Solutions to Food Security Problems in Indonesia: An Islamic Perspective

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1. INTRODUCTION

Research on food security in Indonesia has been conducted, among others, by Yuniarti (2019), Junaidi, Kharisma, Handoyo in 2020, and Ariefiansyah (2022). Yuniarti described the effect of climate change on family food security in Yogyakarta (Yuniarti et al., 2019). Then, Junaidi analyzed the influence of socio-economic-demographic characteristics on the food security of urban poor families in Jambi (Junaidi et al., 2020). This research was strengthened by Kharisma describing food insecurity in three major cities in Indonesia (Kharisma & Abe, 2020). Handoyo analyzed the relationship between trade and food security protection in Indonesia (Handoyo & Permata, 2020), while Ariefiansyah described the provision of climate services to increase productivity and national food security (Ariefiansyah & Webber, 2022). Of these five studies, there is no research related to the solution of food security problems in Indonesia from an Islamic perspective.

Many approaches with an Islamic perspective have actually been carried out, including by Arfin, Zara, and Subandi in 2022, while in 2023 by Sujatmiko. Arfin describes Muhammadiyah berkemajuan (Progressif Muhammadiyah) with historical and theological perspectives (Arfin et al., 2022). (Arfin et al., 2022). Zara visualizes the natural world from an Islamic perspective in Pandji Masjarakat magazine (Zara, 2022). Subandi described the therapeutic process and theoretical ideas behind Islamic Sufi practices to treat people with mental illness and drug addiction in Yogyakarta.
city (Subandi et al., 2022). Of the three studies with an Islamic perspective, none has the object of research on food security.

There are definitions of food security, including according to the Ministry of Public Works and Housing/PUPR (2023), FAO (2023), and Clapp (2023). According to PUPR, food security is a condition of fulfilling food needs for households which is reflected in the availability of sufficient food, both in quantity and quality, safe, equitable, and affordable. Food security is realized through the sustainability of irrigation systems, through the development to operation, and maintenance of irrigation networks. According to FAO (2023) Food security is the availability of food and a person's ability to access it. So that food security factors consist of food availability, access, utilization, and stability. Meanwhile, according to Clapp (2022), food security includes food availability, food access, food utilization, stability, agency, and sustainability (Clapp et al., 2022). This research focuses on the solution to the problem of food availability in Indonesia, namely food production.

Indonesia should have no problem with food production, especially rice production. Indonesia is known as an agricultural country, and its rice production is the fourth largest in the world. However, since the majority of the population consumes a large amount of food, the demand for it is high (Salsyabilla, 2017). The increase in Indonesia's rice production is insufficient, hence the dependence on rice imports. Dependence on rice imports causes the country's level of independence to be smaller (Alderiny et al., 2020). The inability of a country to provide enough food is also caused by the lack of investment in the food sector. Thus, the government ends up relying too much on import policies (Diagne et al., 2013).

Rice is one of Indonesia's main food commodities. According to data from the Central Statistics Agency (BPS) in 2014, Indonesia was one of the largest rice producers in the world, reaching 69.87 million tons. However, BPS data regarding rice production in 2020 shows a decline in rice production, where Indonesia only produced 54,649,202.24 million tonnes and this figure decreased in 2021 to reach 54,415,294.22 million tonnes, then in 2022, it showed a slight increase. to 54,748,977.00 million tons (Surya, 2021). Apart from that, the area of rice harvested land in Indonesia has also decreased, data taken from BPS shows that in 2020 the area of rice harvested land in Indonesia was 10,657,274.96 hectares, however in 2021 it showed a decrease to 10,411,801.22 hectares only. However, in 2020 there was a slight increase in the area of rice harvested land in Indonesia to 10,452,672.00 hectares. Inconsistent increases in the amount of production and area of rice harvested land could result in a shortage of rice stocks in Indonesia, and it is estimated that this could affect the number of rice imports in Indonesia (Hasanah, 2022).

