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The Relationship of Increasing Food Production to Social Welfare and Health

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Abstract: The threat of an economic recession in 2023 raises concerns. Farmers, as the main supporters of food production, also feel that rice, the main food of the Indonesian people, must always be available in sufficient quantities. The population explosion during the pandemic was caused by high birth rates. Population growth must coincide with adequate food security so that there will be no famine and other chaos as a follow-up impact. The success of farmers in increasing agricultural output should be enjoyed in the form of social welfare and health. This study aims to see the relationship between increasing food production and social welfare and health. This research uses quantitative methods. Data collection using questionnaires Analysis of the study's results using linear regression It was found that there was a significant relationship between increased food production and farmers' social welfare and health. This research can be a reference for continuing to increase food production through the opening of new agricultural land. Another option is to reduce the conversion of agricultural land into settlements or offices. Thus, farmers have the opportunity to continue to maintain their food production numbers.

Keywords: Farmers; Food production; Health; Social; Welfare

Introduction

Since 2019, the World Health Organization has created a health preparedness plan and a strategic response to the COVID-19 pandemic crisis. This operational plan involves national and international partners in its development (Tadele, 2019). Of the eight priority topics, one is logistical support. People's demand for food has increased dramatically (Aday et al., 2020). However, the food supply chain in Indonesia is fairly stable thanks to the contributions of farmers.

Food adequacy is a fundamental parameter for globally recognized health promotion and protection. Personal and public health is influenced by a variety of factors, one of which is the availability of adequate food. Food and nutrition are the main issues in reforming a nation's social and health order (Jaime et al., 2018). So far, the concept of food security has only targeted increasing productivity and production. Whereas food, as the primary domain, can keep up with the rising population trend while producing astounding efficiency, efficiency in the food sector must be able to cover aspects of health and social welfare (Waltner-Toews et al., 2000). In Blum's health-well-being model, he mentioned that aspects of behavior, health services, heredity, and the environment influence the achievement of health well-being (VanLeeuwen et al., 1999). A high population requires a large supply of foodstuffs. On the other hand, the number of workers in food-related fields determines the amount of production.

The COVID-19 pandemic limited people's mobility for two years (Scala et al., 2021). This is true all over the world. Beyond prediction, this triggered a very significant increase in the birth rate. In 2019, the number of births reached three times the previous year (Ashish et al., 2020). Along with these conditions, the population has also increased. The world's population is predicted to reach 9 billion by 2050. As a result, the need for food is increasing. The birth of a child has the potential to

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increase the economic burden on the family. To accommodate this increase, food production must be increased as well. Farmland, on the other hand, is becoming increasingly scarce. Land expropriation is widely used as a residential area. In other words, an increase in population requires an increase in food production. Meanwhile, the narrower agricultural land is used to build settlements (Bonner et al., 2017)

The conversion of agricultural land resulted in a shortage of food raw materials. Without sufficient food, famine will hit the world (Kundu et al., 2015). Prolonged famine proved to tear down a nation. Hunger will be followed by malnutrition which threatens health (Ahsan, 2020). The famine even resulted in the deaths of millions of people. Society has become frustrated. feeling ignored by stakeholders. Finally came the desire to liberate their territory from the then-ruling government (Srimanjari, 2022).

In Indonesia, there was chaos at the beginning of the pandemic. Social distancing policies make people feel threatened with hunger. As a result, panic buying occurred in almost all regions. Although pandemic conditions are starting to improve, the threat of a recession in 2023 will affect food supplies.

Research from Southon (2000) in Ireland, Northern Ireland, Spain, France, and the Netherlands focuses on increasing vegetable and fruit consumption. He discovered that eating more vegetables and fruits could improve DNA expression. However, this study does not relate to the social welfare that is the goal of each nation. Another study conducted by Kitole et al. (2022) found that the health of farmers resulted in falling production rates. The percentage decrease in production varies depending on the type. HIV disease. AIDS decreased production by 66.8%, type I by 11.75%, and cholera by 25.1%. Interestingly, very few studies examine the relationship between increasing food production and farmers' social welfare and health. The welfare of farmers is only seen from the welfare proxy value (NPK) alone. In South Sulawesi, the NPK for food, based on data from the Central Statistics Agency (BPS), is always in deficit throughout 2022. This is in stark contrast to its nickname as a national rice granary. Their hard work should be relevant to social welfare and improved health. Therefore, the study aims to see the relationship between increasing food production and farmers' social welfare and health.

