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**RESEARCH ARTICLE**

## **Food Availability and Distribution in Farmer Households; The Influence of Socio-Economic Aspects**

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**ABSTRACT**

The availability and distribution of food for a family is a manifestation of the power relations within a household. The availability and distribution of food for a family is a reflection of power relations within a household. On a wider spectrum, this phenomenon represents relations between countries in the context of food sovereignty. This study aims to look at the socio-economic aspects that influence the availability and distribution of food in the pursuit of food security for farming households. This research was conducted in March - April 2023 in Gowa Regency using a mixed method with a sequential explanatory technique, where this technique begins with quantitative data then, followed by qualitative data. This study involved 53 women as informants selected by simple random sampling. The social aspects used are education, main income earner, and women's position in the household. Meanwhile, to discuss economic aspects, land area and production of agricultural products (rice) are used. The results of this study explain that women who are the backbone of the household economy and are highly educated are seen to be more equitable in food distribution, while women who do not contribute to household income and are positioned as daughters-in-law or other household members are seen to have difficulty distributing food fairly and proportionally. In general, farmer households are not yet at the food security level, which is indicated by the fact that food consumption is dominated by carbohydrates. While the other nutrients, such as protein and fat, needed by the body have not been taken care of.

**KEYWORDS**

Socio-economic aspect, food availability and distribution, household food security.

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### **1. Introduction**

Historically, the supremacy of a country was determined by how much it had the power to control food. Food domination can be used to pressure other countries. After the world war era, the strength of a country is no longer seen from its economic wealth, political ideology, and military power but from its ability to be independent and sovereign in the food sector (Beckley, 2018; Bull, 2019; Daigle, 2019; Friedmann, 2018; Leach et al., 2020). The state is obliged to implement a food policy to provide for the needs of the people (Liu & Zhou, 2021; Rumawas et al., 2021; Wardhana et al., 2022), also as a tool of trade, and a weapon in diplomacy (Jeong, 2021; Koch, 2021). As the third largest rice producer in the world, Indonesia is still importing rice from Thailand, Vietnam, and China because domestic rice production has not been able to cover the needs of its population (Azzahra et al., 2021).

Due to Indonesia's large population, the government pays high attention to the implementation of policies to cover the food needs of its population. The Indonesian government has not made domestic food production a tool of foreign trade (commodities) and also as an instrument of diplomacy. In terms of domestic food policy, there are at least four keywords when talking about food security, namely availability, distribution, nutritional feasibility, and sustainability of production to meet the needs of the community. In an effort to fulfill these four keywords, the state is present by rolling out Law Number 6 on Job Creation in 2023 as a revision of Law Number 18 in 2012

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on Food. Everything related to the meaning or definition has not changed. The new changes are found in terms of how the government sets up regulations to ensure food availability for the Indonesian population (Indonesia, 2023).

The four keywords in the discussion on food security, namely availability, distribution, nutritional adequacy, and sustainability of production, are interrelated and cannot be separated. When the discussion focuses on food availability, the next step is food distribution. What is distributed must meet nutritional requirements, and to ensure continuous food security, sustainability cannot be ignored. This concept has also been developed in several countries, including the Republic of South Africa, Ethiopia, and Thailand (Geda et al., 2024; Keovilnavong & Suhardiman, 2020; Shushu et al., 2024). Of these four keywords, food availability and distribution are the starting point of this research, which is conducted at the farm household level.

Food unavailability in the market, caused either by production or distribution, has a significant impact on food prices. For families who do not have sufficient income, the increase in food prices is very significant to the level of household food security. Therefore, to achieve food security, it is necessary to balance and harmonize food system policies (production, distribution, consumption) and social policies such as poverty reduction, education, and health (Sophia et al., 2022).

The inaccessibility of food is a chronic and temporary food security challenge (Bastian, 2024; Weiler et al., 2017). Chronic food security threat is a state of continuous food and nutrition shortage due to lack of access to food, which usually occurs due to poverty. Meanwhile, a temporary food security threat is a situation of food shortage caused by temporarily disrupted food access, such as rising food prices, disrupted food distribution, or as a result of declining income (Pitaloka et al., 2021).

