Analysis of Farmer Livelihood Strategy During The COVID-19 Pandemic in Situ Gede Village

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Abstract. The COVID-19 pandemic has resulted in changes to the community's livelihood system due to the PSBB policy, so it directly impacts people's income. This condition triggers a shift in the strategy of household income patterns, especially for farmers in Situ Gede Village. This study aims to analyze the livelihood system of the Situ Gede Village community and identify farmers' household livelihood strategies during the COVID-19 pandemic. The qualitative research uses secondary data and field observations through critical informants. The results showed that the livelihood system of the Situ Gede community came from the agricultural and non-agricultural sectors. The COVID-19 pandemic has made farmers' households more vulnerable because of their declining existence. Restrictions on activities outside the home make farming households that play a dual role in relying on livelihood sources only from the agricultural sector. However, the income of farmers' households depending on the farm industry is insufficient to meet their daily needs. Therefore, farming households make adaptations by adjusting expenditures and adding agricultural commodities.

Keywords: Adaptation, Livelihood, Pandemic

1 Introduction

As an agricultural country, Indonesia presents landscapes in an area that can function as two things, namely landforms and landscapes. Landscapes as landforms include agrarian subjects and resources. Meanwhile, landscape as landscape consists of all combinations of land use, biophysical characteristics, and human actions. The diverse landscapes in each region give

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rise to variations in utilization and activities related to community livelihood systems. Areas that have the same landscape do not necessarily show the same livelihood systems. Within the scope of the Bogor Agricultural University campus, the landscape in several villages is an area of rice fields and secondary crops. These two commodities still exist in the village area around the campus, especially in Situ Gede Village.

The process of socio-economic manipulation involves institutional aspects and the reconstruction of values (ethical and cultural change) adopted in developing a livelihood system. The dynamics of rural social relations are built into a stable social structure as a result of the formation of a network of livelihood strategies that are applied by each individual or household when they build a survival strategy. According to Dharmawan (2007) [1], the characteristics of livelihoods and livelihood systems are related to the local socio-cultural system. There are three elements of the most important social system that greatly determine the form of livelihood strategies developed by small farmers and their households. The three elements are: (1) social infrastructure (institutional settings and prevailing social norms), (2) social structure (setting social layers, agrarian structures, demographic structures, relationship patterns of local ecosystem utilization, local knowledge), (3) social supra-structure (ideological setting, economic-moral ethics, and the prevailing value system).

According to Ngadi and Purba (2020) in Kartika (2021) [2], COVID-19 has hit all sectors and types of work in Indonesia with varying degrees of severity. The Covid-19 pandemic which contains policies that block people's access to social mobility has an impact on the agricultural sector. According to Kartika and Novitriani (2021), the impact of the pandemic on the agricultural sector did not provide significant changes because various agricultural products are part of basic human needs so that demand for agricultural products will remain in a pandemic situation, despite changes in consumer behavior.

Situ Gede Village is located in West Bogor District, Bogor City. Situ Gede Village has an area of 232.47 Ha, with 34 neighbourhoods and 10 hamlets. Situ Gede is one of the areas around the Bogor Agricultural University or IPB University which is located in Dramaga. The location which is not so far away makes the campus which has been established since 57 years ago, of course brings many positive influences on the community and the surrounding area, one of which is Situ Gede. IPB University has had a major impact, especially on the survival of the Situ Gede community who work as farmers. The scope of Situ Gede Village consists of settlements and forests. Most of the people in Situ Gede Village work in the agriculture, fisheries, and forestry sectors. Not only that, but the tourism sector is also a source of livelihood for the local village community

Agriculture in Situ Gede Village tends to be similar, namely tubers, especially taro and sweet potatoes. Both types of tubers are easy to find along the road in Situ Gede Village. Taro and sweet potatoes are one of the primary commodities after rice. Thus, tubers are one of the solutions for food security for the community and a community livelihood system that directly impacts livelihood strategies.

Since the Covid-19 pandemic, the community has experienced limitations in their livelihood systems due to the PSBB policy, which impacts household income. According to the Manpower Act No. 25, 1997, namely the activities of individuals or families, or several people who carry out joint efforts to carry out economic activities on the basis of trust and agreement, and are not legal entities. Besides being vulnerable because they are not legal entities, most jobs in the informal sector also depend on nature, social, economic, and political conditions such as agricultural sector workers, street vendors, public transportation

drivers, and others. In an effort to overcome this, there are responses, co-adaptations, and resilience which are identified and analyzed based on this research.