Method

This study is quantitative and employs a cross-sectional design. The population in this study was a rice farming community in the Wajo district. The sampling technique used is random sampling. 48 people responded between May and June 2022. Respondents who are rice farmers are members of the farming community. Every Saturday, they have a meeting to discuss the problems on the ground. Researchers are allowed to conduct interviews related to research questionnaires. The first part of the questionnaire contains data on the characteristics of respondents, the number of families covered, the status of land ownership, and the amount of production; the second part contains data on the level of education of the child, the state of residence, and the type of transportation to which it belongs; the third part is about health and the ease of getting access to health. The collected data is further tested using SPSS version 25. An independent variable is an increase in the amount of production. The two dependent variables tested were the social welfare and health of the farmers. The data were tested using linear regression to determine the relationship between the two variables.

Result and Discussion

Based on the data in Table 1, it was determined that of the 48 rice farmers who were respondents, 11 people (23%) were aged 28–35 years. Most farmers are aged 44–53 years (35%) and only a few are aged 52–59 years (17%). In terms of education level, only 11 people (23%) graduated from high school. Most farmers have 31 primary education levels (65%). Most farmers (79%) have to support two to four family members. 50% of farmers already have their land to cultivate. 14 people (29%) are only cultivators, and 10 people (21%) are still renting land.

Farmers harvest rice every 2-3 months. This means that in one year, they can harvest four times. Data for the increase in rice production is taken from the harvests in March and June 2022. The results showed that 31 farmers (65%) experienced an increase of 30% from the previous harvest. 10 people (21%) experienced an increase in production yields of up to >50%.

The contribution of farmers to the economic, social, and health sectors is crucial. In Indonesia, farmers belong to a range of groups. Table 1's education level data show that just 11% of people have finished the government's recommended 9 years of compulsory schooling. Most of them—65%—only complete primary education. This contrasts with the demands of farmers, who support other sectors for the welfare of the nation. Managing agricultural land requires adequate manpower and knowledge. Improper management has the potential to harm social life and public health. Less proven knowledge of farmers has a close relationship with problematic agricultural products (Cevik et al., 2020). In addition, their ability to work on land and be more productive is related to age (Sharafi et al., 2018),

and educational status (Saeed et al., 2017; Santos, 2015; Thao et al., 2019).

Table 1. The Increase in Rice Production

Variable	Number (n)	Percentage (%)
Farmer's Age (years)		
28-35	11	23
36-43	12	25
44-53	17	35
52-59	8	17
Total	48	100
Education		
Sd/Equivalent	31	65
SMP	6	12
SMA	11	23
Total	48	100
Number of dependents (Person)		
<2	0	0
2 to 4	38	79
>4	10	21
Total	48	100
Land Tenure Status		
Owner	24	50
Cultivator	14	29
Tenants	10	21
Total	48	100
Increased Production (%)		
<30	31	65
30 – 50	11	23
>50	6	12
Total	48	100

Food crops are an important commodity and strategy to meet basic human needs. This type of plant should always be available in sufficient quantities (Horst et al., 2019). The level of rice marketing in Indonesia is very large. Data from the Central Statistics Agency (BPS) reported that in 2019-2020 there was an increase in people's rice consumption of 314.10 thousand tons. This is inversely proportional to the number of farmers who decrease from year to year. The Central Statistics Age reported that of the 42 percent of farmers 10 years ago, in 2021, 29% remained (BPS, 2021). The conditions above need to be optimized to strengthen agricultural development, especially for farmers. The increase in production is expected to go hand in hand with the welfare of farmers, both economically, socially, and healthily (Giller et al., 2021; Hu et al., 2022). Law No. 56 of 1960 established regulations in this regard. In this regulation, the government stipulates that the amount of land per family be at least 2 hectares. The farmer's income in this area is sufficient to provide a decent life for himself and his family.

