

STUDY OF FARMERS HOUSEHOLD FOOD SECURITY: CASE STUDY IN KEBASEN DISTRICT, BANYUMAS REGENCY

Kajian Ketahanan Pangan Rumah Tangga Petani: Studi Kasus Di Kecamatan Kebasen Banyumas

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ABSTRACT

The Covid-19 pandemic has impacted on various economic sectors, one of which is the agricultural sector. This important role of the agricultural sector often ignores the socio-economic conditions of the farmer's household. This research aims to analyze the degree of food security of farmer households during of the Covid-19 pandemic. The method used is the descriptive quantitative method using income and expenditure variables of farmers' households in the last month. The results showed that calculation of the structure of the household income of farmers is dominated by the structure of income from farming by 82.63 %, while the rest comes from non-farming by 17.37 %. Then for the expenditure structure of farmer households, non-food expenditures are greater than food expenditures, which is 59 % compared to food expenditures of 41 %. This gives an understanding that farmers' income is quite high and tends to spend their income to meet needs outside of food (non-food). By using indicators of food security, namely the level of food subsistence and the share of food expenditure, then farmer households in Kebasen District, Banyumas Regency are classified as high or food Unresistant during the Covid-19 pandemic.

Keywords: *expenditure, household food security, income*

ABSTRAK

Pandemi Covid-19 telah memberikan pengaruh diberbagai sektor ekonomi, salah satunya ialah sektor pertanian. Peran sektor pertanian yang penting ini seringkali mengabaikan keadaan social-ekonomi rumah tangga petani tersebut. Penelitian ini

bertujuan untuk menganalisis derajat ketahanan pangan rumah tangga petani di tengah pandemi Covid-19. Metode yang digunakan ialah metode deskriptif kuantitatif dengan menggunakan variabel pendapatan dan variabel pengeluaran rumah tangga petani dalam satu bulan terakhir. Hasil penelitian menunjukkan bahwa penghitungan struktur pendapatan rumah tangga petani didominasi oleh struktur pendapatan dari usahatani sebesar 82,63 persen, sedangkan sisanya berasal dari non usahatani sebesar 17,37 persen. Kemudian untuk struktur pengeluaran rumah tangga petani bahwa pengeluaran untuk nonpangan lebih besar dibandingkan dengan pengeluaran pangan yaitu sebesar 59 persen dibandingkan pengeluaran pangan sebesar 41 persen. Hal tersebut memberikan pengertian bahwa pendapatan petani sudah cukup tinggi dan cenderung membelanjakan pendapatannya untuk memenuhi kebutuhan diluar pangan (non-pangan). Dengan menggunakan indikator ketahanan pangan yaitu tingkat subsistensi pangan dan pangsa pengeluaran pangan (PPP), maka rumah tangga petani di Kecamatan Kebasen Kabupaten Banyumas tergolong tinggi atau tahan pangan ditengah pandemic Covid-19.

Kata kunci: *pengeluaran, ketahanan pangan rumah tangga, pendapatan*

INTRODUCTION

The Covid-19 pandemic not only has an impact on health, but also has an impact on various aspects of socio-economic life, including the fulfillment of food needs (Amelia & Sagaf, 2020). To meet food needs, domestic production holds important role even though there is an option to import. However, in a pandemic, imports can be hampered because a number of countries hold back food exports to meet their domestic needs. Stability of prices for basic food needs cannot be separated from adequate supply. Availability of basic foodstuffs in a pandemic condition plays an important role. The government needs to ensure the availability of food in the midst of a pandemic. (Tim Nasional Percepatan Penanggulangan Kemiskinan, 2020). The agricultural sector is in the spotlight of discussion because it is related to food security. During the COVID-19 pandemic, food security is a must for the government to pay attention to to avoid a food crisis (Yuana et al., 2020).

During this pandemic, farmers faces various problems (Gloria, 2020). Deputy for food and agriculture coordinator, Ministry for Economic Affairs Coordinator, Ir Musdhalifah Machmud, MT said that food items experienced a 0.13 % deflation as a result of public demand degradation. Food consumption also decreased by 20 %. Meat consumption is even predicted to decrease by more than 30 %. She said that it was anticipated with incentives to strengthen farmers and food supply policies for the community.