In addition to production factors and the size of the harvest area, the amount of rice imports in Indonesia can be caused by the increase in population which has increased from year to year (Paipan & Abrar, 2020). We can see this from data from BPS which shows that in 2020 the population in Indonesia was 270,203.9 thousand people and the latest data taken in 2022 was 275,773.8 thousand people, this data shows that there is an increase in population amounting to 5,569.9 thousand people over the last 3 years. The increase in Indonesia's population is of course followed by an increase in domestic consumption (Surya, 2021).

Data from databox shows that in 2020 the average rice consumption in Indonesia was 1,379 kg per week, then in 2022 the average rice consumption figure increased by 4.7%, namely 1,470 kg per week. The increasing population will increase the demand for rice, and efforts to increase domestic productivity cannot meet domestic rice needs (Fauzi et al., 2019). To cover the shortage, the government made the decision to import rice from other countries. Therefore, this study aims to examine the effect of declining rice production on the increasing number of rice imports in Indonesia and solutions from an Islamic perspective. The new findings in this study are Islamic perspective solutions, namely (1) Describing the implications of rice import dependence; (2) Explaining the causes of decreased rice production with cognitive-ecolinguistic structures; (3) Offering paradigmatic solutions in the form of Islamic concepts and methods of food security.

2. RESEARCH METHODS

The method used in this research is descriptive analysis (Nugraha, 2019) and explanatory (Hernandez et al., 2021). This method has three steps, namely data provision, data analysis, and data presentation (Nugraha et al., 2019). The use of this method is based on a combination of theories, eclectically, namely dependency theory (Rosyidin, 2020), cognitive-ecolinguistic structure (Ma & Stibbe, 2022), Islamic paradigm (Amhar & Prima, 2023), and Islamic civilization (Sudjatnika & Shafarini, 2022).

2.1. Data Provision Method

The data collection technique used is a literature study (Stibbe, 2020). This literature study technique aims to document various types of previous research and existing sources such as books, journals, and also other print media.
such as websites that aim to document various sources originating from the internet in order to find out relevant information and can support writing.

2.2. Study Approach and Data Analysis

This study uses an explanatory approach because this research will provide an explanation using the concept of causality (cause-and-effect) with the aim of explaining phenomena based on the theories and paradigms chosen by the author (Rohmaniyah et al., 2021). This study uses two variables, namely the independent variable and the dependent variable. Independent variables are variables that are used to explain the behavior of the dependent variable (unit of analysis). Meanwhile, the dependent variable is the variable whose behavior will be analyzed, predicted, and predicted by the independent variable (explanation) (Vinsensio Dugis, 2018). In research on the Effect of Declining Rice Production on Increasing the Number of Rice Imports in Indonesia in 2020-2022, a clear division is needed between the unit of analysis and the unit of explanation. The unit of analysis in this study is the increase in the number of rice imports in Indonesia in 2020-2022 and the unit of explanation of the effect of decreased rice production. The level of analysis applied here is correlational because, in this study, the units of analysis and explanation are at the same level, namely the nation-state, namely the decrease in the amount of rice production that affects the increase in the number of rice imports in Indonesia.

2.3. Data Provision

The presentation of data in this descriptive-explanatory method is by describing the data in the form of a percentage table, then explained in an explanatory manner (Dasa & Dkk, 2022).

3. RESULTS AND DISCUSSIONS

Based on data from BPS, data on the agricultural land area (2020-2022) Table 1, rice production (2020-2022) Table 2, rice imports (2018-2023) Table 3, and world rice production (2022) Table 4 are obtained. (See https://www.bps.go.id/indicator/53/1498/1/luas-panen-produksi-dan-produktivitas-padi-menurut-provinsi.html)

<table>
<thead>
<tr>
<th>Table 1. Indonesia’s Agricultural Land (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDONESIA’S AGRICULTURAL LAND (HA)</td>
</tr>
<tr>
<td>2020</td>
</tr>
<tr>
<td>10657275</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2. Indonesia’s Rice Production (M Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDONESIA’S RICE PRODUCTION (M tons)</td>
</tr>
<tr>
<td>2020</td>
</tr>
<tr>
<td>54649202.2</td>
</tr>
</tbody>
</table>

Based on the data in Table 1, from 2020 to 2021, there was a shrinkage in agricultural land by 2.3% (245473.7 ha). As a result, there was a decrease in rice production by 0.4% (233908 M tons). From 2021 to 2022, agricultural land increased by 0.4% (233908 ha), so rice production increased by 0.6% (333682.8 M tons).

