

# Livelihood Strategies of Cut Flower Farmer's Household During COVID-19 Pandemic

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**Abstract.** Since its appearance, the COVID-19 is already devastatingly impacting the world economy, including Indonesia. As a result, various economic activities and businesses were closed, and many workers were laid-off. An exception is the agricultural sector, which shows a steady or even increased share in Indonesia's economy. However, despite its good economic standing, one subsector in agriculture suffered during the pandemic, namely cut flower farming—the cut flower used as decoration at events. During the pandemic, people gathering and mobility had been restricted to contain the spread of the disease. Therefore, the measure has an impact on the demand for cut flowers and affects the condition of the farmers. This study uses a qualitative and quantitative method to explain the impact of the pandemic on cut flowers farmer households, specifically to investigate the changes in their livelihood strategies and the household's income structure. The data was obtained from 5 informants and 35 respondents of cut flower farming households. The results show financial and human capital changes to accommodate the most suitable livelihood strategies. Furthermore, the pandemic decreased income from the on-farm sector, while the revenue from the non-farm sector increased.

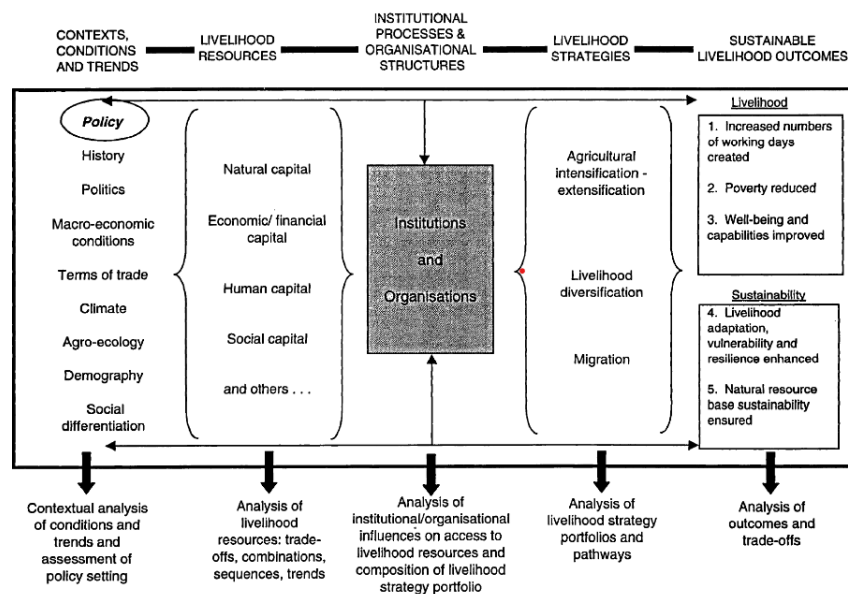
**Keywords:** Cut flower farmer, Covid-19 Pandemic, Income Structure, Livelihood strategies.

## 1 Introduction

The outbreaking disease caused by the Covid-19 virus has become a pandemic in the world for the past two years since the beginning of 2020. Various sectors supporting the economy have been affected by this pandemic. Some sectors affected by the pandemic include tourism, education, trade, and transportation. Although there was a decline in economic value in several sectors, a sector experienced an increase, namely the agricultural sector. The agriculture, forestry, and fisheries sectors experienced positive growth compared to other sectors, with a growth value of 2.59% in the fourth quarter of 2020 and 2.95% in the 1st quarter of 2021 [1]. The decline occurred in the agricultural sector in the fourth quarter of 2020. This happened due to the implementation of Large-Micro Scale Social Restriction in Indonesia,

which caused food availability in the consumer market to accumulate due to hampered buyers' access to the market. The closure of places of worship, restaurants, and tourist attractions due to the pandemic caused prices and demand for vegetables, fruits, and flowers to decline suddenly [2].

Large-Micro Scale Social Restrictions are carried out to break the spread of the Covid-19 virus. All kinds of events are limited to the point that they are prohibited from being held, such as weddings, birthdays, graduations, and events that usually wear flower decorations. Cut flowers are one of the commodities in the floriculture sub-sector and the horticulture sector. During the pandemic, the horticulture sector grew positively by 7.85% in the fourth quarter of 2020 [3]. This growth occurred due to the demand for vegetables and fruits during the pandemic. The increasing demand for vegetables and fruits is inversely proportional to the floriculture sub-sector, namely cut flower commodities during the pandemic, which experienced a decrease in export value of US\$ 3 million [4] due to reduced use of cut flowers at events. The decline in demand for cut flowers occurred in Indonesia and Europe, with a decrease in demand of more than 70% due to the lockdown [5]. Cut Flowers has end-level consumers who take advantage of it for weddings and circumcision, graduation, and others, while potted flowers are commonly used for office and hospitality needs [6]. Therefore, seeing the declining demand will disrupt the cut flower farmers' economic conditions. They were facing the pandemic outbreak that disrupted the marketing and economic balance of cut flower farmers' farming, cut flower farming households required to find strategies to continue to carry out their household needs in accordance with research [7] that individuals and groups carry out the livelihood strategy as a reaction to social and ecological changes in society. Long before that, Scoones had a concept of livelihood strategies at the individual, group, and household levels, which was depicted in the analysis framework in figure 1.