The challenges of food supply in 2020 and beyond, do not only come from the Covid-19 pandemic which has the potential to cause disruption to the production and distribution of food and agricultural products to meet the needs of the community (Ferdin, 2020). Challenges also come from the

prediction of a drier dry season starting on June in agricultural production centers, particularly in parts of Sumatra, Java, Kalimantan, South Sulawesi and Bali (Gloria, 2020). Farmers are often considered as one of the professions that are considered safe in this pandemic era, but either directly or indirectly. Such as decreasing demand for agricultural products, constrained transportation rates, or delays in the distribution of fertilizers and seeds, besides this, farmers are also must be able to adjust and maintain their health amid this pandemic (Kartika & Novitriani, 2021).

The challenge of food security in the farmers environment is very urgent, considering the farmers must also be able to maintain their level of welfare while also being a provider of agricultural products. The occurrence of this restrictions policy in the context of handling Covid-19 also has an impact on the decreasing in sales of farmers' products due to decreased demand. (Tim Nasional Percepatan Penanggulangan Kemiskinan, 2020), Besides that, distribution hampered due to restrictions also has other impacts (Sadiyah, 2021). Certainly, this has an impact on decreasing farmers' income amid the pandemic. A person's consumption is directly proportional to his income (Suyudi et al., 2020). More income, more expenditure for consumption. So to get consumption, a person must have an income, the amount of a person's income will determine the level of consumption (Andrianingsih & Asih, 2021; Sukirno, 2010). Besides the uncertain weather, the availability of fertilizers, especially subsidized fertilizers, is in limited stock now and can only be accessed by those farmers who are registered and have a farmer card, and even then with a limited quantity that is adjusted to the amount of land ownership (Sudaryanto & Suharyono, 2020). Infrequently, many farmers complain that they cannot access this subsidized fertilizer because of their nature who only owns little land, or they only rent it. Based on that case, researchers think that this is a complex matter to be investigated more deeply.

During the Covid 19 pandemic, the food sector faced major problems such as the increasing number of food insecure villages (Masniadi et al., 2020). This is because the expected food pattern has not been achieved and there are still areas that are included in the priority category of food insecurity status (Jusriadi et al., 2020). Various ways have been carried out by the community, ranging from limited land use such as hydroponics, aquaponics and polybags as well as home yards (Thesiwati, 2020).

Kebasen sub-district is a sub-district where most of them are farmers who are spread in almost all sub-districts areas. The following is the distribution of farmer households in Kebasen District by village (Badan Pusat Statistik Kabupaten Banyumas, 2019).

Table 1. The Amount of Farmers Household (Including Rice field Household, Ranch, Fishery)

No	Village	Rice filed Household Amount (In family)
1	Adisana	1,937
2	Bangsa	1,669
3	Karangsari	1,068
4	Randegan	2,807
5	Kaliwedi	1,923
6	Sawangan	847
7	Kalisalak	3,222
8	Cindaga	3,407
9	Kebasen	2,086
10	Gambarsari	1,010
11	Tumiyang	485
12	Mandirancan	1,326

Farmers are one of the professions that are still able to stand in the pandemic and have a very important role to ensure the achievement of welfare. On the other hand, the level of resilience of farmers household is a serious problem in pandemic (Rosyadi & Purnomo, 2012). Farmers' food security is still showing problems in addition to the pandemic as well as other factors. Various kinds of agricultural commodities are available in Kebasen. The challenge now is how they can survive and maintain their welfare in the pandemic (Syahyuti & Aldillah, 2020). Farmers household can focus on meeting family welfare and how they have the ability to meet their needs for both food and non-food needs. Therefore, it becomes significant when the food security of farmer households in Kebasen District becomes something that needs to be investigated during a pandemic related to the farmers survival.

RESEARCH METHOD

The object of this research is the household of rice farmers outside of animal and fishery farmers in Kebasen District, Banyumas Regency. The data consists of primary data and secondary data. Primary data was obtained by using a questionnaire interview technique to 100 respondents, namely farmer households in Kebasen District. Meanwhile, secondary data comes from BPS data and other relevant sources. The primary data collected aims to analyze the degree of farmer households food security. The data used include:

The calculation of the income structure of the farmer's household is by sum up the amount of income received by the farmer's household both from

farming and income from outside the farm (Amirian et al., 2008). Mathematically, formulated as follows:

$$Pd = Pd_{on} + Pd_{off}$$

Where Pd is total of household farmer income (Rupiah), Pd_{on} is income from farming (Rupiah) and Pd_{off} is income from outside of farming (Rupiah).