<table>
<thead>
<tr>
<th>Table 3. Indonesia’s Rice Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDONESIA’S RICE IMPORTS</td>
</tr>
<tr>
<td>YEAR</td>
</tr>
<tr>
<td>2018</td>
</tr>
<tr>
<td>2019</td>
</tr>
<tr>
<td>2020</td>
</tr>
<tr>
<td>2021</td>
</tr>
<tr>
<td>2022</td>
</tr>
<tr>
<td>2023*</td>
</tr>
</tbody>
</table>
### Table 4. World’s Rice Production 2022

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>M TONS</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>147000000</td>
<td>34.3%</td>
</tr>
<tr>
<td>India</td>
<td>124000000</td>
<td>29.0%</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>35650000</td>
<td>8.3%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>34600000</td>
<td>8.1%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>27225000</td>
<td>6.4%</td>
</tr>
<tr>
<td>Thailand</td>
<td>20100000</td>
<td>4.7%</td>
</tr>
</tbody>
</table>

#### 3.1. Implications of Dependency Theory

The following is Table 3 converted into Figure 1 of Indonesia’s Rice Imports.

**Figure 1. Indonesia’s Rice Imports 2020-2023**

Based on Figure 1, Indonesian Rice Imports 2020-2023, in the context of dependency theory, the theory states that countries that import a lot of food will be very dependent on other countries in terms of food availability. Dependence on food imports can occur due to several factors, such as production, distribution, land availability, population growth, and food policy. So it can be assumed that the decline in production, decline in agricultural land, and continued increase in population could result in an increase in the amount of rice imports in Indonesia in the 2020-2023 period. If the increase in population is not followed by an increase in production and expansion of agricultural land, then dependence on rice imports will increase. This is proven by data taken from BPS which shows that in 2020 Indonesia imported 356,286.2 thousand tons of rice and experienced an increase in 2022 to 429,207.3 thousand tons. Through this data, it can be interpreted that in the 2020-2022 period, rice imports in Indonesia will increase by 20.47%. Based on Table 4, Indonesia is the 4th largest producer in the world. This is caused by a need that cannot be met through domestic production, so Indonesia is forced to import rice to meet domestic food needs. Increased dependence on rice imports could hurt food availability in Indonesia. Other data taken from BPS, table 5, and Graph 2 show that Indonesia is very dependent on India to meet its domestic rice needs, with the percentage of imports reaching 41% (of Indonesia’s total rice imports), followed by Pakistan at 20%. Thailand is the third largest country importing rice for Indonesia at 19% (Chaireni et al., 2020).
Indonesia’s increasing dependence on rice imports can affect the domestic market when there are global supply disruptions or fluctuations in rice prices on the international market, which can make it difficult for Indonesia to meet its domestic rice needs. In addition, increased rice imports also pose a risk for local farmers in Indonesia. If imported rice is cheaper than domestic rice, local farmers may face stiff competition and difficulties in selling their crops at competitive prices. This can reduce incentives for farmers to increase rice production, which has the potential to worsen the long-term food security of the country. This can be seen from the data taken from BULOG Public Corporation (Indonesian Logistics Bureau), which notes that the average price of imported rice is IDR 6,500 per kilogram while the average price of local rice is IDR 10,000-11,000 per kilogram. The fluctuations in the market price of rice can affect people’s purchasing power, particularly those with low income.