The main problem that makes food security in Indonesia still difficult to realize is the high demand for food while the food supply is limited (Duffy et al., 2021; Rozaki, 2021). Some of the factors that cause high food demand include population growth, economic growth, increased purchasing power, and changes in public preferences. Meanwhile, the growth of national food production capacity is still relatively slow due to community competence in land and water utilization, land conversion, and stagnant growth in land productivity and agricultural labor. This imbalance between demand and food production capacity has resulted in the government's propensity to use the policy of importing foodstuffs, which has been legitimized by Law No. 6 of 2023 on Job Creation.

In connection with the increasing demand for rice, in 2020-2023, there was a significant increase in the value of rice imports. In 2020, Indonesia imported 365,286 tons of rice. Meanwhile, in 2023, rice imports amounted to 3,062,857 tons (P. S. Badan, 2024). The high number of rice imports shows that Indonesia has difficulty achieving domestic food production to fulfill the needs of the people. Various efforts have been made by the government to increase rice production to meet national food needs, including printing new rice fields, building food estates, and increasing rice production by providing production inputs to farmers (Bin Rahman & Zhang, 2023; Marwanto & Pangestu, 2021; Octania, 2021; Sutardi et al., 2022). However, these efforts have not gone well due to climate change, flooding, pest attacks, and agricultural development policies that have not worked as expected (Putra et al., 2020).

In an effort to achieve food security, the food availability system, food distribution system, food consumption development, price and trade policies, food vigilance system development, availability of supporting infrastructure in rural areas, and transportation are things that need attention and must be done simultaneously so that there is no disparity (Chaireni et al., 2020).

South Sulawesi Province is positioned as one of the national food barns, but this position does not mean that all areas are food secure. Data from BPS shows that some of its districts are food insecure and have various levels of risk. The districts of Soppeng and Tator are at high risk of food insecurity. Bantaeng, Gowa, Barru, Enrekang, Maros, and Pinrang districts are categorized as medium food insecure areas, while East Luwu, Sidrap, Makassar, Palopo, and Pangkajene are categorized as relatively less food insecure areas (BPS, 2024). Based on data from the National Food Agency in 2023 on the ranking and Food Security Index (IKP), districts in South Sulawesi Province that have IKP values >80 are East Luwu, Barru, Sidrap, Pinrang, Soppeng, Banteng, Gowa, North Toraja, and Luwu. Meanwhile, districts with IKP values <80 are Tana Toraja and Jeneponto (Badan Ketahanan Pangan, 2023). A high IKP value indicates that the region is in a safe food security condition. Conversely, a low IKP value indicates a situation of low food security.

Studies on food security are mostly macro in scope. Such studies focus on how a territory becomes food self-sufficient. This is reflected in the report of the National Food Agency, which translates food sovereignty as an effort to (1) meet food needs from domestic production, (2) regulate food policies independently, and (3) protect and improve the welfare of farmers as the main actors of food agricultural businesses (Badan Pangan Nasional, 2023).

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businesses (Badan Pangan Nasional, 2023). Such studies focus on the aspect of food production. The problem of food security does not solely lie in the availability of production but in how the food is distributed equally within a household. Ensuring food justice in the household is the starting point to bring the family out of poverty and injustice. Thus, this study is placed in the position of a micro study at the household level. Taking into account the four keywords in the discussion on food security, this study is conducted by elaborating on the two main keywords of food availability and distribution. The objective formulation can thus be applied to look at the socio-economic aspects affecting food availability and distribution in achieving food security of farmer households.

