

The Study of Household Food Security Levels in Palangka Raya City

Jhon Wardie*, Masliani and Tri Yuliana Eka Sintha

Study Program of Agribusiness, Faculty of Agriculture, University of Palangka Raya

(Received March 21, 2019; Accepted April 18, 2019; Published May 7, 2019)

ABSTRACT. This study aims to examine the level of household security in Palangka Raya City. This study was carried out in the area of Palangka Raya City which covers five subdistricts. Those include Menteng, Pahandut, Kereng Bangkirai, Tumbang Tahai, and Petuk Bukit. In each sub-districts (*kelurahan*), 10 household respondents were determined as samples, so the total samples were 50 household respondents. The research data collected were from primary and secondary data. The results of the study revealed that the level of household food security in Palangka Raya City was categorized as food resistance. This category was obtained by using the portion of total food expenditure which did not exceed 60% (52.43%, categorized as low), and was sufficient energy consumption exceeding 80% of the national recommendation (97.22%, categorized as sufficient).

Keywords: *food security, household, expenditure, Palangka Raya*

JEL Classification: D19, Q18, R20

INTRODUCTION

Food is the most basic human need in living their lives, so it can be called as the right of human life. The right to obtain food is one of the human rights, as it is stated in the article 27 of the 1945 Constitution and in the Rome Declaration of 1996. Being fully aware of this fact, the Government of Indonesia issued Law No. 7 of 1996 concerning Food (UU 7/1996, 1996). Then, it is stated in the Government Regulation of the Republic of Indonesia Number 68 of 2002 (PP 68/2002, 2002) that food security is very important in the framework of national development to shape Indonesian human beings who are qualified, independent and prosperous through the realization of adequate, safe, and qualified food availability. It is nutritious, diverse and spread equally throughout Indonesia and is affordable by the people. The definition of food security is more refined and expanded in scope as in Law Number 18 of 2012 concerning food (UU 18/2012, 2012), that food

security is a condition of fulfilling food for the state to individuals which is reflected in the availability of sufficient food both in quantity and quality, safety, diversity, nutrition, evenly distribution and affordability. It is not in contradiction with the religion, beliefs, and culture of the community, be able to live a healthy, active and productive life in a sustainable manner. Some of the results of research on food and food security are done by Suharyanto (2017) and Asmara, Hanani, & Mutisari (2012).

Food problems are the condition of excess food, lack of food and/or inability of households to meet the food needs. There are still poor people, food insecure areas, unbalancing food production between regions and times, different resource potentials in each region that will affect the distribution and supply of food. This condition, in the end, causes the access to food for each individual household that will be lower if the local food availability is limited, markets are not available, transportation is limited, income is low, education is limited, unemployment is high, and local culture is inadequate. Therefore, the role of affordable and distributed food distribution at all times would have an effect on increasing food

* Corresponding author email: jwardie@agb.upr.ac.id,
ISSN 2615-6075 online; ISSN 2615-6946 print
@UWG Press, 2019
OJS <http://publishing-widyagama.ac.id/ejournal-v2/index.php/jsed/>

access for each household in fulfilling its food sufficiency.

According to Suhardjo (1996), the condition of household food security can be reflected by several indicators: (i) the level of damage to crops, livestock, and fisheries; (ii) the decrease in the food production; (iii) the level of food availability in the household; (iv) the proportion of food expenditure to the total expenditure; (v) the fluctuations in the main food prices that are commonly consumed by households; (vi) the changes in social life, such as migration, selling/mortgaging property, and loan fund; (vii) the state of food consumption, for example eating habits, quantity and quality; and (viii) the nutritional status. In relation to indicators 7 and 8 above, Kodyat (1997) also argues that food security can be seen from the consumption of household food and the condition of community nutrition.

Furthermore, Soetrisno (1997), revealed that the indicators that can be used to determine the condition of food security are: (i) the household food security index number; (ii) the rate ratio between stock and consumption at various regional levels; (iii) the expectation of food pattern scores for levels of availability and consumption; (iv) the food safety conditions; and (v) the institutional situation of community food reserves and government food reserves compared to estimated needs.

"Other studies related to household food security have been carried out by Rosyadi & Purnomo (2012); Rifai, Supardi, & Hastuti (2012); (Ginting, Utomo, & Yulifianti, 2014); Arida, Sofyan, & Fadhiela (2015); Mulyo, Sugiyarto, & Widada (2016); Fiisabilillah & Maulana (2017).