Based on the background, it is appealing to research:

1. Analyzing the topography of the area and agricultural conditions in Situ Gede Village.
   It is important to know the basic topography and the agricultural conditions in Situ Gede Village
   know the livelihood system and adaptation form of Situ Gede Peasants.
2. Analyzing the livelihood system of the Situ Gede Village community.
   The livelihood system will guide the community to adapt with the conditions, especially with the
   Covid-19 pandemic. Will the community's job be affected during the pandemic?
3. Identifying co-adaptation responses and forms of community resilience in dealing with the impact of the Covid-19 pandemic.
   Resilience and vulnerability during the Covid-19 pandemic will bring the co-adaptation form for the
   community to stay fulfill their everyday needs. Is there any strategies for the peasants family to
   dealing with the pandemic?

2 Method

Based on the problem formula, this research uses qualitative methods, which use secondary data and field observation. Secondary data submitted based on previous online research, including journal, article, prociding, or thesis relevant to our topic. Field observation was submitted from deep interviews with critical informants who related to the strategy of farmer livelihood so the writer could see the best livelihood strategy during the pandemic Covid-19. The informants were selected by random sampling which are the peasants that the writer found during the observations, especially the tubers peasants. The observations started from June 15th 2022 with the data taken in Situ Gede Village, West Bogor District, Bogor City. The data processing started two weeks after the observations.

3 Results and Discussions

3.1 Area Description

Situ Gede Village is located north of the Cisadane River, west of Cikarawang Village, east of Bubulak Village, and south of Sindang Barang. According to data obtained from Potential Villages in 2011 [3], the District of West Bogor has an area topography of sloping land with fewer than 15 degrees slope. Some others have land with a moderate slope of 15 to 25 degrees. In addition, according to the 2014 Village Potential [4], Situ Gede Village is outside the forest area. However, in 2018 [5], the village of Situ Gede was on the edge of or around a forest area classified as a conservation forest. This shows a change in the landscape, which is marked by the emergence of community activities around the conservation forest area.

However, in terms of livelihoods, the people of Situ Gede do not depend on forest areas because the majority of people work in the agricultural and non-agricultural sectors. Changes in the landscape in Situ Gede Village in the last five years have seen quite significant changes. Based on the catch in Google Earth, there has been an increase in the number of residential areas, so green land is decreasing.

Changes in the landscape in Situ Gede village can be seen in the increasing number of lands that are converted into residential areas, shops, boarding houses, schools, and other public facilities. Changes in the landscape also occur in rice fields. In the beginning, farmers and peasants planted lowland rice commodities. However, over time and with the increasing number of people in Situ Gede Village, peasants began to plant secondary crops such as tubers and vegetables to meet the community's needs. According to data from the Central Bureau of Statistics for West Bogor District in 2020 [6], the area of agricultural land in the form of rice fields in Situ Gede Village is 0.9 km², and the remaining 0.37 km² is not rice fields. In comparison, the non-agricultural land in this village is 0.46 km².

3.2 Farmer Livelihood Before and After Covid-19 Pandemic

Farmers are producers of farming businesses and farmer households and as a group can be said to be vulnerable to being affected by poverty. This is due to the inhibiting factor in the form of access caused by a decrease in uptake of agricultural products and consumer demand. The decline in crop prices greatly affects the total income of farmers. The decline in income also greatly determines the type of food and consumption patterns of farmer households. Farm households during the Covid-19 pandemic need a strategy to maintain food availability and improve health. Farm household strategies in overcoming vulnerability have the aim of exercising power, tolerance, reducing and minimizing various aspects of stressful situations. The survival strategy is carried out using rational choices by relying on cost, reward and comparison alternatives (Satriyati and Biroli 2021) [7].

In general, the community's economic activities mostly rely on the agricultural sector, with the main profession as a farmer. There are those who make farming as a side job, there are also those who make it their main job. The majority of farmers in Situ Gede Village are sharecroppers who come from outside the village. According to the results of interviews with several sources, namely Mr. Oji and Mr. Suganda who are taro farmers, their income before and after Covid-19 did not show a significant difference. The impact of the COVID-19 pandemic that farmers felt the most was sales which experienced a drastic decline due to the decline in people's purchasing power. This is not comparable to the effort and attention that farmers put out when farming (Nur Sa'idaturrohmah 2022) [8]. From the various economic sectors, it is just the agricultural sector which has economic value that can make Indonesia survive the threat of a global crisis, including the crisis caused by the current COVID-19 pandemic (Kartika dan Novitriani 2021) [2]. In this case, the impact of the pandemic in the agricultural sector is in the sales process, which incidentally is not carried out by the smallholders in Situ Gede Village.