The calculation of the expenditure structure of a farmer's household is the sum of several costs incurred by the household for consumption activities carried out by all members of the household within a certain time, both used for food consumption activities and non-food consumption activities (Sarni & Sidayat, 2020). Food consumption activities such as purchasing rice and vegetables, while non-food activities such as education costs and health costs. The total expenditure of farmer households can be known by calculating food and non-food expenditures. The formula used is:

$$TP = Pp + Pn$$

Where TP is Total farmer's household expenditure (Rupiah), Pp is food expenditure (Rupiah), and Pn is non food expenditure (Rupiah)

The third is the indicator of food security of farmer households, which is seen with the approach of household accessibility to food and indicators of food security quality of farmer households. Food affordability indicators at the farmer household level in measuring food security at the household level are measured by the ease of a household in obtaining food as measured by purchasing power. Farmers' purchasing power for food is calculated using the formula (Yusuf et al., 2018) as follows:

$$DB = \frac{TP}{(TE - BU)}$$

Where DB is the purchasing power of farmer households, TP is total farmer household income from all sources (Rupiah), BE is total farmer's household expenditure, and BU is farming costs.

Meanwhile, the quality of food safety is seen by the share of food expenditure, which is the ratio of expenditure for food shopping and total household expenditure in a month. Households with a high share of expenditure on food indicate that the household has a low level of security, on the other hand, if a household with a low share of expenditure indicates that the household has high food security. The share of food expenditure is calculated using the following formula:

$$PPP = \frac{PP}{TP} \times 100\%$$

Where PPP is farmer's household expenditure market share (persen), PP is food expenditure (rupiah), and TP is total farmer's household expenditure (rupiah).

RESULT AND DISCUSSION

Food security is a condition of meeting food needs for households which are reflected in the availability of sufficient food, both in quantity and quality, safe, equitable, and affordable. Thus, an area is said to be successful in the development of food security if there is an increase in food production, smooth food distribution and consumption of safe and adequate nutrition for the whole community (Rahmawati et al., 2020). Food security consisted 3 subsystems, that are (1) food availability, (2) food access, (3) food utilization (Adriani & Wirjatmadi, 2012).

Farmer Household Income Structure

The farmer household income in Kebasen District, Banyumas Regency is the amount of money earned from work in the last month. Based on Table 2, the respondents' occupations are dominated by those whose main income is as farmers, and on the other hand, farming is a side business from non-farming jobs such as labor, trading, or as employees in companies. The following is the average monthly income of a farmer's household:

Table 2. Average Income Monthly Farmer's Household in Kebasen District

Source of Income	Total of Income (Rupiah)	%age (%)
Farming Business	2,290,400	82.63
Non Farming Business	481,500	17.37
Total	2,771,900	100.00

Table 2., shows that 82.63 % of farmer household income comes from farming, which is Rp. 2.290.400 per month. This is because most of the people's livelihoods in the Kebasen sub-district are farmers, supported by land scattered in almost all villages in the Kebasen sub-district. Based on the results of the study that only 17.37 % came from non-agricultural work, which was represented by 28 % of the respondents. Farming motives carried out by farmers in Kebasen Sub-district are dominated by those who are aware of farming, the meaning is that they make farming their main business, but they pay attention to the diversity of the agricultural commodities they plant, so it is almost certain that they harvest something every day. This is done in order to have a regular income every day (Rahmawati et al., 2020). Of those who produce rice, not infrequently there are only motives for family supplies, no commercial motives, although there are not many types of respondents like this.

Structure of Farmer Household Expenditure

This household expenditure can be seen from two different sides, namely household food expenditure and non-food expenditure. This is important to know because, in this study, food security is the main thing for farmers. Based on Table 10., household food expenditures are dominated by rice, vegetables, and cooking oil which are 34.27 %, 14.60 %, and 11.05 %, respectively. This provides information that most of their agricultural products are commercialized, but they also spend their income on buying almost the same commodities, although it is not at such a large level compared to other types of food expenditure.