Palangka Raya is the capital city of Central Kalimantan Province that has an area of 2.854 thousand km² and administratively consists of five sub-districts (*kelurahan*). Those are the sub-district of Menteng, Pahandut, Kereng Bangkirai, Tumbang Tahai, and Petuk Bukit (BPS Palangka Raya, 2017). The city of Palangka Raya is a place where the population resides and the various activities of the population that take place vary greatly influencing the pattern of space in the city as a whole as well as the part of the city. The growth and development of the city are from various aspects of

life, such as the pace of development, the population growth and the dynamics of economic activities which cannot be avoided. These conditions certainly have positive and negative impacts on the people of Palangka Raya City, especially that of related to increasing food security.

The city of Palangka Raya with its diversity of natural and potential resource should have a large enough potential agricultural land, but it is not managed optimally. In addition, the conversion of agricultural land into non-agriculture goes along with regional development needs. Of course, this condition can create the potential for food insecurity in the city of Palangka Raya.

The problem of food insecurity requires a serious and comprehensive policy. The food insecurity is not only concerned with aspects of food availability but also food access and food absorption. The potential food insecurity can be caused by the low of food production. Other indicators of food insecurity are the percentage of poor people and families without access to electricity, the number of health facilities and malnourished people, the under-five and maternal mortality rates, the access to road transportation, the number of shops/stalls, and the percentage of illiterate women.

In this regard, this research aims to study the level of household food security in the city of Palangka Raya.

RESEARCH METHOD

The basic method used in this study was a descriptive analysis method, which systematically solved actual problems. The data were obtained and collected from the field, then they were compiled, tabulated, analyzed and explained both qualitatively and quantitatively.

The research applied a multistage sampling method which was divided into two parts, that included: (i) stage 1, to purposively select the location of the study in subdistrict (*kelurahan*); and (ii) stage 2, to select respondents (individual samples) by simple random sampling in the selected location through the stage 1.

In stage 1, it was selected five sub-districts (*kelurahan*) in the area of Palangka Raya City. They were Menteng (Jekan Raya), Pahandut, Kereng Bangkirai (Sabangau), Tumbang Tahai (Bukit Batu), and Petuk Bukit (Rakumpit).

In stage 2, in each sub-districts (*kelurahan*), 10 households were determined as samples, so the total sample was 50 households. The total sample was in accordance with the opinion of Roscoe in Sugiyono (2011), who stated that the appropriate minimum sample size in a survey research is 30.

The data collected consisted of two types of data sources. Primary data, the main data, were obtained directly through interviews by using a questionnaire to respondents who had been determined by simple random sampling. It is expected to provide a picture of data and information directly on variables concerning food and non-food expenditure. Meanwhile, secondary data were obtained through documents and archives from various relevant agencies as well as the references to other literature. It is expected to add data and information related to the problems being studied.

This study used quantitative and qualitative approaches. To answer the objective of the study of the level of household food security in the city of Palangka Raya, it was carried out by the Jonsson & Toole (1991) method. In this case, households were grouped into 4 (four) categories, that included: food security, food vulnerability, lack of food, and food insecurity (Maxwell et al., 2000). The detail is as shown in Table 1.

Table 1. Categories for Household Food Security¹

Energy Consumption By Adult Equivalent Unit	A portion of Food Expenditure	
	Low (<60% of Total Expenditure)	High (≥60% of Total Expenditure)
Sufficient (>80% of Energy Sufficiency)	Food Resistance	Food Vulnerable
Deficient (≤80% of Energy Sufficiency)	Lack of Food	Food Insecurity

¹According to Jonsson & Toole (1991)

Determining the level of household food security in Palangka Raya City was done by measuring the indicators of the adequacy of energy consumption as a proxy for nutritional variables and the portion of expenditure for food as a proxy for economic variables. The amount of cutting point for

the adequacy of energy consumption was 80% of the recommended per unit of adult equivalent (2700 kcal/capita/day), which was equal to 2100 kcal/capita/day.