The pandemic basically does not interfere with or hinder the agricultural process, especially for smallholders. There were no changes or shifts in livelihoods before and after Covid-19. However, in terms of the amount of wages they get and the time they work per day, when the pandemic outbreak is at its peak, smallholders get a cut in the amount of wages and working time. The existence of a policy to stay at home, makes farmers have to reduce working hours in the fields and this of course has an impact on the amount of wages they get. For example, Mr. Oji's income before the pandemic ranged from Rp. 150,000 to Rp. 200,000 per week with the number of working hours per day of around 10 hours.

However, during the Covid-19 pandemic where the PSBB policy was implemented and restrictions on social activities outside the home, Mr. Oji's working hours per day became around 5 hours, or half of the working hours before the pandemic. Of course this has an impact on the decline in the weekly wages earned by Mr. Oji. Among several health protocols implemented by the community, one of which is by limiting distance, not even a few people are quarantined at home or limiting social interaction during the Covid-19 pandemic to support policies from the government as an effort to stop the transmission of Covid-19 (Hidayat and Noeraida, 2020) [10].

Even though the income of smallholders decreased, this did not make the farmers switch professions to non-agricultural fields. Because the agricultural sector is one sector that is not affected by the pandemic. The activity of cultivating the land and other agricultural activities goes on as usual, it's just that there is a reduction in working time to reduce mobility outside and prevent the spread of the Covid-19 virus. The decline in sales of agricultural products due to the PSBB policy made farmers consume agricultural products for their own households, or commonly called subsistence. This is also correlated with the response and adaptation of farmer households in dealing with the impact of the Covid-19 pandemic.

3.3 Co-Adaptation Response, Resilience and Vulnerability

Resilience is the capacity of the system to absorb disturbances and reorganize when a change occurs so that it still produces the same function, identity structure, and reciprocity (Walker et al., 2004) [11]. There are three indicators in understanding the concept of resilience including buffer capacity, self-organization ability, and learning capacity. The three indicators of resilience are described in terms of length of time in farming, education, income, expenditure, savings, health conditions, dependency ratio, and organizational membership in the community (Speranza et al., 2014) [12]. Factors that affect the resilience of farmer households are the gender of the head of the household, the number of household members, the level of financial capital, household income, the level of trust in the network, and the level of asset control (Amalia et al., 2014) [1]. Resilience and adaptability can be used as tools to get out of a crisis, but they can also be used as an instrument to be in a crisis. The value of resilience must be interpreted through components that can be useful for activating the sustainability process (Bonati, 2014) [13].

Adaptation is the most basic response system to change the system due to disturbance or foam is defined as the process of a change being overcome by responding to these changes (Gallop´ın, 2006) [14]. To reduce the risk of livelihood vulnerability, women entrepreneurs of small and medium enterprises usually carry out multiple micro-enterprises strategies (de Groot et al., 2017) [15]. The strategy of finding sources of livelihood that is occupied to finance the needs of all family members in the long term, both when poor and prosperous is called a livelihood strategy (Sugiharto et al., 2016) [16]. The strategies applied by households vary according to ownership and resource conditions (Widiyanto et al., 2010) [17].

Ownership and access to livelihood resources are the basis of farmer households in carrying out livelihood activities (Brigita et al., 2018) [18] . There are three classifications of livelihood strategies (Scoones, 1998) [19] namely agricultural livelihood engineering, dual livelihood patterns, and spatial engineering. There are also three adaptation mechanisms that can increase resilience including economic adaptive mechanisms, ecological adaptive mechanisms. and social adaptive mechanisms (Dharmawan et al., 2016) [1].

In Situ Gede Village, there was a slight change in the condition of the ecosystem, in this case the change experienced was the condition of the water drying up, and the impact on plants that really needed water. The COVID-19 situation has also resulted in the problem of decreasing income due to difficulties in marketing crops. The Covid-19 pandemic certainly has an impact on the people in Situ Gede Village. However, there is one response from farmers in Situ Gede Village, namely Pak Dedi who considers that during the pandemic only a small impact is felt by farmers, because basically the activities of cultivating agricultural land continue.