The number of people in the family affects the income of farmers. The more families are covered, the greater the expenditure to make ends (Ali et al., 2015; Mona et al., 2015). The income of farmers who own their land is different from that of farmers whose status is only that of tenants or cultivators (Aftab et al, 2022; Syaekhu et al., 2022). Those who own their land can enjoy the full output of production. Meanwhile, tenants and cultivators must share the production with landowners. In other words, his income is lower than that of landowners (Sugden et al., 2014).

The province of South Sulawesi has succeeded in advancing its agricultural sector. It is even nicknamed the national rice granary. South Sulawesi produces the largest food crop in eastern Indonesia. Based on data from the Department of Food Crops, Horticulture, and Plantations of South Sulawesi Province (2020), the total area of rice fields in South Sulawesi Province in 2019 from 24 regencies is divided into two, namely the total area of irrigated rice fields and the total area of non-irrigated rice fields. The total area of irrigated rice fields is 397. 665.80 ha and the total area of non-irrigated rice fields is 253,280.67 ha, so the total area of paddy fields in South Sulawesi is 650.948.47 ha. Several provinces have the largest area of rice fields, namely Bone (117,058.53 ha), Wajo (99,854.46 ha), Pinrang (50,951.92 ha), Sidrap (49,587.50 ha), Luwu (29,738.23 ha), and Soppeng (28,470.90 ha).

Wajo Regency is an area with the second-largest area of paddy fields in South Sulawesi Province. According to data from the Department of Agriculture and Food Security of Wajo Regency (2020), the area of paddy fields according to the type of irrigation in Wajo Regency is for irrigated rice fields of 31,232 ha, rainfed fields of 66,156 ha, and tidal swamps of 4,274 ha, so that the total area of paddy fields in Wajo is 101,662 ha. The area of paddy fields in Wajo Regency increased from 99,854.46 ha in 2019 to 101,665 ha in 2020.

Table 2. Shows the Relationship between Increasing Rice Production and Social Welfare and Health

Type	B	One	Adjusted beta	P Value
Social Welfare	0.118	0.056	0.247	0.04
Health Wellbeing	0.209	0.092	0.241	0.03

Table 2 shows the results of the linear regression analysis. The increase in the amount of production significantly affects social welfare (p-value = 0.04) and the health of farmers (p-value = 0.03). These findings confirm that health has the strongest correlation with well-being among the free variables. Farmers will be able to increase their sales as production increases. The more money they earn is used to send their children to college. There were 27 children of farmers who successfully denounced education in higher education. Some have graduated, and others are still in college. Other data from the study found that 100 percent of farmers' homes are permanent homes. The shape of the wajo community house is classified into two types:

wooden and brick houses. The form of social welfare can be seen from the type of vehicle it has. Almost all of them have owned motor vehicles. Even five farmers with their rice fields have private cars.

The results of the study found that, in terms of health welfare, 90% of farmers are healthy. Only a small percentage suffer from lumbago. In addition, for the past 3 months, only 2 people (5%) have suffered from fever and flu. No type of degenerative disease such as diabetes has yet been discovered. They can get access to health services easily. A sufficient income can meet the nutritional needs of the family. They can buy protein-rich foods such as eggs, chicken, and meat. Their fiber is fulfilled from vegetables that they can buy on the market or the results of growing them in the yard. Balanced nutrition makes their bodies much healthier.

Conclusion

Increased production is significantly associated with social welfare and health. The amount of production that increases go hand in hand with increased earnings. This has an impact on meeting adequate life needs. Social needs such as children's education, homes, and vehicles can be obtained by farmers with their agricultural production. In addition, the health of the farmers is also at a good level. The fulfillment of nutrition has been fulfilled in a balanced manner. Access to health services is also easy with the vehicles they have.

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