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Livelihood strategies of farmers in Padang City during pandemic Covid-19

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Abstract. Pandemic Covid 19 has affected all life sectors. One of the sectors affected by this condition is the livelihood strategies of the farmers. This research aimed to identify the livelihood strategies of farmers in Padang City during Covid-19. The research was conducted using a survey method in three selected districts in Padang City, namely Kuranji, Pauh, and Koto Tangah. They were selected based on the most populated districts in Padang City. 150 households were interviewed, which represented 50 households of each district. Data were analyzed using descriptive quantitative analysis. The research results show that there are two kinds of livelihood strategies both on-farm and off-farm, which are survival strategy and collaborative strategy. Households that using survival strategies are characterized by limited natural resources, such as limited land, and do not have any permanent job in the off-farm sector. While households using collaborative strategy are characterized by the utilization of family labor in an informal off-farm sector such as small scale business and any work that relies on labor.

Keywords: livelihood strategies, off-farm, on-farm

1. Introduction

Livelihood strategies are defined as activities undertaken by households to provide a means of living. Based on its activity, they are divided into intensification, extensification (farm), diversification (off-farm), and migration) [1]. Then, based on household socioeconomic status, White (1991) was classified them into survival, consolidation, and accumulation [2]. Next, based on its activities, the livelihood strategies are grouped into natural resources, and non-natural resources [3]. Furthermore, from its approaches, they are classified into biophysical, political, economic social, cultural, and psychological [4].

To develop their livelihood strategies, households will utilize and combine any available sources and can be accessed easily. There are five resources, including natural resources/capital, financial resources/capital, physical resources/capitals, human resources/capital) and social resources/capital. When income sources that are from the off-farm activity are not enough for living, the off-farm strategies will be chosen.

Padang City has become the epicenter of the spread of Covid-19. Five of eleven districts in Padang City have been stated as a red zone area. Regarding this condition, the Government of Padang City



implementing a social distancing policy to limit people's activities since 19 March 2020. It has affected community economic activities, including farmers.

In normal condition, small scale farmers are a group of vulnerable which are getting worse with this policy. Lockdown is seen as a way to stop the transmission of Covid 19 has limited the mobility for people including farmers mobility. The lack of mobility from rural to urban areas will also affect agriculture activities.

This research is important to be conducted to identify the livelihood strategies of farmers in Padang City during Covid 19 both of farm and off-farm sector. It is hoped to be used by policymakers to strengthen the institution of farmers.

2. Research Methodology

This research used the survey method. The survey was conducted in the three most populated districts in Padang City: Kuranji district, Pauh district, and Koto Tengah. 50 households are randomly chosen from each district. Therefore, there are 150 households taken as samples and interviewed.

Research variables are:

1. On farm strategies including procurement and use of input, schedule for planting, fertilizing, the use labor, and farming pattern
2. Off-farm strategies including the use of family labor in trade, services, and other informal sectors as well as access to social assistance

Data were analyzed descriptively qualitatively by comparing them with previous research and relevant concepts.

3. Results and Discussion

3.1. Respondents profile in Padang City

Respondent's profile is not only given information on farmer's social condition but also an economic aspect. Farmers' profiles or characteristics also show a great influence on farmer capacity in farm management [5]. Table 1 shows the respondent's profile in Padang City.

Based on Table 1, it appears that the farmer's age in the Padang city was largely 53 years and older with formal education equivalent to elementary education. Age will affect the ability to think and the ability to accept innovation. Most farmers have had more than 21 years of experience with farming working status as the main job without any side jobs. Its means the economy of farmer's households is largely dependent on-farm activities. The empirical data of the research results by Manyamsari show that there is a significant correlation between age and experience. The experience will increase the ability of farmers to manage their agricultural land [6]

3.2. Livelihood Strategies

3.2.1 On-farm Livelihood strategies

On-farm Livelihood strategies are based on the control of human capital, natural capital, and physical capital, as can be seen in Table 2.