In responding to this, the farmers of Situ Gede Village formed two responses, namely the co-adaptation response and resilience. According to Gallop´ın (2006) in Marseva et al. (2016) [15] defines adaptation as the most basic response system to change the system due to disturbances, or it can be interpreted that the process of a change is overcome by the response of the change, and according to Walker et al. (2004) in Marseva et al. (2016) [11], resilience is the capacity of the system to absorb disturbances and reorganize when changes occur so that they continue to produce the same function, identity structure, and reciprocity. The form of Co-Adaptation shown by the community includes adjusting expenditures to the financial situation at hand, or in other languages to save expenses so that they remain sufficient. In addition, in the case of farmers whose commodities are affected by changes in water conditions, the farmers change the crops on their land to plants that are more suitable for existing conditions. An example is a rice farmer who realizes that the water conditions are dry and immediately replaces the crops on his land with taro plants as a form of adaptation.

Furthermore, the form of resilience shown is reflected in the existence of farmers who have other jobs outside of their jobs as farmers. This was done to meet the needs when the pandemic hampered income from agricultural products. One example of an alternative job owned by Situ farmers in Gede is as a hoe coolie. As a result of the enactment of the PSBB, all building projects automatically stop operating which of course has an impact on the loss of side jobs that were owned before the pandemic (Kartika and Novitriani 2021) [2]. People make job shifts so that they can continue their lives during the pandemic.

In contrast to what the farmer in Situ Gede Village, Mr. Dedi, did, he said the impact during the pandemic was not so great that he continued to cultivate agricultural land and if there was no call, he moved to other agricultural land if needed. . Although the activities of cultivating agricultural land are still ongoing, of course there are vulnerabilities experienced by the people of Situ Gede Village. According to (Hahn et al. 2009) in (Nissa 2019) [20] Livelihood vulnerability is a condition when an individual or household experiences pressure and shocks to their livelihood sources, so that the sustainability of their livelihood is threatened. Another concept of vulnerability was also put forward by Adger (2000) in Sembiring and Dharmawan (2014) [21]. Vulnerability is a manifestation of social, economic, political, and environmental structures. Vulnerability can be seen from two elements, namely exposure to risk and coping capacity. For example, humans who are judged to have the ability or capacity to cope with extreme events, are less susceptible to risk. In other words, the more vulnerable a system is, the lower the institutional and community capacity to adapt and shape change. The vulnerability that occurs is where there is little impact, namely with the covid-19 pandemic, the number of farmers who cultivate the land is reduced so that a lot of land is not taken care of.

3 Conclusion

Situ Gede Village is located in an area that has a topography of an expanse consisting of settlements and forests. Landscape changes have occurred in Situ Gede Village, which was originally outside the forest area to be on the edge or around the forest area according to Village Potential data in 2014 and 2018. However, the people of Situ Gede Village do not depend on the forestry sector for their lives, but the agricultural sector. The change in the landscape in Situ Gede Village occurs due to the conversion of land functions so that agricultural land is decreasing.

The economic activities of the people of Situ Gede Village rely on the agricultural sector. The majority of farmers in Situ Gede Village are sharecroppers who come from outside the village. According to information from sources, the differences in the livelihoods of the people of Situ Gede Village both before and after Covid-19 did not show significant changes, only the most visible change was from the sales process which incidentally did not affect smallholders. When viewed in terms of wages earned, the Covid-19 pandemic has caused the wages of smallholders to decrease due to the policy of limiting activities outside the home such as the PSBB which also has an impact on declining sales of agricultural products. Therefore, farmers consume their own agricultural products to meet their household needs or become subsistence farmers.

The community, especially farmers in Situ Gede Village, responded to changes in the ecosystem and decreased income due to the Covid-19 pandemic by co-adapting in the form of budget adjustments according to the situation at hand. Changes in ecosystems such as water shortages make farmers replace plants that are in accordance with existing conditions. Another response is in the form of resilience shown by farmers earning a double income in order to meet their household needs. This proves that there is vulnerability in farmer households, especially in livelihood strategies.

References

[1] Amalia, R., Dharmawan, A. H., & Putri, E. I. K. : Perubahan Lanskap Ekologi dan Resiliensi Nafkah Rumahtangga Petani di Sekitar Hutan di Kalimantan Timur. Sodality. Jurnal Sosiologi Pedesaan, 3(3), 121-127 (2015)

[2] Kartika NY, Novitriani S. :Dampak Pandemi Covid-19 Terhadap Pola Pekerjaan Petani : Kasus Desa Andaman , Kecamatan Anjir Pasar ,. *J Kependudukan, Keluarga, dan Sumber Daya Mns*. 2(1):36–43. doi:10.37269/pancanaka.v2i1.83. (2021)

[3] BPS : Central Bureau of Statistics.Village Potential Data in 2011. (2011)

[4] BPS : Central Bureau of Statistics. Village Potential Data in 2014. (2014)