3.2. Cognitive Structure of Food Security

There are five cognitive structures found in this study, including (1) ideology, (2) eco-Sufism values, (3) ecological discourse analysis, (4) identity, and (5) belief. First, according to (Ma & Stibbe, 2022) based on an ecocultural perspective, ideology is a belief system or worldview shared by members of certain groups in society. See Figure 3, about the three ideologies in the world, as follows:

![Figure 3. Three ideologies in the world](image)

Based on Figure 3, there are three world ideologies, including (1) Liberalism, the basic concept is secularism in the form of teachings that separates the role of religion in life. They assume that after creating the universe, God does not...
interfere in regulating life. Therefore, the rules of life are regulated based on human agreement. They assume that all humans go to heaven; (2) Socialism is the teaching whose basic concept rejects the existence of God. They assume that this life comes from the material. The process of life is in the form of natural selection, then develops and ends up becoming material; (3) Islam, its basic concept is believing that the beginning of life was created by Allah Almighty. The main task of humans as creatures created by Allah is to worship Him as the manager of the universe based on His rules. Therefore, the end of human life is determined by one's obedience or disobedience to Allah's rules. If you obey, you will enter heaven, if you disobey, you will enter hell.

Second, according to (Stibbe, 2020) based on eco-Sufism values, namely valuing a prosperous life for present and future generations; still caring about environmental limitations, social fairness, and deep adaptation to be sustainable and full of blessings (Nugraha, 2019). Therefore, food security in Indonesia including rice production independence should become the focus of rice self-sufficiency (Clapp et al., 2022). Based on Islamic ideology, Allah has endowed Indonesia with various food and agricultural resources, namely the diversity of agricultural commodities, abundant water resources, vast and fertile agricultural area, as well as the sun that shines throughout the year. All of these are natural factors that support the realization of food security and sovereignty. In addition, intellectual resources and experts in the field of agriculture, as well as a large population become the capital of the availability of human resources for farmers, breeders, and other agricultural business actors.

Third, according to (Li, 2022), the results of systemic functional linguistics-based ecological discourse analysis can help reveal the ecological concepts and ideologies behind ecological discourse, so as to increase public awareness of ecological protection and build harmonious relationships between humans and nature. Among others: The fact that neoliberal policies increasingly marginalize farmers. In fact, they are the main actors to support the realization of food security and sovereignty.

Fourth, according to (Shuaib et al., 2022) the value and identity level of environmental communication should change people's thoughts and feelings so as to support and promote environmental sustainability. Self-Sovereign Identity (SSI), SSI application in the domain of land registration system is given to propose an SSI-based land registration framework for a secure and reliable land registration system.

Fifth, the belief that human activities are most responsible as the cause of global climate change. According to (Ranius et al., 2023) there are five categories of environmental recommendations, namely: (i) Ensure adequate connectivity; (ii) Protect climate refugees; (iii) Protect a few large areas rather than many small areas; (iv) Protect areas expected to be important for biodiversity in the future; and (v) Add permanently protected areas with temporary protection.

3.3. Islamic Paradigm Concerning Food Security

A paradigm is a set of concepts, values, and methods that influence mindsets and attitudes. So, the Islamic paradigm (Basri et al., 2022) is a set of Islamic concepts, values, and methods for solving food security. The source of Islamic concepts is the Qur'an, while the source of Islamic methods is the Sunnah of the Apostle SAW. The strategic technique can be by ijtihad on the arguments of the Qur'an, Sunnah, Ijma' Sahabah, and aqiyas of the mujtahid.

Islam orders Muslims to have independency in managing all affairs of life based on Islamic law, including food security (Ibrahim et al., 2022). Allah Taala says in Surah An-Nisa, 4: 141,

وَلَن يَجْعَلِ اللَّهُ إِلَّا مَنْ كَتَبَ لَهُ مِنْ أَمْنَسَبٍ أَنْ تَحْرِمَهُ الْكَبْرَى وَلَا يَجْعَلْ إِلَّا مَنْ كَتَبَ لَهُ مِنْ أَمْنَسَبٍ أَنْ تَخْرِجَهُ الْكَبْرَى

"And Allah will never grant the disbelievers a way over the believers."

In Sunnah Nabawiyyah (Foda, 2023), the Prophet SAW said:

"And Allah will never grant the disbelievers a way over the believers."

