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Contribution of Local Food to Meeting Needs Staple Food in Farmer Households in Laiba Village Parigi Sub-district, Muna Regency

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Abstract

This research aims to determine and analyze the contribution of local food to meeting the basic food needs of farming households in Laiba Village, Parigi District, Muna Regency. Furthermore, this research also analyzes the factors that influence local food consumption in farming households. The food commodities included in the model include three commodities including: rice, corn and cassava. The method used in this research is a quantitative descriptive analysis method and the Almost Ideal Demand System (AIDS) model equation which is estimated using the R-Studio method. The results of this research show that 1) The contribution of corn and cassava in providing food for farming households is still small compared to rice, where corn is only consumed on average 1.0 days a week, and no one consumes cassava as a staple food. Rice is consumed on average 6.0 days a week. Corn is now the second staple food after rice, while cassava is only consumed as a snack or snack for farming households, and 2) Factors that have a real (significant) influence on corn consumption are family income and number of family members, while the demand for cassava and rice is influenced significantly by the number of family members.

Keywords: Contribution, local food, AIDS.

INTRODUCTION

Food is the most important basic human need and its fulfillment is part of human rights guaranteed in the 1945 Constitution of the Republic of Indonesia as a basic component to realize quality human resources. Staple foods are foods containing carbohydrates that are often

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consumed or have been part of the eating culture of various ethnic groups in Indonesia for a long time. Staple foods are very diverse, according to the circumstances of the place and culture as well as local wisdom.

Food security is a very important national development agenda. Food consumption in Indonesia is dominated by rice, as most people consider rice to be a source of carbohydrates. Currently and probably for a long time, rice has not been substituted by other foods as the staple food in Indonesia. In fact, rice consumption shows an increasing trend (Sugiyanto, 2006). According to the Ministry of Agriculture (2018), about 97 percent of Indonesia's population consumes carbohydrate sources from rice. Areas that used to consume non-rice sources of carbohydrates, such as sago, corn, and tubers, are now consuming rice. The average Indonesian consumption of rice reaches 114.6 kg/year/capita or 314 grams/capita/day.

Every era of government in Indonesia has consistently committed to maintaining the availability of rice in the country due to its important role. Apart from rice, other commonly consumed carbohydrate sources include corn, cassava, sweet potato, and wheat flour and its derivatives such as bread and instant noodles. Maize is the main food crop after paddy rice in Southeast Sulawesi (Saediman, 2015) and the community has long consumed maize as a staple together with rice, sago and cassava. The results of research by Saediman *et al.* (2016) and Saediman *et al*. (2019a) show that the existence of local staple foods has a positive effect on community food security. This is because people can harvest or obtain them directly from their farms as an alternative food to rice. Even if they buy, these local foods tend to be cheaper and easier to obtain. In other words, the availability and accessibility of staple foods are relatively guaranteed.

Maize can be used as an alternative food (food) to rice that has great opportunities in supporting national food self-sufficiency. Therefore, it is not surprising that maize is a crop that is often grown by farmers in Muna. Suharno and Asaad (2015) found that maize farmers in Muna have an average maize farm size of 1 ha per farmer and plant maize twice a year, October-November (west season) and April-May (east season). This indicates that the Muna community is a community that likes to consume corn and most of the land is used to grow corn.

Laiba Village is one of the villages in Parigi Sub-district, Muna Regency, where the majority of the people work as farmers. The availability of local food affects the ability to consume food for households, while on the other hand, the majority of the community owns land that can be utilized for food crop cultivation. In general, the staple food of farming households in Laiba Village is rice, but there are other types of carbohydrate sources cultivated in the garden. These crops are sold and consumed by farming households, although they are

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consumed in limited quantities. This potential should allow farming households to obtain quality, nutritionally balanced carbohydrate foods and local food diversity should be utilized as much as possible to support food security. However, in reality, household food consumption is dominated by rice as a source of carbohydrates. Based on the previous description, it is important to conduct research on "The Contribution of Local Food to the Fulfillment of Basic Needs in Farmer Households in Laiba Village, Parigi District, Muna Regency".