## 2. Method

This research was conducted from March to April 2023 in Tinggi Moncong Sub-district, Gowa Regency. The research location was chosen purposively because the research locus is one of the medium-category food-insecure areas in South Sulawesi. A mixed method with a sequential explanatory technique is the research method used, where this technique begins with quantitative data and is followed by qualitative data. The social aspect of this study relies on the social reality of women in farming households. The social realities referred to are formal education, women's position in the household structure (contributing to household income), position in the family structure, and the position of the husband (head of household) in the social and customary structure. Meanwhile, the economic aspect focuses on land area and rice production.

Because the approach used was a mixed method with a sequential explanatory technique, data were collected in two stages, namely, using questionnaires to obtain quantitative data and in-depth interviews to explore the position of women in household food distribution more deeply. The respondents involved totaled 53 people, and the criteria was that they were members of farming households who played a role as managers of family food consumption. In addition to the main respondents, information was also obtained through in-depth interviews with traditional leaders, local leaders, and several relevant resource persons. Secondary data were obtained from government sources.

Data analysis was conducted in three stages. First, the quantitative data that had been collected was tabulated to obtain an initial description of respondents and household characteristics. Second, qualitative and quantitative data were combined to obtain an in-depth picture of the availability and distribution mechanism of food in households, and third, cross-analysis between household characteristics and household economic conditions with the research objective of obtaining a picture of socio-economic aspects that affect food availability and distribution in achieving food security of farmer households.

## 3. Result and Discussion

### 3.1 Social Aspects of Women in Farmer Households

This section will describe the formal education of women in farming households, the main earner actor in the household, and the position of women in the family structure. Women in farming households in this study are women who act as arrangers of household food distribution and are the central actors who ensure food availability for their households. The actor who ensures food availability is not always defined as the person who earns a living. In most farming households, the main earner is the head of the household, who, in this case, is a man. However, it is possible that the female actor who ensures food availability is also the main earner. Figure 1 shows the education of the respondents.

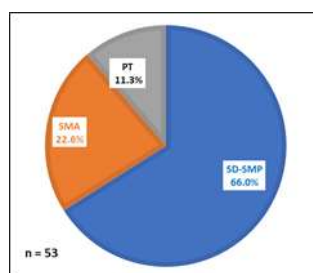


Figure 1. Women's education in farming households

Women's education, like the education of rural communities, is dominated by low levels of formal education. This is due to the understanding that the highest level of women's education is limited to secondary education. Meanwhile, access to higher education is not easily available. In addition to the traditional understanding that women are not required to

have a high level of education, the location of higher education does not reach rural areas. This study shows that most women attended junior high school (60 percent). And only 11.3 percent of them had higher education.

It is believed that formal education can change women's knowledge about their right to good food, reproductive rights, or other issues. Women's education plays a very important role in family life. These roles include managerial knowledge and skills, family consumption and nutrition decisions, roles in household management, and social empowerment and family decisions (Akram, 2018; Choudhry et al., 2019; Santoso et al., 2019; Van Bavel et al., 2018).

Logically, if women's education is good, they have the knowledge and managerial skills to manage household food. However, the results of this study show that women's education is not very high (60 percent in low level education), which means that women may not be able to control and manage household food availability optimally.

In addition to women's formal education, the social aspect examined in this study is the main breadwinner actor in the household by gender. This part of the study aims to find out more about who controls the household economy and how it affects food availability and food distribution to all members of the farming household. The description of who the main household earner is is presented in Figure 2. A study of 53 women in farming households in South Sulawesi shows that more than one-third of women are the main earners in the household (37.7 percent). This study also confirms that in rural areas that are still bound by custom and religion, the recognition of men as the main breadwinners is still dominant.