Imbalances or changes in circumstances that are usually motivated by history, politics, economic conditions, trade regulations, climate, ecological conditions, population to differences in social stratification will give rise to policies on problems in that context. In this pandemic, the economic situation caused by the disease outbreak has caused the emergence of large-scale social improvement policies that affect the economic context and trade regulation. Carrying out a living strategy usually tends to take advantage of assets owned by a household, assets or capital are divided into four according to [8] namely natural, financial, human and social capital. The utilization of living capital owned by a household either leads a household to the livelihood strategy they choose and implement. The livelihood strategies a farming household usually implements according to [8] are agricultural intensification and extensification, diversification of employment and migration. This research aims to see how households of cut flower farmers used living capital and living strategies before and during the Covid-19 pandemic. This research will also analyze changes in the household economy of cut flower farmers.

## **2 Method**

This research was carried out in Sudajaya Girang Village, Sukabumi District, Sukabumi Regency, West Java, from February 2021 to May 2022. The population and samples of this study were households of cut flower farmers as many as 35 households in Sudajaya Girang Village. The respondents in this research were cut flower farmers who at the same time concurrently served as the head of the family and who played a role in replacing the role of the head of the family. Respondents were 35 farming households that continued to grow cut flowers both before and during the pandemic, not seasonal flower growers. Some of the parties used as informants in this study were the head of Sudajaya Girang Village, the head of Gapoktan, Sudajaya Girang, the Head of BPP (Agricultural Extension Center), extension workers of Sudajaya Girang Village and middlemen in Sudajaya Girang Village. This research was conducted using quantitative and qualitative approaches, commonly known as mixed methods. In this research, a qualitative method was carried out first to get an initial picture of the impact of the pandemic on the households of cut flower farmers, then quantitative research with a questionnaire on the utilization of living capital and the strategy of living before and during the pandemic.

## **3 Result and Discussion**

### **3.1 The Impact of the Pandemic on The Households of Cut Flower Farmers**

The Covid-19 pandemic began to be felt by flower farmers towards their farming business from March to August. During those six months the demand for cut flowers declined so much that it didn't even exist in the first three months covid hit. The pandemic has not only affected cut flower farmers, but also affected middlemen and retailers. During the pandemic, some middlemen had debts to farmers due to the non-sale of interest in the market but were still deposited into middlemen by farmers. Changes in the price level during the pandemic occurred due to the decrease in demand for cut flowers, and this happened due to the impact of the implementation of the large social restriction The ban on holding events that usually require the decoration of cut flowers has decreased the demand for cut flowers. The Large Social Restriction also limits people's mobility to access public places such as markets so that middlemen and retailers cannot sell flowers that have been entrusted to them by farmers. Cut

flowers are a commodity with a stable price value that never falls but can potentially have a high price on certain big days such as religious days, new years, and the months usually crowded with weddings. At the beginning of the emergence of covid, cut flowers on farmers' fields were left like flower gardens until they withered and dried up, occasionally harvested but eventually discarded and used as fertilizer mixtures. The covid pandemic changed the economic order in the cut flower farming chain. This can be seen from the drastic price changes in cut flowers during the covid pandemic presented in table 1.

**Table 1.** Changes in the price of cut flowers before and during the Covid-19 pandemic in Sudajaya Girang Village in 2021

Flower	Price	
	Before pandemic	During pandemic
Gladiolous	Rp.1500-2000/stalk	Rp. 700/stalk
Hebras	Rp. 750-1000/stalk	Rp. 500/stalk
Chrysanthemum	Rp.7000- 10000/bunch	Rp.5000/bunch
Peacock	Rp. 3000-7000/bunch	Rp.700-1000/bunch
Tuberose/Sedap Malam	Rp.1500-2000/stalk	Rp. 700/stalk

The imbalance in economic conditions due to the impact of the pandemic has made farmers and households of cut flower farmers have to find ways to survive in these ambiguous conditions. Managing the living capital of a household is very important in a time like this, it concerns how households look for what loopholes to take advantage of and what to reduce. This living capital arrangement has led them to look for strategies to survive in pandemic.

