

# Staple Food Pricing and Food Security in Ogan Ilir (M. Yamin)

*by* Fachrur Rozie

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# Staple Food Pricing and Food Security in Ogan Ilir Regency: AHP-Based Recommendations

*NE Putri*<sup>1\*</sup> and *M Yamin*<sup>1</sup>

<sup>1</sup>Socio Economic Department, Faculty of Agriculture, Sriwijaya University, South Sumatra, Indonesia

**Abstract.** This study examines food security in the Ogan Ilir Regency by assessing the affordability and accessibility of staple foods based on regional price levels. Using the Participation Rural Appraisal (PRA) method for qualitative data analysis, the study further employs the Analytical Hierarchy Process (AHP) to determine priority areas for policy intervention. AHP results underscore the significance of stabilizing food supply and leveraging local resources for food availability. In terms of affordability, the pivotal roles of enhancing purchasing power and stabilizing staple food prices are highlighted. As for staple food pricing, aligning production with market demands and optimizing the food trade system chain emerge as key considerations. The study culminates in policy recommendations, suggesting strategies like boosting production capacity, increasing food reserves and imports, and ensuring a stable food supply. It also emphasizes the importance of tailoring interventions to address specific challenges faced by vulnerable rural households in Ogan Ilir. This research offers actionable insights for local government programs aimed at ameliorating food insecurity in the region.

## 1 Introduction

Food security refers to the system of indicators that contribute to food security, which includes availability, accessibility, stability, and food usage [1]. The availability and affordability of staple foods are linked to an area's food price level. The level of staple food prices that apply in the areas that affect the ability of households to access and attain food fulfillment in their household might influence the state of food security. According to Mkhawani [2] the study's findings show that the majority of households (60 percent) justify buying food in bulk as a method to deal with rising food prices. This impact on the households can be limited consumption of diet foods or consumption of low-quality foods.

Fulfillment of food in farmer households in rural areas is very dependent on income derived from paddy fields and gardens. At harvest time, households can fulfill basic food needs completely, but during the planting season, farmer households usually experience food shortages due to decreased purchasing power of staple food products due to the absence of household income at that time. So staple food shortages could occur in farmer households in rural areas, especially in Ogan Ilir Regency.

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<sup>1\*</sup>Corresponding author: [nurilla@unsri.ac.id](mailto:nurilla@unsri.ac.id)

Agriculture harvests, staple food inventories, and household income are used to determine staple food prices [3]. Regional food production grows, but long-term food security remains a challenge, particularly in rural areas, resulting in limited job opportunities and limited access to food. [4]. Food security is inextricably linked to rural agriculture [5]. Food security is linked to rural agriculture, governance, food economy, and sustainable consumption. [6].

The main source of income for inhabitants in Ogan Ilir Regency was 98 percent rice fields in bog area farming. Farmers' household income was used to meet family needs. [7]. Food security in Ogan Ilir Regency requires development, with a concentration on accessibility, affordability, and pricing levels. With an IKP rating of 73.9 percent, the region ranks eighth in South Sumatra Province [8]

Trade policies are crucial for food security and price stabilization in developing countries; combining storage and trade may be necessary [9]. The condition of food security in Ogan Ilir Regency still needs to be made to achieve better conditions. The objectives of this study is to propose recommendations for measures to promote regional food security in the Ogan Ilir District through staple food price regulations. This research is crucial because it has implications for food security risk in rural areas, and the findings are expected to provide recommendations for initiatives to strengthen regional food security

## 2 Material and method

This research was conducted in Ogan Ilir Regency, South Sumatra Province. The study location was chosen purposively with the criteria as a region experiencing food security vulnerability with a food security index that still needs to be improved. To achieve a sufficient number of data points, a purposeful sampling of primary research for inclusion in the synthesis is used [10].

This research used survey method. Data used in this research is primary data. Primary data was conduct from direct interview with the household as the respondents by using questionnaire [7]. Data use in this study is primary data that collected from household survey in Ogan Ilir Regency.

The policy recommendations to increase regional food security in Ogan Ilir Regency, a qualitative analysis was carried out using the Analytical Hierarchy Process (AHP) method with the help of Expert Choice software. AHP was developed by Thomas Saaty in the 1970s. AHP is a multiple criteria decision-making tool that is utilized in policy decision-making applications. [11].