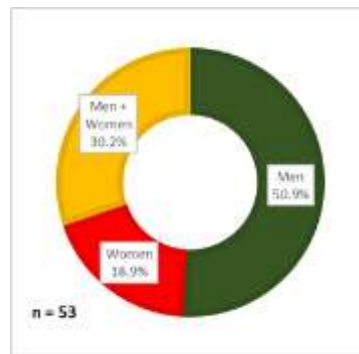


Figure 2. Main Household Earner by

Research on 53 women in farming households in South Sulawesi shows that the pattern of household income fulfillment consists of 3 (three) groups, namely men and women, and both men and women contribute to the household's needs. The information presented in Figure 2 makes us realize that the percentage of women is quite large in terms of fulfilling household needs both in their capacity as independent main earners (18.9 percent) and together with the head of the household (30.2 percent). This pattern of contribution to household income fulfillment also occurs in Africa, China, and Asia (Emran et al., 2021; Lu et al., 2022; Mukaila et al., 2021; Osanya et al., 2020). This fact shows that the presence of women in the activities of fulfilling household income cannot be ignored (Afrizal & Lelah, 2021; Azzuhdi, 2018; Gozali & Isfa, 2020; Satriawan, 2022). However, whether this significant involvement necessarily gives them the power to regulate food availability and distribution requires other investigations.

The sole earners in this study were female heads of households who were single parents. Their proportion is only around (18 percent), compared to male household heads (51 percent). If seen solely in the context of demographics, this condition is normal. However, if examined further in relation to food distribution, it is not necessarily the case that demographic normality is the same as the feasibility of food arrangements in the household. This will be explored further.

Further investigation found that children do not contribute to household income. They are exempted from farm work because they have to focus on education. All farmers agreed that children are now better off focusing on education rather than working in the agricultural sector. There seems to be a desire to replace children's employment through their current education. Therefore, education is seen as a route out of the agricultural sector.

This study also confirms that in rural areas that are still bound by custom and religion, the recognition of men as the main breadwinners is still dominant. This fact has other implications in the form of the emergence of special privileges,

which allow men to consume a larger portion of food and prioritize it. Other family members will receive food after the needs of the male head of household or elders are met. The main portion and type of food for the male head of household is not solely seen in the context of nutritional intake but rather as a form of respect for the position of men in the household.

The last thing discussed in this section is the position of women in the family structure. Women's position in the family structure influences decisions related to household food availability and distribution, including farming households (Durairaj et al., 2019; Megantara & Prasodjo, 2021; Standing, 2022).

Figure 3 shows the three positions of women in farmers' households: head of household, wife, and other household member. Women who are heads of households, as confirmed in Figure 2, amount to 18.9 percent. While the most common position is as a wife (56.6 percent). This study also found that other household members who play a role in food distribution are daughters-in-law and other household members who serve as people responsible for domestic work.

**3.2 Economic Aspects of Farmers' Households**

The economic aspects of households in this study include two things, namely the area of land owned or rented and the production of rice crops per family last season. The rice crop production and land area of each household actually reflect the economic condition of the family. Land is an essential production factor and, therefore, cannot be substituted. The management of the agricultural sector, especially food crops, which is still semi-modern as in Indonesia, is characterized by narrow and fragmented land ownership. The results of the 2023 Indonesian Agricultural Census show that 6 out of 10 farmers in Indonesia are categorized as smallholders. The Central Bureau of Statistics provides an official definition of a smallholder farmer as a farmer who owns or leases less than 0.5 ha of agricultural land (Badan Pusat Statistik, 2023).

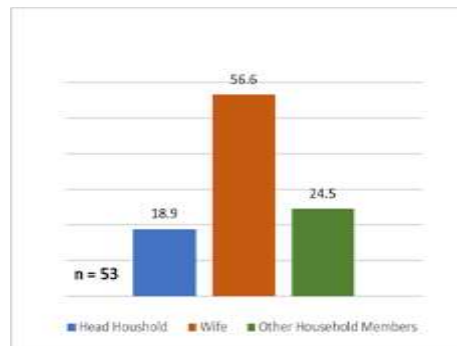


Figure 3. Women's position in family structure

The results of the search in this study show that the average land area owned or controlled by each rice farming household is 0.7 ha. Overall, the 53 households examined in this study show that most farmers own <1 ha of land (70 percent). Figure 4 shows the size of land owned or rented by farming households in South Sulawesi.