Furthermore, the cutting point for the portion of food expenditure was set at 60% of total household expenditure. The value of energy consumption in this study was the energy contributed by rice food consumed and referred to the provision that in every 100 grams of rice there is an energy of 360 calories (Maxwell et al., 2000)

The food expenditure portion is the ratio of food expenditure to total household expenditure, formulated as follows:

$$PPPi = PPi / TP$$

in which:

$$\begin{aligned} P P P i &= \text{Food expenditure portion to } i \\ P P i &= \text{Food expenditure to } i \text{ (} i = 1, 2, 3, \dots, n \text{)} \\ T P &= \text{Total of household expenditure} \end{aligned}$$

Based on the statistics data in 2016, the number of family members in each household in Palangka Raya City ranged from 3 to 4 people. The number of household members is certainly one of the determinants of the amount of expenditure to meet these household food needs. It can be figured from the percentage of the average expenditure per capita per month for food and non-food consumption, as shown that it had fluctuated from 2012 to 2015 (Table 2).

Table 2. The proportion of Food and Non-Food Expenditures in the City of Palangka Raya in 2012 – 2015

	2012	2013	2014	2015
Food (%)	49.86	45.47	44.68	47.29
Non Food (%)	50.14	54.53	55.32	52.71

Source: (BPS Palangka Raya, 2016)

RESULT AND DISCUSSION

Table 2 indicates that the average per capita expenditure by month according to food groups in Palangka Raya City in 2015 was Rp. 573,546,- (47.29%). It was used to meet the consumption of food and beverages, fish and shrimp and groups of grains. Meanwhile for non-food group expenditures was Rp. 639,214,- (52.71%), in which most of it was used for housing and household facilities. Special expenditures for food and beverages

tended to increase every year. In 2012, it was 14.10% of total food expenditure and rised by 30.39% in 2015.

The results of the study in five subdistricts on Palangka Raya City in the year of 2018, concerning the percentage of average per capita expenditure by month for food and non-food expenditure are presented in Table 3.

Table 3. Food and Non-Food Expenditures of Household in Palangka Raya City

Sub-district	Food Expend- iture	Total Expend- iture	Percentage of Expenditure	
			Food	Non-Food
	-- million rupiah --		----- % -----	
1. Menteng	1.994	5.555	35.9	64.1
2. Pahandut	2.592	4.171	62.1	37.9
3. Kereng Bangkirai	3.049	6.573	46.4	53.6
4. Tumbang Tahai	2.109	4.439	47.5	52.5
5. Petuk Bukit	2.633	4.312	61.1	38.9
Palangka Raya	2.475	5.010	52.4	47.6

Table 4. Energy Consumption of Household in Palangka Raya City

Sub-district	Energy Consumption	Percentage ¹
	kcal/capita/day	%
1. Menteng	1792	85.3
2. Pahandut	2342	111.5
3. Kereng Bangkirai	1838	87.5
4. Tumbang Tahai	1712	81.5
5. Petuk Bukit	2525	120.2
Palangka Raya	2042	97.2

¹Compared to the recommended national energy consumption of 2100 kcal/capita/day

Table 3 displays that the average per capita food expenditure in Palangka Raya City was 2.475 million rupiahs (52.4%) of the total expenditure. This can be categorized as low because it is less than 60% of the total expenditure. Furthermore, it is known that there were two sub-districts whose food expenditure portion was in the high category, that included sub-district of Pahandut (62.14%) and Petuk Bukit (61.07%). Meanwhile, food expenditure is considered adequate if the proportion is less than 60% of the total expenditure because it reflects the basic food needs that have been fulfilled. As a result, the remaining expenditure can be used to meet non-food expenses, such as education, health, recreation and so on.

In addition, the assessment of food security can also be viewed from the energy consumption. The energy consumption of respondents in five

subdistricts in Palangka Raya City had approached the recommendations for energy consumption at the national level, as shown in Table 4.

Table 4 illustrates that household energy consumption was 2042 kilocal/capita/day (97.22%) from the recommended national energy consumption, so it is categorized as sufficient. Based on the XIth Widyakarya Nasional Pangan dan Gizi (WNPG) forum in 2018, it was stated that the indicator of the level of energy availability or the Nutrition Adequacy Rate (RDA) was 2100 kcal/capita/day. Comparing with NBM data of the city of Palangka Raya in 2016, the amount of energy consumption in 2018 decreased because the number of calories available for consumption by the residents per capita per day in 2016 was 2963 kcal/capita/day.

