known as producers of mango fruit. Some of them planted mango trees on the land they own, even in this village almost all of them had mango trees. As for the results of mango plantations in Tiron Village, after the harvest period some collectors came to buy, then some of them also processed it into several food and beverage products made from mango. The processing of mango trees was done simply starting from cleaning the grass, cutting dry branches, reducing leaves and giving fertiliser.

The farmers' harvest was sold directly to collectors who came directly to buy agricultural products from the community. However, they did not sell all their crops, as a portion of their agricultural products was reserved for them to consume. Harvesting the mango tree can be more than once because not all mangoes have the same harvest season. So it was estimated that in 3-4 months the harvest period for mangoes, which is a rotation of the village economy. Derivative economic activities produced from this mango farm are; workers who collect mangoes from trees, transportation, transportation workers, retailers, siegers, mango souvenirs stall, and security. Mango harvest was like an annual income for the village community. Also, there were also other harvests to fulfil their daily needs, such as planting cassava, soybeans, corn, bananas, and ginger. Also, the community also used the surrounding forest to raise cattle and goats. Forests also provided a place for the supply of firewood and low-level crops such as vegetables.

The economic stretch of the Tiron village community located on the Wilis hillsides/ mountains had a pattern of economic activity by utilising, natural resources and forestry in the rural area. Management of these resources was carried out from generation to generation based on the existing local wisdom. These forms of local wisdom were '*gotong-royong*' which is cooperation in processing land to grow vegetables, cooperation in raising funds for social activities. In a certain period, the village community routinely held a cultural event called '*Bersih Desa*' or 'clean the village' as an expression of prayer and gratitude for the joy of natural resources and the happiness of the village community. This local wisdom is a tradition that is believed by the community to bring prosperity to their lives. Nature, the village and forest environment have provided life

and land for the lives of the people. As a result of this local wisdom, the use of natural resources is more planned and sustainable.

The study result is in line with the opinion of Tollens (2007), especially the existence of a relationship between food, agriculture and poverty. That the agricultural sector provided food resources that can be used by the community in poverty alleviation. Poverty had a relationship with aspects of health, education, security, food security, rights, voice, dignity and better jobs (OECD, 2001). The utilisation of forest resources and agriculture was able to facilitate the community in fulfilling their daily needs. It was because the agricultural sector is a sector which its existence is close to the lives of people. The geographical environment of rural communities encourages people to make various efforts to maintain life through economic activities generated from the agricultural sector.

The activities of the Tiron Village community in overcoming food security, if it is presented, will be a continuity diagram as follows.

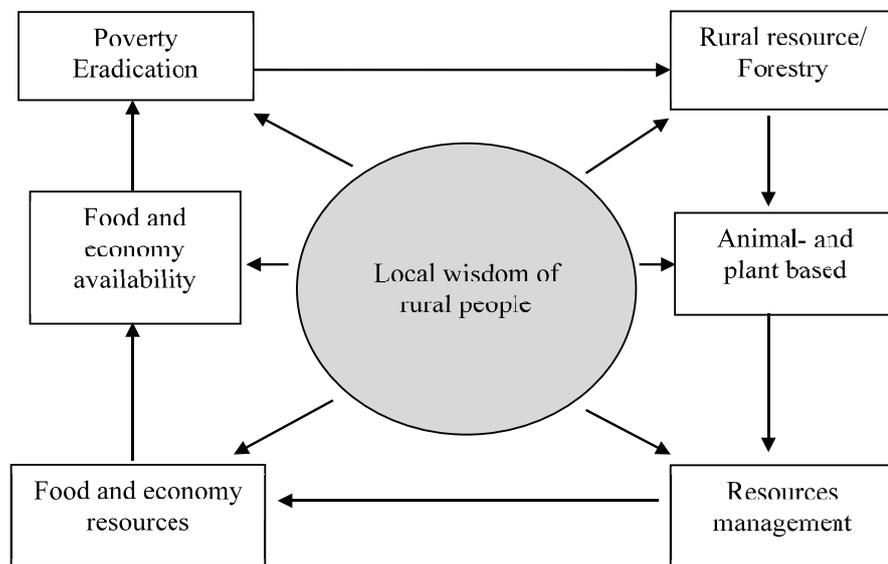


Figure 1: Utilization of rural resources based on community local wisdom.