METHOD

The research was conducted in Laiba Village, Parigi Sub-district, Muna Regency during December 2022 - January 2023. The population used in this study were households who were trying to grow corn totaling 44 people who were taken using saturated samples. The types and sources of data collected consisted of primary and secondary data. Primary data is data obtained directly from the object of research through direct interviews with respondents.

The data collection technique in this research is interview. The interview technique is to conduct questions and answers with the research sample to obtain data and information using a questionnaire as a question guide. This research uses the *Linear Approximation-Almost Ideal Demand System* (LA-AIDS) equation model analysis. Data processing uses R-Studio *software.* The equation model used in this study, namely the *Linear Approximation-Almost Ideal Demand System* (LA-AIDS) can be formulated as follows.

ωi= *αi0*+ *Σjγij* lnpj+ βiln(y/ρ*)+ αi1lnANGG+ αi2lnWAGE+ *δi3EDU ei* +

Description:

ω : Expenditure proportion of the *i-th* commodity group (IDR)
i, j : 1, 2, 3 (selected commodity groups, 1 = Rice; 2 = Maize; 3 = Cassava)
ρ*j* : Estimated price of the *jth* commodity group (IDR)
y : Total expenditure on commodities 1, 2, 3
ρ* : *Stone* price index
αij, *βij*, *δij* : AIDS model parameters
ANGG : Number of Family Members (Life)
WAGE : Income per month (IDR)
EDU : Housewife Education (Year)
ei : *Error term*

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RESULTS AND DISCUSSION

Local Food Availability in Food Fulfillment of Farmer Households

The staple food sources of households in Laiba Village are rice, maize and cassava, with rice being the most widely consumed today, replacing maize and cassava which used to be the staple foods. Nevertheless, corn remains the second staple food consumed daily or several times a week, while cassava is more often used as an additional food in processed form. Food availability greatly influences consumption patterns, which are fulfilled through farming, market purchases or aid. Sufficient maize production makes it easily available to households, while cassava is more difficult to access as few people cultivate it.

Local Food Contribution Rate

The contribution of local food in the household is presented in Table 1, which illustrates the number of respondents (%) according to the frequency of consuming staple foods in the last seven days.

Table 1 Consumption of Staple Food in the Last Seven Days in Laiba Village, Parigi Sub-District, Muna District

Daily rate of staple food consumption (%) in the last 7 days						Average Daily Consumption
	Never	1-2 Days	3-4 Days	5-7 Days	Percentage (%)	
Rice	2.3	2.3	11.4	79.5	100	6.0
Corn	61.4	25.0	9.1	4.5	100	1.0
Cassava	100,0	0,0	0,0	0,0	100	0.0

Source: Primary data processed, 2022

The staple food consumption pattern of farming households in Laiba Village is dominated by rice with an average consumption frequency of six days a week, while corn is only consumed once a week, and no one consumes cassava as a staple food. This is in line with the national trend where rice is the main source of calorie intake, with consumption reaching 257.6 grams/cap/day in 2020, much higher than corn (4.9 grams/cap/day) and cassava (23.5 grams/cap/day) (Ministry of Agriculture, 2021). The high consumption of rice in Laiba Village is influenced by eating habits and energy needs due to heavy physical activity in the agricultural sector. Maize remains the second staple food and is consumed as a distraction, although its availability depends on the harvest season. Cassava is mostly processed into traditional foods

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such as kasoami and is only consumed once a week. Although rice is the main staple food, its price continues to increase, with the national average price of premium rice reaching IDR 13,000/kg and medium rice IDR 11,000/kg in December 2022, which is the highest price since 2018 (Nasution, 2023).

Factors Affecting Local Food Contribution

The dependent variable of the equation is the share or proportion of expenditure share of each aggregate commodity, while the independent variable of the equation is the relative price of each commodity with respect to the others.