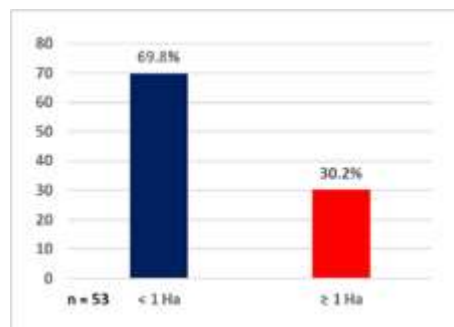


Figure 4. Rice Farm Size

Land area is an essential production actor and cannot be substituted by other factors in farming activities (Azuz et al., 2023). Land area is also the basis of the farm productivity formula. Productivity is related to the efficient use of production factors. Because of its fixed nature, land can only be transferred from one owner to another with a stable locus. Limited land is often caused by inherited land. Farmers who inherit land will divide what was once large land into small areas for their children. As a result, farmland becomes small and fragmented. The small size of agricultural land is also caused by the conversion of agricultural land into housing, such as what has already happened in Jogyaakarta, West Africa, and Bangladesh (Akter et al., 2019; Sulistyaningsih & Waluyati, 2019; Zossou et al., 2020).

Land fragmentation in farmer households is also caused by the wife's ownership of rice fields given as a marriage dowry (sunrang) and the wife's inheritance when married. The purpose of giving sunrang is to identify a woman's high position in customary law (Nurlia & Nurasiah, 2017). The research shows that fragmented land also comes from what is referred to as sunrang and the wife's inheritance. Inherited property can be in the form of provisions from parents to their daughters in the form of several plots of paddy fields. The wife's paddy field, whether from the dowry or from the parents' gift, then becomes the land of the farmer's family as a whole, but its location is fragmented.

Besides land area, the element that clearly describes the economic condition of rice farming households is their rice farm production. In broader discussions, the element of price is often included, but price is not determined by the farmer's ability to work. Prices are mostly determined by the market, and thus, the price factor is beyond the control of farmers. Land and production are the autonomous domain of farmers. Therefore, in discussing the economic aspects, this study uses the land area and rice production of each farmer household.

Crop production is the second item discussed in relation to the economic aspects of the household. This study divides the rice production group into two groups. The below-average production group and the above-average production group. The grouping scheme is as follows: The rice production group is divided into below 4776 kg and equal to 4776 kg and above. The information in Figure 5 shows that more than half of the farmers (56 percent) are in the below 4776 kg production. Information from the field provides an understanding that the rice production obtained by rice farming households is not too large because the average land area controlled or owned is not too large (see Figure 4).

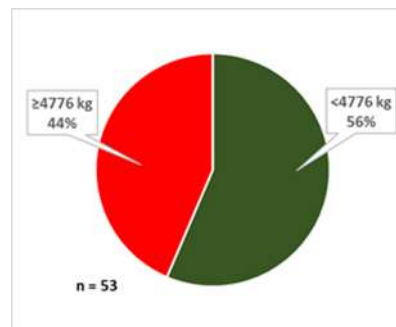


Figure 5. Rice Farming Production

The fact that land ownership is narrow also colors the production of agricultural products, which is directly related to the economic aspects of farmer households. In other words, if production and land ownership or land size are illustrations of household economic conditions, then through the findings in this study, it is clearly said that the economic conditions of food (rice) farming households are not in reliable condition. In such discouraging household economic conditions, studies on household food availability and distribution through social and economic aspects are highly urgent.

### **3.3 Food Availability and Distribution in Farmer Households**

The discussion in this section is carried out using a combination of quantitative and qualitative data (Mixed method with sequential explanatory technique). Information is collected through in-depth interview techniques and then combined with quantitative data that has been found. The main theme discussed is how to explain food availability and distribution from social and economic aspects in farming households. Availability in this study rests on two aspects, namely, the availability of food for household consumption and the processing and nutrition of food consumed.

Meanwhile, the term food distribution refers to the efforts of women in the household to distribute processed food to all household members in a balanced manner.