The assistance coming from the government helps the economic conditions of the cut flower farmer's households. It's just that not all cut flower farmer households get assistance. The value of assistance is RP.300,000/month with an accumulation disbursement system every three months, five months, or every six months. The assistance provided by the government through villages and villages is considered uneven. This happens because, according to them, the aid provider has given it to households that were worthy before the pandemic. Considering the cut flower farming, which fell greatly during the pandemic and households also could not always rely on the assistance provided by the relevant parties, various ways were carried out by cut flower farmer households in order to continue their life.

### 3.2 Utilization of Livelihood Capital for Cut Flower Farmers During the Pandemic

Some households do not depend on just one job or one source of income to meet their household needs. It can also see how a livelihood strategy in the household is chosen by utilizing available resources. Ownership of livelihood capital proposed by [8] is grouped into four livelihood assets: natural capital, human capital, economic capital, and social capital. The level of

household ownership of cut flower farmers in this study has a period to compare before and during the pandemic.

A downward change occurred in financial capital ownership, from an average of 1.45 to 1.31 during the pandemic. This can be seen in table 2. The average score is the result of calculating the mean or average total value of the ratio of each capital and then categorized based on the level of ownership of little capital with a value of 1 and a lot with a value of 2. Financial capital has the lowest score of 1 of Rp. 0 both before and during covid- 19 hit, while the highest score with a score of 2 was Rp. 53,889,000 before the pandemic and Rp. 20,000,000 at the time of the pandemic. This indicates that the Covid-19 pandemic is very draining their movable property. Financial capital is calculated from the ownership of savings, gold owned, and the amount of rotating savings (re: arisan in Indonesia) /cooperative money and assistance received before and during the pandemic. Furthermore, changes occur in the average ownership of human capital. The Human Capital considers the number of family members who devote their time to on-farm, off-farm and non-farm fields. Moreover, the calculation of human capital looks at the time spent in flower farming activities, work outside flower farming, and household reproduction work, as well as the ownership of skills possessed by a cut flower farmer household. The change in the average value of human capital from 1.51 to 1.88 indicates an increase in the number of household members who work or the time spent working for household members during the pandemic

**Table 2.** The Average of livelihood capital ownership before and during the pandemic of cut flower farmer households in Sudajaya Girang Village in 2021

Livelihood Capital	The Average of livelihood capital ownership	
	Before pandemic	During pandemic
Natural Capital	1,11	1,11
Human Capital	1,51	1,88
Financial Capital	1,45	1,31
Social Capital	1,20	1,20

### 3.3 The Livelihood strategies of cut flower farmer's household before and during Pandemic Covid-19

The livelihood strategy carried out by a household refers to the utilization of the household's livelihood capital ownership. The livelihood strategies usually carried out in rural farming households include agricultural intensification and extensification, job diversification, and migration. In cut flower farmer households, intensification, diversification, and migration were still carried out before and during the pandemic. Agricultural extensification is not carried out on cut flower farmers considering the increasingly narrow agricultural land and more on the principle of farmers who do not have the financial capacity to manage, rent, or buy land during a pandemic that caused their household economic crisis. Implementing a strategy during a pandemic is based not only on the word utilization but also in the context of management. The management of living capital is intended to see which priorities need to be reduced and which have the potential to be utilized optimally. This happened to cut flower farming households when the pandemic occurred.

Agricultural intensification consists of modern technology in cutting flower farming, complete replacement of commodities with other commodities, implementation of a rotational system or intercropping, the use of family labor and the use of labor outside of family members, and the use of superior seeds/seedlings. The use of modern technology is not carried out by households of cut flower farmers and their farms. There has been a decrease in diversity in agricultural intensification. This result is the use of family labor, which was initially did 68.57% of households during the pandemic, but only 37.14% of families used labor outside the family. This was done to reduce input costs during the pandemic. The average worker used by cut flower farmers before the pandemic on their farms was 3-4 people per day. However, during the pandemic, the use of labor was reduced to only 2-3 people. In line with this, there was an increase in the use of labor in the family from 31.42% to 37.14. the addition of labor in the family and the reduction of labor outside the family, in this case, are household strategies for managing the resources they have.

Substitution of all commodities with cut flowers is not done for agricultural intensification during the pandemic. This is because cut flower plants are plants that harvest every week. This is also done because if the cut flower land is transferred to other plants, then they have to start from scratch by building a greenhouse and installing electrical installations. Some plants are long-lived plants that, if planted, will grow continuously until it is a shame if it is spent and has to spend a large amount of cost again to start it later. Some households have tried to grow other commodities by intercropping or intercropping on cut flower fields which are usually in paddy fields, such as gladiolus or tuberose for planting vegetables, but the result is a loss because the price of vegetables is bad when they are harvested.