The detail measurement of the level of household food security was carried out by using the Jonhsson and Toole (1991) method. In this case, households were grouped into four categories namely: food security, food vulnerability, lack of food, and food insecurity (Maxwell et al., 2000). Determining the level of household food security was done by measuring the indicators of the adequacy of energy consumption as a proxy for nutritional variables and the portion of expenditure for food as a proxy for economic variables.

The amount of cutting point for the adequacy of energy consumption was 80% of the national recommendation (2100 kcal/capita/day) and the cutting point for the portion of food expenditure was set at 60% of the total household expenditure. The results of the household data analysis from five sub-districts are presented in Table 5.

Table 5 shows that the level of household food security was categorized as food resistant. This category was obtained because households using the portion of total food expenditure did not exceed 60% or equal to 52.43% (categorized as low), and in sufficient energy consumption exceeded 80% of the recommendation or 97.22% (categorized as Sufficient). This means that the households consume food, both in quantity and quality, are diverse, nutritiously balanced, evenly distributed and safe. It further indicates that the food consumption was not conflicted with the religion,

beliefs and culture of society to achieve a healthy, active and sustainable productive life.

Table 5. Level of Food Security of Household in Palangka Raya City

Sub-district	Energy ¹ Category of Food Expend- iture	Adequacy ² Category	Category of Food Security Level
1. Menteng	low	sufficient	food resistant
2. Pahandut	high	sufficient	food vulnerable
3. Kereng Bangkirai	low	sufficient	food resistant
4. Tumbang Tahai	low	sufficient	food resistant
5. Petuk Bukit	high	sufficient	food vulnerable
Palangka Raya	52,43% (low)	97,22% (sufficient)	food resistant

¹ based on economic variable proxy

² based on nutritional variation proxy

It can be seen that there were three sub-districts whose household food security was categorized as food resistant, including subdistrict of Menteng, Kereng Bangkirai and Tumbang Tahai. The two remaining of the subdistricts were categorized as food vulnerable. Those were subdistrict of Pahandut and Petuk Bukit. In the two sub-district regions, although the energy consumption of the household is sufficient (> 80%) even including the two highest in the Palangka Raya City area, the portion of food expenditure is also more than 60%. This means that more than 60% or most of the income was used up to meet food needs alone.

Given the results, there are many needs to remain a concern and supervision of the local government in realizing an increase in the food security. Such areas as Kelurahan Pahandut (Pahandut Subdistrict) and Kelurahan Petuk Bukit (Rakumpit Subdistrict) which were categorized as high in the food expenditure portion and also as food vulnerable reveal important phenomena to address attention. Thus, the Palangka Raya City Government needs to collaborate with various related parties in strengthening and stabilizing the food security system, especially in implementing programs of food availability and reserve subsystem, food distribution and access subsystems, as well as food consumption and local food diversification subsystems.

CONCLUSION AND SUGGESTION

The proportion of food expenditure per capita in Palangka Raya City was 52.43% and was categorized as low because it was less than 60% of total expenditure. The household energy consumption in Palangka Raya City was 97.22% and was categorized as sufficient because it was above 80% of the recommendations for national energy consumption. The results of data analysis that the level of household food security was categorized as food resistant because households using the total portion of food expenditure did not exceed 60% (categorized as low) and sufficient energy consumption had exceeded 80% of national recommendations (categorized as sufficient).

The policy in strengthening and reassuring the food security system in Palangka Raya City requires good and integrated coordination, communication and cooperation between various technical and non-technical parties. For example, it is done by the Palangka Raya City's Food and Agriculture Security Agency Logistics Business Regional Division (Bulog Divre) of Central Kalimantan; Central Kalimantan Institute of Agricultural Technology (BPTP); and Palangka Raya City Central Bureau of Statistics (BPS). It is especially in implementing various food subsystem availability and reserve programs, food distribution and access subsystems, and subsystems food consumption and diversification of local food.