Narratd `Abdullah bin `Umar: The Prophet (ﷺ) said, "Everyone of you is a guardian and everyone of you is responsible (for his wards). A ruler is a guardian and is responsible (for his subjects); a man is a guardian..."
Also, (Esma et al., 2021) the Prophet SAW said:

Narrated Anas bin Malik: The Prophet (ﷺ) said, “If any Muslim plants any plant and a human being or an animal eats of it, he will be rewarded as if he had given that much in charity.” (Hadith of Bukhari-Muslim)

Next, (Al-Asmari, 2023) the Prophet SAW said:

Narrated Jabir (Allah be pleased with him), The Prophet (ﷺ) said: Never does a Muslim plant a tree except that he has the reward of charity for him, for what is eaten out of that is charity; what is stolen out of that, what the beasts eat out of that, what the birds eat out of that is charity for him. (In short) none incurs a loss to him but it becomes a charity on his part.

Based on the arguments sourced from the Qur'an and As-Sunnah above, we can understand that the two major steps are cognitive structures based on the Qur'an Surah An-Nisa, 4:141, and the Sunnah on the theme of ecology.

3.3.1. Cognitive Structure based on the Qur'an

According to BPS data 2022, the area of agricultural land in Indonesia tends to decrease. This results in a decrease of Indonesia's rice production. Hence, there was an increase in rice imports. So as a solution in accordance with the Islamic concept, it is necessary to intensify, namely the expansion of agricultural land supported by intensification in the form of optimizing the quantity and quality of rice production. In the interpretation of Surah An-Nisa, 4: 141, methods and techniques to increase rice production are explained. Methods of increasing agricultural yields, especially rice are intensification, extensification, diversification, mechanization, and agricultural rehabilitation.

Here is the explanation. First, agricultural intensification is to cultivate agricultural land efficiently and effectively. The steps include: is to cultivate agricultural land effectively and efficiently. The steps include managing agricultural land well; building solid irrigation; using superior rice seeds; fertilizing regularly; eradicating rice pests; using appropriate technology; conducting education and training of human resources in agriculture; and processing agricultural products effectively and efficiently. Second, agricultural extensification is increasing agricultural yields by expanding land. The steps include opening up forest areas, utilizing areas around swamps, opening up shrubs, and opening up agricultural land that has not been used. Third, agricultural diversification is a way to utilize several types of crops as a substitute for rice, for example planting corn to reduce dependency on rice. Fourth, agricultural mechanization is a way to increase agricultural yields by using modern agricultural machines. Fifth, agricultural
rehabilitation is a way to increase agricultural yields by rehabilitating agriculture, namely repairing non-productive land into land that is productive again.

3.3.2. Cognitive Structure based on Sunnah Ecology Theme

Based on the explanation of the hadiths of the Apostle SAW above, the preparation of human resources in agriculture is by providing motivation, not only material, benefactive, development, sustainability, and blessing. This is in accordance with the spirit of the agricultural revolution carried out along with the industrial revolution. This means taking adequate care of agricultural wealth to increase production. Because doing the agricultural revolution and industrial revolution together is the spearhead of progress.

The explanations are: First, material benefits of agricultural production are benefits in the form of food supply to meet human needs; availability of agro-industry raw materials; availability of agricultural biomass energy sources that can be processed into renewable and sustainable energy. Second, beneficial benefits in the form of food security, community-based economic empowerment, conservation of natural resources, and improved quality of life. Third, sustainable food security with adequate production so that all communities can access it at stable prices for prosperous survival. Fourth, improvement and development of quality of life by fulfilling nutritional needs. Fifth, the blessing of agriculture if the community continues to pay attention to the distribution of agricultural products with zakat, infaq, and sadaqah.

4. CONCLUSION

Based on the results of the discussion above, the findings of this study are solutions from an Islamic perspective, including: First, dependence on rice imports is caused by a decrease in rice production. Increased dependence on rice imports could have a negative impact on food availability in Indonesia; Second, the cause of the decline in rice production is reduced agricultural land and not optimal management of rice production. Third, Islamic paradigmatic solutions regarding value-based food security originating from the Al-Qur'an and As-Sunnah are the extensification of agricultural land and the intensification of rice production. As for practically based on ecologuistic cognitive structure there are five, namely: (1) ideology, (2) ecosophical values, (3) results of ecological discourse analysis, (4) identity, and (5) Beliefs.

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