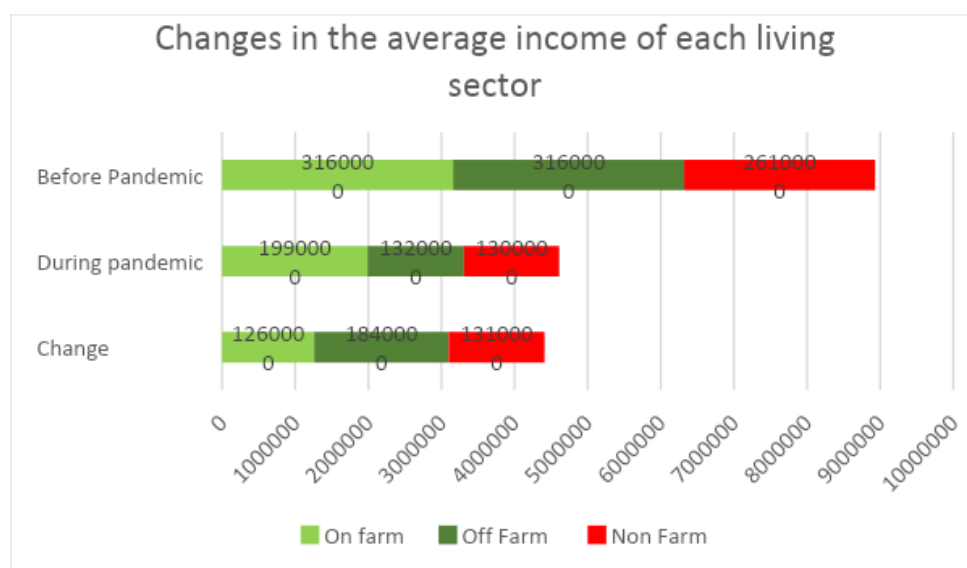
Job diversification other than planting cut flowers increased during the pandemic, with an increase of 17.4%. Some of the jobs chosen by cut flower farmer households during the pandemic included being farm laborers, construction workers, and selling ornamental plants both online and offline. Some household members also get the opportunity to work in the midst of the pandemic, although there are also some household members who have been laid off during the pandemic.

Five of the thirty-five cut flower farming households in Sudajaya Girang Village carried out the migration strategy before the pandemic. However, there was a decline of 2.86% during the pandemic. The decline during the pandemic occurred due to being laid off. Looking at the conditions in the field, several strategies applied outside of the agricultural concept are also carried out by cut flower farming households, namely by taking debt or selling/mortgaging their assets to survive.

### **3.4 The Changes in Household Income Structure of Cut Flower Farmers**

The Covid-19 pandemic mainly causes an imbalance in the economic situation from the individual, household to country level. Cut flower farming households before the pandemic relied on the on-farm sector by 60% for their primary income sector, followed by the off-farm sector with 22.86% and the non-farm sector at 17.4%. The off-farm sector is usually filled with activities such as farm laborers, buying and selling flowers, ornamental plants, seeds for fertilizers, and non-farm activities carried out by farmers such as construction workers, opening stalls, and factory workers. During the pandemic, there was an increase in household income in the off-farm and non-farm sectors, which can be seen in Figure 2. Income decreased in the on-farm sector in line with the declining demand for cut interest. Off-farm income increased,

contributed by households who had ornamental plants to sell, considering the very high price of ornamental plants during the pandemic. Furthermore, the proportion increased by 8.3% in the off-farm sector, the majority of which during the pandemic was contributed by household members who had the opportunity to work. Government assistance also affected increasing the proportion of income in this sector. The assistance provided by the government is in the form of cash direct assistance (re: BLT (Bantuan Langsung Tunai)), which is usually distributed on a three-month to five-month accumulation system with a monthly amount of RP.300,000.



**Fig.2.** Changes in the average income of each living sectors

## 4 Conclusion

1. The covid pandemic impacts cut flower farmer households, especially on the ownership of their living capital. Cut flower farming households felt the decrease in financial capital. In addition, there was increased living capital in the form of human capital during the pandemic.
2. Reducing workers outside the family, utilizing labor in the family, doing other work, planting commodities other than cut flowers, borrowing money from relatives to closest neighbors, and mortgaging and selling their resources are some of the strategies used by cut flower farmers during the pandemic.
3. The pandemic causes changes in the proportion of the household income of cut flower farmers. There was a decline in household income of cut flower farmers in the on-farm sector in line with the declining demand for cut flowers. The increasing proportion occurred in the off-farm and non-farm sectors. In the off-farm sector, the majority of which during the pandemic was contributed by household members who had the opportunity to work. Government assistance also affected increasing the proportion of income in off-farm sector.

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