Based on the picture above, it can be explained that the economic activities of the community in utilizing forest resources and also the resources in the village are also related to the food security of the village community. The way the village people used natural resources was done by processing resources that can produce economic value in people’s lives. The village community was very dependent on the forest resources around them, in which there were animal element that they can consume directly or to be traded. The animal and vegetable elements that were processed into food that can fulfil their daily food needs, or there were some animals that they care for and then sell them. This certainly made forest resources to become the source of food for the surrounding community because it was able to supply raw food that the community needs,

and also a source of economic for the community. Forest resources in the countryside were not only seen as a wood producer but are also related to human resources, funds for forestation and rural development. According to Williams (2002), forests historically have an essential role in influencing a country's economic development patterns. In this case, forests were able to play a role in supporting people's livelihoods, helping structure economic change, and promoting sustainable growth. Community participation in the development of rural area or areas near forests can be realized in the form of community involvement and can be implemented to meet the required criteria source of economic for the community. Forest resources in the countryside were not only seen as a wood producer but are also related to human resources, funds for forestation and rural development. According to Williams (2002), forests historically have an essential role in influencing a country's economic development patterns. In this case, forests were able to play a role in supporting people's livelihoods, helping structure economic change, and promoting sustainable growth. Community participation in the development of rural area or areas near forests can be realized in the form of community involvement and can be implemented to meet the required criteria.

In the economic activities of the community, there was food availability, food access and food utilization. The utilization of forest resources and village resources can produce value for economic activities and also sustainably fulfil food needs which can reduce the level of community poverty. This happens because some villagers have been able to send their children to school at the tertiary level, ownership of electronic equipment and motorcycles. In this case, according to the results of Mungmachon's (2012) research, local wisdom played an essential role in strengthening community ties in achieving people's welfare. The processing cycle of forest resources, economic activities, food availability and a decrease in the level of poverty in rural communities is very closely related to the local wisdom of the community.

6. Conclusion and Recommendation

The processing cycle of forest resources, economic activities, food availability and a decrease in the level of poverty in rural communities was very closely related to the local wisdom of the community. The local wisdom of the community was able to guide the community in managing natural resources on an ongoing basis. The local wisdom practices of the community were reflected in village cleaning activities which contain values of rituality, religiosity, gratitude and culture. The accumulation of values has formed a strong identity of the village community in poverty alleviation.

The food security model in Tiron Village, Kediri Regency relies on forest-based and rural natural resources resulting from generation to generation way of management to the present generation. They still depended on natural resources around their homes. Most people worked as farmers, agricultural products that are quite diverse ranging from rice, corn, cassava, sugarcane, ginger, soybeans, bananas, and mango trees. Villagers used forest resources to be consumed directly or traded in the market. Overall, community food security in Tiron Village has fulfilled the three elements, regarding food availability, food access, food utilization. Whereas the pattern of economic activities of rural communities around the forest was in the form of farming on their paddy fields in the morning and earning additional income, most of them raise livestock (chickens, goats and cows). Also, they also used mango trees to gain a sustainable income.

To eradicate the poverty that occurs mainly in rural communities around the forest, the local government supported by the village government and also the village community could form a grand design of the use of natural resources in alleviating poverty in rural communities. This grand design is as the basis for programming and budget allocation from the central government. Also, there is a need for the involvement of third parties in empowering rural communities based on local wisdom in the utilization of forest resources. This effort can be made by carrying out joint activities and determining the priority scale in alleviating poverty in rural communities.

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