Table 3. Average Expenditure Monthly of Farmer's Household

Types of Food Consumed	Average Food Expenditure (IDR)	%age (%)
Rice	210,680.00	34.27
Fish	26,367.35	4.29
Meat	44,604.17	7.26
Egg	38,570.00	6.27
Vegetables	89,740.00	14.60
Fruits	21,680.00	3.53
Cooking Oil	67,960.00	11.05
Nuts	7,820.00	1.27
Coffee	44,760.00	7.28
Spices	59,300.00	9.65
Drink	3,300.00	0.54
Total	614,781.51	100.00

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Table 4. Average Non Food Expenditure of Farmer's Household in Monthly

Types of Non-Food Consumed	Average Non-Food Expenditure (IDR)	Percentage (%)
Cost of Education	50,600	5.80
Transportation	89,200	10.22
Cost of Health	132,000	15.13
Cloth	80,000	9.17
Tax	37,500	4.30
Cigarette	151,176	17.33
Internet or cell phone	84,154	9.65
Social	136,714	15.67
Electricity	44,260	5.07
Gas dan Fuel	66,837	7.66
Total	872,441.34	100.00

Farmers' Household Food Security Indicators

Farmer's Household Food Availability Indicator

Household accessibility to food is seen from the ease with which households obtain food as measured by household purchasing power, the higher the purchasing power of farmers, the better the level of food security. (Arida et al., 2015; Rahmawati et al., 2020; Yusuf et al., 2018). Based on Table 5., that 100 % of the responses have high purchasing power ($DB > 1$) means that farm households have the ability to meet needs beyond what they produce. Besides that, there are also farmer households who have other jobs because they consider farming a side business for them and the results from farming are used for personal consumption, not for commercial purposes. Other forms of business include cattle farm, trading in wet market, construction workers, as well as collectors of agricultural products and some are civil servants.

Table 5. Farmers Household Food Accessibility Indicators

Category	Notes	Total Farmer Family (Per individu)	Percentage (%)
DB<1	Low	0	0
DB=1	Medium	0	0
DB>1	High	100	100
Jumlah		100	100

Indicators of food safety quality for farmers' households

The quality of household food can be seen based on the share of expenditure for food. The share of food expenditure is the ratio between food expenditure and total monthly household expenditure. The share of food expenditure can be used as an indicator to measure household food security. If the share of expenditure > 60 % then the household is food Unresistant, but if the share of food expenditure 60 % then the household is food Unresistant (Maxwell et al., 2000).

Table 6. Food Safety Quality Indicators for Farmers' Households in Kebasen District

Category	Notes	Total Farmer Family (Per individu)	%age (%)
PPP < 60%	Food Resistant	82	82
PPP ≥ 60%	Food Unresistant	18	18
Jumlah		100	100

Based on Table 6., there is 82% of the respondents are categorized as food resistant farmer households. This is indicated by the PPP value <60 %, which means that the quality of food consumed by farmer households in the Kebasen District is quite diverse and complete, such as carbohydrates, vegetable fiber, vegetables, grains, and fruits. Thie food diversity shows that farmer households have the flexibility to allocate their spending and existence in their social life. Various kinds of needs for consumption are quite guaranteed both in terms of nutrition, vegetables, and fruits even though it has to meet the needs in the pandemic.

On the broad outline, it can be seen that by looking at the two indicators that have been used in this study, the following conclusions can be drawn: a) judging from the relatively high purchasing power indicator, this can be seen because most of the research respondents during this pandemic period were preferred to consume the results of their farming, especially rice, although some farmers intentionally plant rice, not for commercial purposes, and b) judging from the market share indicators, food expenditure is relatively low at 82 %, which means the quality of food consumed by farmer households already diverse enough so that their food needs are fulfilled, therefore part of their income can be allocated to meet other needs outside of food (non-food). Thus, in general, the resilience of farmer households in Kebasen District, Banyumas Regency is relatively high.

CONCLUSION AND SUGGESTION

Conclusion

Kebasen District is one of the sub-districts in Banyumas Regency which has a fairly large agricultural land. The structure of farmer household income is dominated by income structure from farming by 82.63 %, while the rest comes from non-farming. Then for the expenditure structure of farmer households, that non-food expenditure is greater than food expenditure, which is 59 % compared to food expenditure of 41 %. This gives an understanding that farmers' income is quite high and tends to spend their income to meet needs outside of food (non-food). By using food security indicators, namely the level of food subsistence and the share of food expenditure, farmer households in Kebasen District, Banyumas Regency are classified as high or food insecure.

Suggestion

1. Farmers are expected to maintain agricultural land and productivity, especially during this pandemic so they can ensure household welfare.
2. The government should provide support to farmer households in the form of the allocation of fertilizer subsidies and others to increase farmers' income.
3. There is a need for further discussion to find out how the nutritional adequacy of this farmer's household is

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