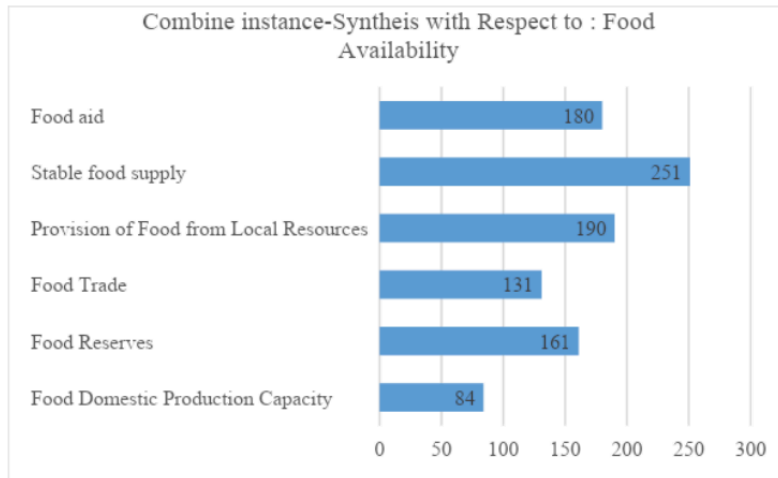
## 3 Result and discussion

Recommendations for Efforts to Increase Regional Food Security through Staple Food Price Policies in Ogan Ilir Regency

### 3.1 Food availability

Recommendations for the efforts to increase food security in Ogan Ilir Regency obtained from the results of the AHP analysis in this study are expected to become recommendations in making policies related to increasing food accessibility in rural areas, especially Ogan Ilir Regency. Increased job opportunities, government food price control, farm support, agricultural subsidies, and access to local markets enhance food security for rural households. [4].

Policy recommendations on food availability conditions consist of aspects of domestic food production capacity, food reserves, food imports/trade, food supply from local resources, food supply stability, and food assistance. These aspects are expected to provide recommendations in efforts to increase food security in the Ogan Ilir Regency.



**Fig 1.** AHP Result Food Availability

The results of data processing with AHP show that the recommendation for efforts to increase food accessibility in Ogan Ilir Regency is to make food supply stability as the first priority, and the second priority is the provision of food from local resources. Next is food aid to poor households in rural areas become the third priority for policy recommendation in increasing the food security in the region. The interpretations of food security focused mainly on availability, there was some recognition that market fluctuations affected levels of food consumption [12]

The results of this AHP analysis illustrate that the condition of food availability in the Ogan Ilir district that still needs to be improved is the stability of food supply, where the amount of staple food distributed must be stable in quantity and quality prices do not happen often. Food intake and nutrient uptake depend on household and individual's economic and social access [13].

The second priority in providing food from local resources needs to consider in efforts to increase food security in the Ogan Ilir district, in two study locations, the community has not been able to cultivate food production from local resources in the form of their land and yards for their daily consumption needs. The communities should give guidance and technical guidance related to cultivation on their land to become a staple food source for households. The demand for locally produced food is multi-faceted, potentially representing a diverse set of motivations in support of local food, such as economic stimulus, environmental concerns, health and food safety issues, and community development [14].

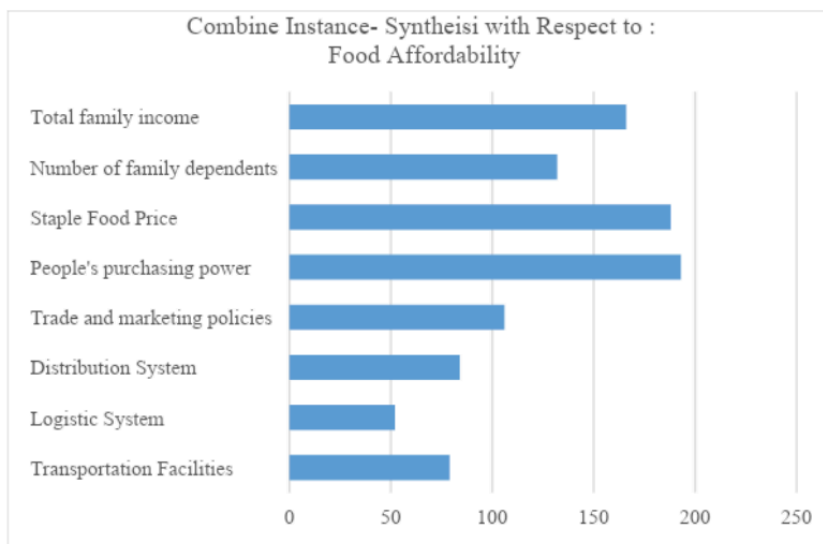
The third priority in efforts to increase the accessibility of staple food in Ogan Ilir Regency is the provision of food assistance, this is because, in the two study locations, the provision of food assistance is still relatively small or even non-existent. The community feels that food assistance is rarely obtained, and some have never received food assistance

from the government. Indonesia's food assistance program in 2020 uses electronic rice delivery with electronic vouchers for exchange at partner stalls. [15].