REFERENCES

- Arida, A., Sofyan, S., & Fadhiela, K. (2015). Analisis Ketahanan Pangan Rumah Tangga Berdasarkan Proporsi Pengeluaran Pangan Dan Konsumsi Energi (Studi Kasus Pada Rumah Tangga Petani Peserta Program Desa Mandiri Pangan Di Kecamatan Indrapuri Kabupaten Aceh Besar). *Agrisep*, 16(1), 20–34. Retrieved from <http://www.jurnal.unsyiah.ac.id/agrisep/article/view/3028>
- Asmara, R., Hanani, N., & Mutisari, R. (2012). Analisis Ketahanan Pangan di Kota Batu. *AGRISE*, 12(3), 232–243. Retrieved from <https://agrise.ub.ac.id/index.php/agrise/article/view/94/121>
- BPS Palangka Raya. (2016). Palangka Raya Dalam Angka Tahun 2015. Palangka Raya: Badan Pusat Statistik Kota Palangka Raya.

- BPS Palangka Raya. (2017). Palangka Raya Dalam Angka Tahun 2016. Palangka Raya: Badan Pusat Statistik Palangka Raya.
- Fiisabilillah, D. F., & Maulana, A. (2017). Feeding the Megacity: Challenges to Achieve Food Security in Jakarta. *Jurnal Perencanaan Wilayah Dan Kota*, 27(3), 208–218. <https://doi.org/10.5614/jrcp.2016.27.3.3>
- Ginting, E., Utomo, J. S., & Yulifianti, R. (2014). Potensi Ubijalar Ungu Sebagai Pangan Fungsional. *Iptek Tanaman Pangan*, 6(1), 116–138. Retrieved from <http://ejurnal.litbang.pertanian.go.id/index.php/ippan/article/download/2601/2240>
- Jonsson, U., & Toole, D. (1991). *Household Food Security and Nutrition: A Conceptual Analysis*. New York: United Nations Children's Fund.
- Kodyat, B. (1997). Konsep dan Kebijakan Diversifikasi Pangan Dalam Rangka Ketahanan Pangan. In *Widya Karya Nasional Pangan dan Gizi (WKNPG) VI*. Jakarta, 26 – 27 Juni 1997: Bulog.
- Maxwell, D. G., Levin, C. E., Armar-Klemesu, M., Ruel, M. T., Morris, S. S., & Ahiadeke, C. (2000). *Urban Livelihoods and Food and Nutrition Security in Greater Accra, Ghana*. Washington, D.C.: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/0896291154rr112>
- Mulyo, J. H., Sugiyarto, S., & Widada, A. W. (2016). Ketahanan dan Kemandirian Pangan Rumah Tangga Tani Daerah Marginal di Kabupaten Bojonegoro. *Agro Ekonomi*, 26(2), 121–128. <https://doi.org/10.22146/agroekonomi.17265>
- PP 68/2002. Peraturan Pemerintah Republik Indonesia Nomor 68 Tahun 2002 tentang Ketahanan Pangan (2002).
- Rifai, A., Supardi, S., & Hastuti, D. (2012). Ketahanan Pangan Rumah Tangga Tani di Daerah Aliran Sungai (DAS) Galeh Kabupaten Semarang. *MEDIAGRO*, 8(1), 26–41. Retrieved from <https://publikasiilmiah.unwahas.ac.id/index.php/Mediagro/article/view/1306>
- Rosyadi, I., & Purnomo, D. (2012). Tingkat Ketahanan Pangan Rumah Tangga di Desa Tertinggal. *Jurnal Ekonomi Pembangunan*, 13(2), 303–315. <https://doi.org/https://doi.org/10.23917/jep.v13i2.176>
- Soetrisno, N. (1997). Ketahanan Pangan Dunia: Konsep, Pengukuran dan Faktor Dominan. *Majalah Pangan*, Puslitbang Bulog, Jakarta, 41(4).
- Suhardjo. (1996). Pengertian dan Kerangka Pikir Ketahanan Pangan Rumahtangga. In *Lokakarya Ketahanan Pangan Rumahtangga*. Yogyakarta, 26 – 30 Mei 1996.
- Suharyanto, H. (2017). Ketahanan Pangan. *Jurnal Sosial Humaniora*, 4(2), 186–194. <https://doi.org/10.12962/j24433527.v4i2.633>
- UU 18/2012. Undang-Undang Republik Indonesia Nomor 18 Tahun 2012 tentang Pangan (2012).
- UU 7/1996. Undang-Undang Republik Indonesia Nomor 7 Tahun 1996 tentang Pangan (1996).