As can be seen from Table 2, mostly agricultural farming is managed by unskilled farmers. This can be shown by the data that 74% of respondents have never been attended any training, low level of educational background, and limited land farming. This is a common situation in agriculture in the rural area. Agriculture cannot be developed due to 90 percent of farming activity run by an individual. It is very difficult to move from rural agriculture into industrial agriculture since most farmers in Indonesia have very limited land areas [7]. However, rural agriculture always can survive to support agricultural development in any condition, including during the pandemic Covid-19. It is hoped that during pandemic

Covid-19, the food sector will be maintained to meet domestic stock. Not only from the supply aspect but also from the food distribution system, affordable food price, so that people no need to worry about domestic food supply.

Table 1. Respondents profile in Padang City

No	Characteristic	Total	
		No of people	percentage
1	Gender		
	a. Female	72	48%
	b. Male	78	52%
2	Age		
	a. 25 – 38 years	12	8%
	b. 39 – 52 years	61	41%
	c. 53 ≤ years	77	51%
3	Education background		
	a. Primary- Elementary school	81	54%
	b. High School	55	37%
	c. College- University	14	9%
4	Length of farming activity		
	a. 39 ≤ years	11	7%
	b. 22 – 38 years	17	11%
	c. ≥ 21 years	122	81%
6	Farming working status		
	a. Main job without any side jobs	91	61%
	b. Main job with side jobs	43	29%
	c. Side jobs	16	11%

Around 81% of farmers own land under private ownership. Land with private ownership makes it easier for farmers to make decisions regarding its management. For farmers, land ownership is one of the most important factors in resilience [8]. Most farms across the globe are family farms, and they vary in size < 1 Ha [9]. Generally, that small land is processed using only family labor. Humans and nature are part of the livelihood capital used by farmers in their livelihood strategies [10].

Capital is used for maintaining on-farm strategies during Covid 19. This is related to farming activities such as input procurement, establishing the planting schedule, plant type selection decision, additional family labor in farming, and its effect on farming pattern selection strategy. Table 3 shows the on-farm condition as follow:

Tabel 3 shows that input procurement, such as seeds, fertilizer, and farming tools does not affect. This is because farmers use local seeds which are always available at the farm store. Farmers who have very limited capital used seeds from the rest of the previous harvest either for their use or to be exchanged with other farmers. In terms of procurement fertilizer, it is found that farmers have no difficulties in buying the fertilizer. Farmers who plant palawija and horticulture, prefer to make their fertilizer by using compost. A small number of farmers do not use fertilizer for their plants because they think the soil is still fertile. On the other hand, all of the farmers who cultivate paddy bought fertilizer. They also bought farming tools such as hand tractors. The hand tractor can be used by other farmers who cultivate their land nearby by the rent it.

Table 2. Household control of on-farm Livelihood strategies in Padang City

No	Characteristic	Total	
		No of people	percentage
a.	<i>Human capital</i>		
	i. Attend training		
	a). Yes	39	26%
	b). Never	111	74%
	ii. Number of the family member who helps the farming activity		
	a). 1 – 2 people	127	85%
	b). 3 people	17	11%
	c). 4 ≤ people	6	4%
b.	<i>Natural capital</i>		
	i. Land area		
	a). 1,7 - 2,5 ha	9	6%
	b). 0,9 - 1,6 ha	36	24%
	c). 0,1 - 0,8 ha	97	65%
	ii. Land ownership		
	a). owned land	122	81%
	b). Rent	8	5%
	c). arable land	20	13%
	iii. Cultivated plants		
	a). rice	83	55%
	b). palawija	32	22%
	c). rice and palawija	35	23%
	iv. Type of livestock owned		
	a). Poultry	23	15%
	b). Goat	5	3%
	c). Cow/Buffalow	11	7%
	d) Fish	10	7%
c.	<i>Physical capital</i>		
	i. Farm road condition		
	a). Rocky but can be accessed easily	68	45%
	b). Good	77	51%
	c). Poor	5	3%
	ii. Irrigation system		
	a). Well maintained	87	58%
	b). Not well maintained	26	17%
	c). Rainfed	37	25%