The three priorities resulting from the AHP analysis show that in order to maintain the food availability of farmer households, a stable supply of staple food is needed. In this case, the amount of supply is sufficient to meet the basic food needs of the community in Ogan Ilir Regency through various supply schemes, both imported from outside the region and fulfilling the supply of local food, which is the second priority. The provision of staple foods from local resources is an excellent alternative to be carried out in the Ogan Ilir district because this effort will be able to reduce the prices of available staple foods so that people in the Ogan Ilir district can buy them. Furthermore, the third priority is in the form of staple food assistance from government programs, which are also recommended to be able to provide basic food supplies for people in the Ogan Ilir district who have limited purchasing power.

### 3.2 Food affordability

The affordability of food in this study was from the aspects of purchasing power, staple food prices, and farmer household income. This condition provides an overview of which priorities must be carried out immediately to increase food affordability in the Ogan Ilir district. The affordability of food greatly affects the food security of rural farming households. Considering that food insecurity is largely due to low food affordability for households, especially in remote areas with high poverty conditions. Local officials offer grants, loans, and incentives for farmers, agri-tourism, and food system investments.[16]



**Fig 2.** AHP Result Food Affordability

The results of AHP analysis on indicators of affordability of staple food in the Ogan Ilir district show that the most important priority is to increase people's purchasing power for staple food products. The theory of planned behavior, propose three major factors to have an impact on attitude toward local food: health consciousness, concern for the environment,

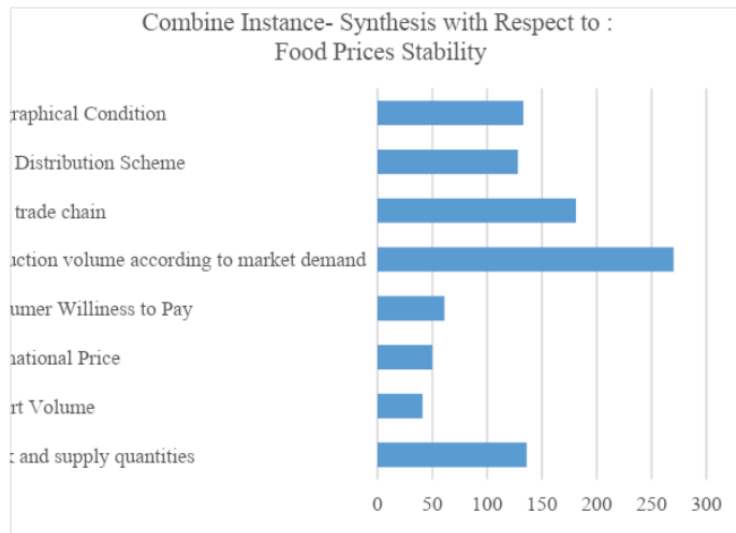
and support for local economies [14]. The second priority is to maintain the stability of staple food prices. This policy appears and is felt important by households in rural areas due to high fluctuations in food prices circulating in rural areas, thereby reducing the ability of households to reach staple food. The third priority that is also important in efforts to increase food affordability in the Ogan Ilir district is increasing household income. Poverty conditions cause the affordability of staple foods get low. The Efforts to increase the income, need to be carried out in community livelihood activities so that there is additional income that can be used to reach more and better quality staple food products. Local officials offer grants, loans, and incentives for farmers, agri-tourism, and food system investments [17]. The logistics system is the lowest priority for most households, lacking proper storage facilities like refrigerators and freezers. However, freezer storage can improve food preservation quality. Strategies aim to improve logistics behavior, but each improves specific logistic performance measures. [18].

The priority of efforts to ensure that staple food is always affordable for households of farmers in rural areas can be seen from the results of this AHP analysis, namely efforts to increase people's purchasing power for staple food products. These efforts can be in the form of reducing food prices to the lowest cost of purchase, providing subsidies for traders so that they can sell cheaply, and conducting market operations so that the distribution of these staple food stocks does not pile up and prices are stable.

### 3.3 Staple Food Prices

0 rise improves food quality, diverse consumption habits, imposes agricultural industry constraints [19]. Food prices determine affordability and access; climate variability affects job opportunities and food purchasing. The price of staple food is an indicator of the level of affordability of food for farmer households. The high price of staple food causes the affordability of staple food decrease and vice versa. This is because, in food insecure areas poverty, conditions dominate people's lives, so the increases in staple food prices greatly affect households' access to staple food for their daily needs.

Policy recommendations on staple food prices consist of aspects of stock and supply, import volume, international prices, consumers' willingness to pay, production quantities according to market needs, food trade chain, food distribution schemes, and geographical conditions.