Table 2 Estimation Results of Factors Affecting the Proportion of Basic Food Expenditures

	w_{beras}	w_{jagung}	$w_{singkong}$
lnP (Rice)	-0.066	0.077	-0.011
lnP (Maize)	0.077	-0.092	0.015
lnP (Cassava)	-0.011	0.015	-0.005
LnEducation	0.016	-0.003	-0.013
LnJAK	-0.344*	0.262*	0.082*
LnRevenue	0.079	-0.086*	0.007

Notes: *) indicates statistically significant at 5 percent α level.

The estimation results of carbohydrate source food expenditure share showed that the R-square value for rice commodity was 61.7% and corn was 54.9%, which means that the variation of independent variables in the AIDS model can explain most of the expenditure share of the two commodities. However, the R-square value for cassava commodity shows a negative number of -776.9%, which is considered to be zero, so the independent variables in the model cannot explain the dependent variable. This indicates that the independent variables included in the model do not have a strong relationship with cassava expenditure share, while other influential factors are not included in the model.

1. Own Price Factor, based on the coefficient value of the AIDS parameter estimation, the own price factor generally did not show a significant influence on the share of expenditure on rice, corn, and cassava. For the rice commodity, the price factor was not significant because rice is an important staple food for life, so price changes do not have a major effect on the consumption level of farmer households in Laiba Village, in line with the findings of Sugiyanto (2006) who stated that rice consumption is relatively

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insensitive to changes in market prices. The maize commodity also does not show a significant effect of the price factor, as the majority of farming households have maize supplies from their own harvests, so they are not dependent on market purchases. Thus, maize demand is not affected by market price fluctuations. Meanwhile, the price factor of cassava also has no significant effect on its expenditure share, possibly because cassava is only consumed as a side dish in the form of traditional preparations by farming households in Laiba Village.

2. The education factor of housewives in general does not show a significant effect on the demand for rice, corn and cassava, which means that the level of education of housewives does not affect family food consumption patterns in Laiba Village. This is in line with Faradina's research (2018), which states that increasing the education level of housewives has no effect on household food expenditure. However, this is different from Soekirman's (2000) assumption, which states that the formal education of mothers is often positively associated with improved household food consumption patterns and food expenditure. In the study area, the majority of housewives have a low level of education, with 44 having only primary education, 14 graduating from senior high school, and only 2 reaching university level. This low level of education may reflect the lack of knowledge of housewives regarding the fulfillment of family nutrition, so that they prioritize the quantity of food that fills them up over the quality of nutrition. In addition, family income is a major factor in determining the quality and quantity of food consumption, where high-income families tend to pay more attention to food quality than low-income families. Households with limited income focus more on fulfilling food needs adequately without considering the nutritional content (Dewi, 2015).
3. Based on the coefficient value of the AIDS parameter estimation, the number of family members has a significant effect on the demand for rice, corn, and cassava at the $\alpha = 5\%$ level. The negative coefficient value of the rice variable indicates that as the number of family members increases, the demand for rice tends to decrease. In contrast, the positive coefficients of maize and cassava indicate that the larger the number of family members, the more varied food consumption becomes, with a tendency to choose cheaper and more easily available food to fulfill satiety rather than nutritional needs. This is in line with Todaro's (2004) opinion that the more family members, the higher the consumption expenditure, which can be a burden for households in meeting their daily needs. To overcome this, households can increase their income or reduce food

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expenditure by choosing cheaper and less diverse food types, especially in farming households with a large number of members, which require more food.

4. Income factor, based on the estimated coefficient of the AIDS parameter, has a significant effect on the demand for maize at the α = 5% level, showing a negative value, which means that as income increases, the demand for maize tends to decrease. This reflects that at a certain income level, households prioritize cheap food as a source of energy, but as income increases, there is a change in consumption preferences towards protein sources (Harianto, 2001). Meanwhile, income has no significant effect on the demand for rice and cassava, which indicates that regardless of household income levels, consumption of these two commodities remains stable. This finding is in line with research by Partini et al. (2013) which showed that income was not significant in influencing the demand for rice in Riau. Farmers' income is used more for consumption goods with varying patterns and quality, where when income is low, farmers consume low quality rice, while with increasing income, they tend to choose better quality rice (Soekartawi, 2002).