Table 3. On-farm activities of farmers in Padang City during pandemic Covid 19

No	Activities	Total	
		No of people	percentage
1	input procurement		
	a. have an effect	17	11%
	b. does not have an effect	33	89%
2	Strategies on input procurement		
	i. seed procurement		
	a. buy	103	69%
	b. the rest of the harvest	39	26%
	c. the rest of the harvest from other farmers	8	5%
	ii. Fertilizer procurement		
	a. Buy	124	83%
	b. Make your fertilizer	14	9%
	c. does not use fertilizer	12	8%
3	establishing panting schedule		
	a. have an effect	5	3%
	b. does not have an effect	145	97%
4	additional family labor in farming		
	a. Yes	29	19%
	b. None	121	81%
5	Farming patterns		
	a. monoculture	115	77%
	b. polyculture	35	23%

The research result found that pandemic Covid19 does not affect the planting schedule. Farmers did not change it because they depend on agriculture commodities for their income. Farmers have no choice than have to cultivate on their land and they already have consumers for their products. This is one of the survival livelihood strategies. Survival strategies are implemented by farmers who have limited land areas and only work as farm labor with very low wages. People who use survival strategies are usually at the level of pre-prosperous status. This is a common condition that can be found in developing countries, where livelihoods are unstable and poor people are constantly worried about whether their families will have enough income or food [11].

The agriculture sector is referred to as a sector that accommodates workers with the status of “subtle unemployment” called as. This is because this sector has become the last alternative for workers to get a job. Covid-19 has affected any sectors where most of the people who usually work not in the agricultural sector, then they involve in the agricultural sector. In this case, the number has reached 19%. Most of the households doing farming patterns of monoculture. The reason is because of it is much easier to cultivate monoculture plants than polyculture planting patterns. Another reason is that the limitation of land is not suitable for polyculture farming. Although polyculture system has an advantage on minimize the risk of crop failure.

3.2.2 *Off-Farm livelihood strategy*

The livelihood diversifications are influenced by several factors, such as availability of key assets, maximization of return per unit of labor, risk management, strengthening the household asset basis,

opportunities, identity and vision of the future, and gender relationships [12]. Off-farm strategies are a form of economic activities carried out by members of households outside the agricultural sector. In general, the farmers had a low level of education so that there were not many opportunities can be accessed by the family members. It can be seen from the variety of jobs they work did not need special skilled requirement. However, since April 2020 when the Covid 19 has spread, the off-farm sector is affected. A detailed explanation can be seen in Table 4.

Table 4. Off-farm activities of family members during Covid 19 in Padang City

No	Activities	No of people	percentage
1	An off-farm Business condition during Covid-19		
	a. more difficult	121	81%
	b. Much better	5	3%
	c. Same as before Covid 19	24	16%
2	Type of work outside farming activity by the head of household		
	a. Labour	19	13%
	b. small scale trading	20	13%
	c. tutor, artist	5	3%
	d. private employee (non-permanent)	7	5%
	e. online driver	7	5%
	f. rent house business	1	1%
	Total	59	39%
3	Number of household members who work outside farming activity		
	a. 1 – 2 people	54	36%
	b. 3 – 4 people	14	9%
	c. 5 – 6 people	4	3%
	Total	72	48%

81% of households in Padang City stated that Covid 19 outbreak has made the situation to develop economic activities in the off-farm sector not easy. Although it is found that 16% of respondents stated that the situation is the same as before Covid 19. For farmers, the main important capital during Covid 19 is the family workforce. The optimization of the family workforce has become one of the alternatives to remain a sustainable life. Table 4 shows that 39% of the head of households have a job outside farming activities. This condition was called the “double income strategy”. This strategy optimizing the workforce by doing job diversification. The family workforce plays an important role in consolidation livelihood strategies. At the farm level, diversity of activities and off-farm income is an important factor in influencing the resilience of farmers [13]. The Livelihood strategies are carried out by combining various available livelihood assets [3]. And The livelihood system of rural communities has changed with an increase in sources of farms income [14]

4. Conclusion

During the pandemic of Covid 19, the farmers in Padang city applied an on-farm and off-farm livelihood strategy by optimizing their productive assets such as land and labor.

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