**Fig 3.** AHP Results Staple Food Price

The results of AHP's analysis of staple food price indicators show that efforts to increase food affordability from food prices that are a priority are to increase the amount of production according to market needs. It is causes the amount of productions can supply domestic needs, then the household will be afford staple food better. The result of domestic productions will be cheaper and can be used to meet basic food needs safely. The second priority is to improve the food trade chains. This is important for doing, that prices at the consumer level are more stable because the trading chain will short. Furthermore, the priority of interests that must pursued is to fulfill the number of stocks and supplies will continuously. This condition is mainly related to domestic production produced by the community

The results of the AHP on staple food prices indicate that the top priority that needs to do is to meet the amount of production according to market needs. The second priority is the food trade system chain and the amount of stock and supply. The effort is last priority is the volume of imports because farmer households hope that imports of food products carried out to maintain the market price of food products in the form of rice carried out to remain stable. The comparison of imported food products prices and local products is also not much different, therefore the volume of imports does not affect the food security condition of farmer households.

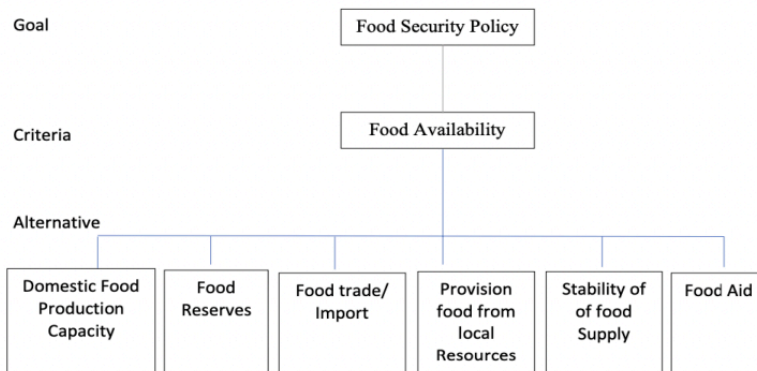
### 3.4 Model Analytical Hierarchy Procces (AHP)

#### 3.4.1 Model AHP Food Availability

Policy recommendations resulting from the results of the AHP analysis of indicators of food availability in the Ogan Ilir district indicate that the policy strategy taken as an effort to improve food availability for farm households in rural areas is to create several alternatives to include the increasing production capacity, increasing food reserves,



increased imports or inflows the staple food products to rural areas, provision of food products from local resources, and stability of food supply with food aid.



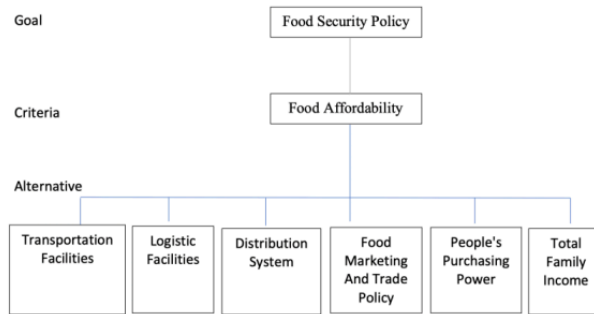
**Fig 4.** Food Availability AHP Model

Typical policy responses include increased food aid flows, government commercial imports and stock releases, and tight controls on private sector trade [20] Several alternatives still need to be raised so that several things might become innovations in policy-making related to the food availability for rural farming households which are in priority three locations for food insecurity status in Ogan Ilir district. Policies related to staple food availability need to be adopted from the AHP results have been carried out in a participatory manner with several key informants at the village level and in Ogan Ilir District.

#### 3.4.2 Food Affordability AHP Model

Policy recommendations on the affordability of staple food for the poorer in rural areas in priority three areas of food insecurity in Ogan Ilir Regency indicate that the alternative interests of each indicator based on the opinions of experts need to make efforts to become priority choices as programs for local governments in overcoming food insecurity problems in Ogan Ilir district.





**Fig 5.** Food Affordability AHP Model

The results of the AHP analysis show that in the indicators of food affordability for farming households in Ogan Ilir Regency, the dominant factor is the people's purchasing power which is still low for food products. This condition is related to the ability of households to generate income, and the agricultural sector is the main livelihood that is still constrained by various factors there is available infrastructure, causing the household to have no purchasing power for staple food products on the market. Increased income improves household nutrition, but increases pressure on resources and natural environments [21].

#### 4 Conclusion

Based on the results of this study, conclusions were drawn regarding policy recommendations related to food security in farmer households, as follows:

1. The results of the AHP on staple food availability show that an important priority for policy recommendations in Ogan Ilir District are the stability of the food supply and the provision of food from local resources.
2. The AHP results on the affordability of staple food is a priority in policy recommendations in Ogan Ilir Regency are people's purchasing power and stabilization of staple food prices.
3. The AHP results on staple food prices show that an important priority for policy recommendations in Ogan Ilir Regency are the amount of production according to market needs and the food trade system chain.

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