[5] BPS : Central Bureau of Statistics. Village Potential Data in 2018. (2018)

[6] BPS Central Bureau of Statistics. Bogor Barat District in Numeric 2020. Bogor(ID): Bogor District Central Bureau of Statistics.(2020)

[7] Satriyati E dan Biroli A :Kembali ke Rempah: Upaya Rumah Tangga Petani di Bangkalan Guna Peningkatan Kesehatan dan Penanggulangan Kemiskinan selama Pandemi Covid-19. Prosiding Seminar Nasional Penanggulangan Kemiskinan. 1(1): 168-191. (2021)

[8] Nur Sa'idaturrohmah LK.:Dampak pandemi covid-19 terhadap pendapatan petani legen di dusun sebero desa dalegan panceng gresik. 5:10–21. (2022)

[10] Hidayat, D., & Noeraida, N. (2020). PENGALAMAN KOMUNIKASI SISWA MELAKUKAN KELAS ONLINE SELAMA PANDEMI COVID – 19. JIKE : Jurnal Ilmu Komunikasi Efek, 3(2), 172-182. https://doi.org/10.32534/jike.v3i2.1017

[11] Walker, B., Holling, C. S., Carpenter, S. R., & Kinzig, A.: Resilience, Adaptability, and Transformability in Social–ecologycal System. Ecology and Society, 9(2), 5. (2004)

[12] Speranza, C. I., Wiesmann, U., & Rist, S.: An Indicator Framework for Assessing Livelihood Resilience in the Context of Social–Ecological Dynamics. Global Environmental Change, 28, 109–119. DOI: http://dx.doi.org/10.1016/ j.gloenvcha.2014.06.005 (2014)

[13] Bonati,S : Resilientscapes:PerceptionandResilience to Reduce Vulnerability in the Island of Madeira. Procedia Economics and Finance, 18, 513–520. DOI: https://doi.org/10.1016/S2212-5671(14)00970-8. (2014)

[14] Gallop ´ın,G.C. :LinkagesbetweenVulnerability,Resi- lience, and Adaptive Capacity. Global Environmental Change, 6(3), 293-303. DOI: http://dx.doi.org/10.1016/j.gloenvcha. 2006.02.004 (2006)

[15] de Groot, J., Mohlakoana, N., Knox, A.,& Bressers, H. :Fuelling women's empowerment? An exploration of the linkages between gender, entrepreneurship and access to energy in the informal food sector. Energy Research and Social Science, 28, 86–97. https://doi.org/10.1016/j.erss.2017.04.004 (2017)

[16] Sugiharto, A., Hartoyo, H., & Muflikhati, I. : Strategi nafkah dan kesejahteraan keluarga pada keluarga petani tadah hujan. Jurnal Ilmu Keluarga Dan Konsumen, 9(1), 33–42. https://doi.org/10.24156/jikk.2016.9.1.33 (2016)

[17] Widiyanto, Dharmawan, A. H., & Prasodjo, N. : Strategi nafkah rumahtangga petani tembakau di Lereng Gunung Sumbing: studi kasus di Desa Wonotirto dan Desa Campursari, Kecamatan Bulu, Kabupaten Temanggung. Sodality: Jurnal Sosiologi Pedesaan, 4(1), 91–114. https://doi.org/10.22500/sodality.v4i1.5851 (2010)

[18] Brigita, S :Strategi, Kerentanan, dan Resiliensi Nafkah Rumahtangga Petani di Daerah Rawan Bencana Banjir (Studi Kasus: Rumahtangga Petani Desa Kertamulya, Kecamatan Pedes, Kabupaten Karawang, Provinsi Jawa Barat). (2018)

[19] Scoones, I. : Sustainable Rural Livelihoods a Framework for Analysis. Analysis, 72: 1–22. https://doi.org/10.1057/palgrave.development.1110037 (1998)

[20] Hahn, M. B., Riederer, A. M., & Foster, S. O. : The Livelihood Vulnerability Index: A Pragmatic Approach to Assessing Risks from Climate Variability and Change— A Case Study in Mozambique. Global Environmental Cha- nge, 19(1), 74–88. DOI: http://dx.doi.org/10.1016/j.gloenvcha. 2008.11.002. (2009’

[21] Sembiring ST dan Dharmawan AH.: The Livelihood Resilience of Farmer Household In Rob Disaster-Prone Areas at Kampung Laut Subdistrict, Cilacap District. Sodality: Jurnal Sosiologi Pedesaan. 2(1): 30-42 (2014)