Local Food Demand Response to Basic Needs Fulfillment

The demand response or expenditure share describes the degree of sensitivity of changes in demand due to a 1% change in the independent variable. In this study, the coefficients of own-price elasticity, cross-price elasticity, and expenditure/income elasticity will be found.

Table 3 Elasticity of Food Demand to Fulfill Basic Needs

	W_{rice}	W_{corn}	$W_{cassava}$
Price Elasticity	-1.118	-1.002	-0.980
Cross Price Elasticity			
W_{carb}		-0.036	-0.035
$W_{vegetable}$	-0.266		-0.078
$W_{side\ dish}$	0.53	0.215	
Expenditure Elasticity	0.586	0.954	0.062

Source: Primary data processed 2022

1. Price Elasticity, the price elasticity of demand for all commodities is negative between -0.980 and -1.118, meaning that the higher the price of a commodity, the smaller the amount consumed. The price elasticities of rice and maize are -1.118 and -1.002,

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respectively, indicating elasticity. This means that if the price of rice or maize increases by 1%, farming households will reduce demand by more than 1%. Meanwhile, the price elasticity of cassava is inelastic because it is less than 1, although it is close to 1. This indicates that an increase in the price of cassava is almost proportional to a decrease in consumption by farm households.

2. Cross Price Elasticity shows the demand response of a commodity to changes in the price of another commodity, which can reflect the relationship as a substitute or complementary good (Hartono, 2016). If the cross-price elasticity is positive, then the two goods are substitutes, while if it is negative, then they are complementary. The analysis shows that the relationship between the commodities studied, both as substitutes and complementaries, is relatively weak, as indicated by the low value of cross elasticity. For example, the cross-price elasticity of carbohydrate sources with respect to maize and cassava has a negative value of -0.036 and -0.035, respectively, which means that these two commodities are complementary. In other words, if the price of carbohydrate sources increases by 1%, the demand for maize will decrease by 0.36%, and the demand for cassava will decrease by 0.35%.
3. Expenditure Elasticity, the value of rice expenditure elasticity of 0.586 indicates that rice is an inelastic good because the elasticity value is less than one. This means that when total food expenditure increases by 1%, the proportion of expenditure on rice only increases by 0.586%. This indicates that rice is a normal good, where the increase in the proportion of expenditure is smaller than the percentage increase in total food expenditure. The expenditure elasticity value of maize of 0.954 also shows an inelastic nature, with an increase in the proportion of expenditure of 0.954% for every 1% increase in total expenditure. This indicates that maize is a normal good. Meanwhile, cassava expenditure elasticity of 0.062 indicates that cassava is also an inelastic good, with the proportion of expenditure only increasing by 0.062% when total food expenditure increases by 1%. This figure emphasizes that cassava is a normal good because the change in expenditure is smaller than the percentage increase in total food expenditure.

CONCLUSION

Based on the results of the analysis above, researchers can conclude that the contribution of local food to the fulfillment of staple food needs in farmer households is in rice commodities with an average consumption day of 6.0 days, corn is consumed on average only 1.0 day a week, and no one consumes cassava as staple food.

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Factors affecting local food consumption show that the share of expenditure on corn, cassava, and rice commodities is only influenced by the variable number of family members, except for corn, besides the number of family members, it is also influenced by income. Meanwhile, the factor of own price and education of housewives do not affect the share of local food expenditure in farmer households in Laiba Village, Parigi Sub-district, Muna Regency.

Suggestions that can be conveyed as input are that every household in Muna Regency, especially in Laiba Village, must consume more diverse, nutritious and balanced food, especially carbohydrate food so that they can meet food consumption needs in accordance with recommended standards. Another important thing is the need for counseling on the diversification of staple food consumption and we should make the most of local food to maintain food security.

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