This study explains that in South Sulawesi, the position of women is considered quite high, as evidenced by the culture of maintaining family *siri*. South Sulawesi women are highly protected by the men in the household (Nur et al., 2023). The honor of the extended family depends on the position of women. However, this position does not automatically give women the full authority to organize and distribute freely and according to their will. Women are bound by the rules of etiquette that apply for generations. The higher a woman's position in the customary order, the more she must obey these customary rules. Meanwhile, the prevailing culture prioritizes men. The preference of men can be seen in their responsibility to protect the family from interference from other parties and to ensure that the needs of the household are taken care of.

In-depth interviews confirmed that as a form of family honor (*siri*), women must be protected by men. There are several differences in household food availability. Women who have a relatively high level of education believe that both men and women are responsible for fulfilling household needs. Women from lower education groups believe that it is men who must work. Differences in views like this have an impact on the privilege given to men. Generally, women who are educated and have jobs (contributing to the fulfillment of household income) believe that men and women in the household have a balanced position. This contrasts with the views of women who are not educated, especially those who do not contribute to household income. The overall scheme of social and economic aspects can be seen in Figure 6.

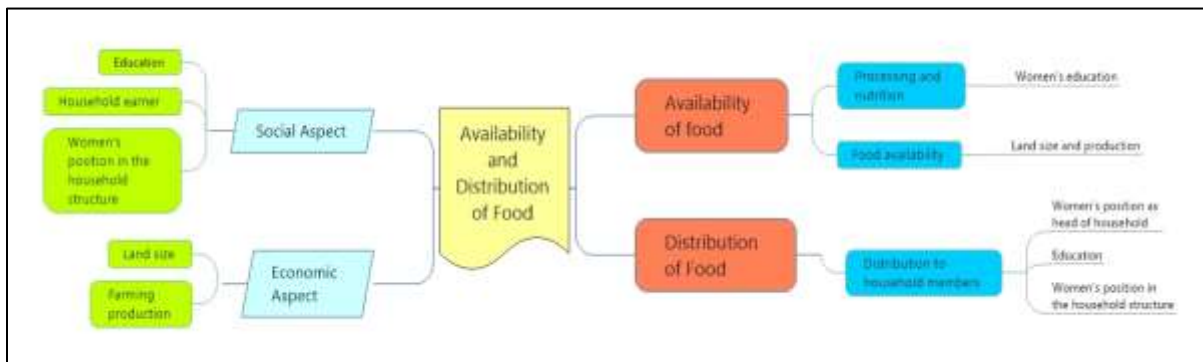


Figure 6. Scheme of the Role of Socio-Economic Aspects in Food Availability and Distribution of Farmer Households

In terms of food distribution, it appears that in households where women are the main breadwinners, food distribution to all household members is balanced and proportional. However, in households where men have the dominant economic responsibility, the distribution is not balanced. In these households, men get a larger and more privileged portion than other family members. In another articulation, this research wants to say that power relations extend to the distribution of household food based on who is the dominant breadwinner. If women are the dominant breadwinner, household members will receive food in a balanced manner. But if men are dominant, it is certain that food distribution will be more to the income earner.

Women's education, their role as the main earners, and their position in the family structure are crucial in terms of a balanced and proportionate food distribution. In-depth interviews revealed that women's position in the household structure is the most difficult thing to overcome. Women who become daughters-in-law and still live with their husbands' families must abide by the household rules to prioritize food for the men. Meanwhile, in terms of household food fulfillment, it appears that land area and agricultural production are determinants that cannot be replaced by other things.

#### 4. Conclusion

The study of food fulfillment and distribution in peasant households is not just about how food is fulfilled and distributed in the household. An in-depth analysis shows that the equitable distribution of food needs to be supported by financial capacity, education, and respect for the existence of women and all household members. In a broader spectrum,

discussions on food availability and distribution are power relations that need to be viewed comprehensively so that the balance of obtaining good and healthy food is prioritized.

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